Appointment

From: Ross, David P [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=119cd8b52dd14305a84863124ad6d8a6-Ross, David]
Sent: 7/20/2018 2:34:43 PM
To: Forsgren, Lee [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a055d7329d5b470fbaa9920ce1b68a7d-Forsgren, D]; Nagle, Deborah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33888a2bbe8f48aeb4ad9cc54259fb4e-dnagle]; Matuszko, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=94eefc2788084d73a97caf80d30a0e24-JMatuszk]; McDonough, Owen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=10a92c71b552413694fed6fa08522f4f-McDonough,]; Wood, Robert [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b2676c137cf54db0a5d98df232901821-Wood, Robert]
CC: Caravelli, Margaret [mcaravelli@balch.com]; Penman, Crystal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=93662678a6fd4d4695c3df22cd95935a-Penman, Crystal]; Campbell, Ann [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b8c25a0c2fb648b6a947694a8492311e-Campbell, Ann]; Damico, Brian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5293065367ab48c2bb2ebadcf992c0d6-BDamico]; Beeman, Guy M. [gmbeeman@marathonpetroleum.com]

Subject: Refining Effluent Guidelines Letter
Attachments: Real ID Information.pdf; FW: Meeting Request with Assistant Administrator Ross
Location: 1201 Constitution Ave NW, Washington DC 20004; WJCE 3233; Pleae call 202-564-5700 for escort

Start: 8/24/2018 3:00:00 PM
End: 8/24/2018 3:30:00 PM
Show Time As: Busy

Recurrence: (none)

Guy Beeman, Manager, Federal Affairs, Marathon Petroleum
Tim Peterkoski, Manager, Environmental Auditing and Processes
Ruth Cade, Refining Environmental Manager
Margaret Caravelli

Margaret Caravelli, Partner, Balch & Bingham LLP
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Message

From: Caravelli, Margaret [mcaravelli@balch.com]
Sent: 6/28/2018 6:00:53 PM
To: Penman, Crystal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=93662678a6fd4d4695c3df22cd95935a-Penman, Crystal]
CC: Beeman, Guy M. (MPC) [gmbeeman@marathonpetroleum.com]
Subject: FW: Meeting Request with Assistant Administrator Ross
Attachments: RefiningEffluentGuidelinesLetter.pdf

Flag: Follow up

Crystal:
Again sincere apologies for sending this to Crystal Edwards and not directly to you!
And I know better since Anna Wildeman let me know a few weeks ago to work with you to schedule meetings.

Please see below for the original email meeting request. I've cc'd Guy Beeman from Marathon Petroleum as well.

Thank you in advance for your assistance.

Regards,
Margaret

From: Caravelli, Margaret
Sent: Monday, June 25, 2018 1:36 PM
To: 'Campbell.Ann@epa.gov'; 'Edwards.Crystal@epa.gov'
Cc: Beeman, Guy M. (MPC); 'Forsgren.Lee@epa.gov'
Subject: Meeting Request with Assistant Administrator Ross

Ms. Campbell & Ms. Edwards:
Your colleagues in the Office of Air and Radiation suggested I reach out to you both in regard to scheduling a meeting in July with Assistant Administrator Ross. This meeting would be in follow up to a letter recently sent to the Office of Water by API and AFPM regarding EPA's on-going study of effluent limitation guidelines for petroleum refining. (See attached).
Our client, Marathon Petroleum, would like to meet with Assistant Administrator Ross to discuss the letter. Copied on this request is Guy Beeman, Manager, Federal Affairs, Marathon Petroleum.
Please let us know what additional information and details you may need in regard to this request. You may reach me at Ex. 6

Thank you in advance for your assistance.

Regards,
Margaret

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& BINGHAM LLP

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June 8, 2018

Mr. Brian d'Amico
Branch Chief
Engineering and Analysis Division
Office of Science and Technology
Office of Water
United States Environmental Protection Agency
Mail Code 4303 T
1200 Pennsylvania Avenue Northwest
Washington, DC 20460

Dear Mr. D'Amico:

On behalf of our members, the American Petroleum Institute (API) and American Fuel and Petrochemical Manufacturers (AFPM) are providing the following update and comments concerning the Environmental Protection Agency's (EPA's) on-going Detailed Study of effluent limitation guidelines (ELGs) for the petroleum refining point source category. API is a nationwide, non-profit, trade association that represents over 625 members engaged in all aspects of the petroleum and natural gas industry, including exploration, production, refining, and distribution of petroleum products. AFPM is a national trade association representing nearly 400 companies that encompass virtually all U.S. refiners and petrochemical manufacturers. AFPM members operate 120 U.S. refineries comprising more than 95 percent of U.S. refining capacity. API and AFPM members are subject to effluent limitation guidelines, including those in the petroleum refining point source category, and so are directly affected by all aspects of the on-going Detailed Study.

We appreciate the cooperative and trusted relationship cultivated over the last several years we have worked together on the Detailed Study. As we have discussed on multiple occasions, API and AFPM members have invested heavily in wastewater treatment technologies where warranted for addressing local water quality concerns. API and AFPM believe EPA has sufficient data, including discharge monitoring reports, toxic release inventories, site visit reports, and the 308 Questionnaire responses, to determine that the existing effluent limitation guideline technology-based limits (TBELs), taken in combination with water-quality-based effluent limits (WQBELs), are protective of human health and the environment, and that revisions to existing petroleum refining TBELs are not warranted. We request EPA analyze the aforementioned discharge monitoring reports, toxic release inventories, site visit reports, and the 308 questionnaire responses, to inform whether it is necessary to proceed with the refinery self-

monitoring program. We believe EPA upon doing so will agree that the data support the conclusion that ELG revisions are not warranted.

If EPA determines the refinery self-monitoring program is justified, EPA should narrowly tailor the program to filling gaps in the available data. Also, EPA should remove naphthenic acids (NAs) and alkylated polynuclear aromatic hydrocarbons (alkylated-PAHs) from the scope of the sampling phase. While we have yet to receive EPA's preliminary analysis, we do appreciate the responsive nature by which EPA shared documentation for the analytical method(s) for alkylated-PAHs and NAs. That said, after thorough and critical review of the documentation by leading industry experts, our members' concerns (detailed in Attachment A) are not resolved. API and AFPM membership strongly oppose inclusion in the Detailed Study of the proprietary analytical method for naphthenic acids and the non-promulgated method for alkylated-PAHs. Data derived from these methods could result in the EPA facing substantial scientific and legal challenge.

Moreover, EPA's use of the proprietary method for naphthenic acids is in clear contradiction to EPA's recent proposed rule to strengthen transparency in regulatory science (83 Fed. Reg. 18768, April 30, 2018, "Strengthening Transparency in Regulatory Science"). The summary of EPA's proposed rule states, "The proposed regulation provides that when EPA develops regulations, including regulations for which the public is likely to bear the cost of compliance, with regard to those scientific studies that are pivotal to the action being taken, EPA should ensure that the data underlying those are publicly available in a manner sufficient for independent validation." Independent validation is clearly not possible when a proprietary analytical method is used to generate the data. In the interest of transparency, per its own proposed rule, EPA should abandon the use of this proprietary method in the Detailed Study.

API's and AFPM's remaining concerns are summarized as follows:

A. Analysis of collected data

EPA has yet to share preliminary analysis of existing data, including discharge monitoring reports, toxic release inventories, site visits, and the 308 Questionnaire responses. Sharing the analysis will clarify the necessity and scope of the sampling phase as well as attain early scientific concurrence with stakeholders. Analysis of existing data should be complete before EPA moves forward with additional data collection through the self-monitoring program.

B. Method not proved in analysis of refinery wastewaters

The method developed by Axys Laboratories, intended for use for analysis of samples in the Study, has never been tested on refinery wastewaters. The documentation provided by EPA suggests that interferences in complex matrices (e.g., refinery wastewaters and effluent), may impact data quality, giving rise to highly variable data, including false positive and/or negative results.

C. Proprietary method impairs validity of data

The proposed analytical method for naphthenic acids is neither an EPA-approved nor an industry-adopted method. In fact, it is Axys Laboratories' proprietary method which directly prevents our members from validating, evaluating or replicating any results. This is a deviation from past EPA procedures and provides neither sufficient transparency nor scientific validity to the Study.

D. Absence of documented environmental benefits

EPA has not identified the environmental concern for including NAs and alkylated-PAHs in the Study. As per the well-established procedures used in past effluent guideline studies, constituents should have an associated toxicity to determine the measurable environmental benefit that may result, if removed. The science and data for the toxicity of NAs and alkylated-PAHs are still a work in progress.

In this regard, we note that of the naphthenic acids and alkylated-PAHs that would be analyzed by the prescribed methods, the vast majority of specific compounds within these mixtures are of a size that could not cross biological membranes to cause toxicity. Typically, compounds with log octanol:water partition coefficients exceeding 6.4 are excluded from toxicity assessments by the target lipid model approach. Quantifying these analytes within "total NAs" or "total alkylated-PAHs" introduces error/bias.

EPA should make available API/AFPM for our review any petroleum refinery toxicity identification evaluation (TIE) data demonstrating naphthenic acid and/or alkylated-PAH toxicity constituting the basis for inclusion of these broad classes of analytes within the Detailed Study.

API and AFPM members believe in due diligence and support EPA in developing sound science. We therefore strongly recommend that EPA remove naphthenic acids and alkylated-PAHs from the Detailed Study. Rather, we recommend that these constituents and their analytical methods be addressed in a project outside of the Study, in which the industry will be a willing participant. A separate project would also allow EPA to follow the appropriate public notice and comment period required to gain method approval. API and AFPM will be happy to discuss the concerns and suggestions in a face-to-face meeting and come to an agreement that addresses the need for validated, reproducible science in support of environmental goals.

In summary, API/AFPM believe refining ELG revisions are not warranted. If EPA continues the Detailed Study, EPA should narrowly tailor the refinery self-monitoring program to filling gaps in the available data. And API/AFPM strongly recommend EPA remove naphthenic acids and alkylated PAHs from the Detailed Study. API/AFPM would participate with EPA in a project outside the Detailed Study to address analytical methods for naphthenic acids and alkylated PAHs.

If you have any questions about these concerns or would like to arrange a face-to-face meeting, please feel free to contact us.

Sincerely,

Roger E. Claff
Senior Scientific Advisor, API

Jeff Gunnulfsen
Director, Security and Risk Management Issues, AFPM

Attachment

cc: R. Wood, EPA
D. Ross, EPA
L. Forsgren, EPA

Attachment A - Report to API and AFPM on Issues with the EPA Proposed Analytical Methods for Groups of Naphthenic Acids and alkylated-PAHs, and the Potential Impact on an ELG Investigation

Introduction

The American Petroleum Institute and American Fuel and Petrochemical Manufacturers (API/AFPM) received a number of documents from the U.S. Environmental Protection Agency (EPA) concerning experimental methods used by AXYS Laboratories for the analysis of naphthenic acids (NAs) and alkylated polynuclear aromatic hydrocarbons (PAHs). Two documents were brief method summaries of the laboratory's analytical procedures. Also included in these documents were Inter-laboratory studies involving these two analytical methods. API/AFPM has examined these documents in considerable detail, and has a number of concerns about these methods, as described in the following report. Our overall conclusions are that these methods are currently highly experimental and should not be used to evaluate refinery wastewater or develop wastewater regulations for the refinery industry.

I. Summary of Issues

1. The AXYS method for naphthenic acids is proprietary to AXYS. As such, EPA did not and could not provide the method procedures for review and comment. EPA intends to require use of the AXYS naphthenic acids method in the petroleum refining detailed study refinery self-monitoring program, notwithstanding the method is proprietary to AXYS. This intention is in clear contradiction to EPA's recent proposed rule to strengthen transparency in regulatory science (83 Fed. Reg. 18768, April 30, 2018, "Strengthening Transparency in Regulatory Science). The summary of EPA's proposed rule states, "The proposed regulation provides that when EPA develops regulations, including regulations for which the public is likely to bear the cost of compliance, with regard to those scientific studies that are pivotal to the action being taken, EPA should ensure that the data underlying those are publicly available in a manner sufficient for independent validation." Independent validation is clearly not possible when a proprietary analytical method is used to generate the data. If EPA seeks transparency, per its own proposed rule, EPA will abandon the use of this proprietary method in the petroleum refining detailed study.

2. The exact definitions of compounds to be included in both the naphthenic acid compound and alkylated PAH compound groups are still not decided, and the analytical lists for each vary widely. In the Environment Canada Inter-laboratory Study on Alkylated PAHs, part of the conclusion states: "This first assessment of the current state of the PAH and alkyl-PAH analysis of environmental samples was rather ambitious. Over 100 separate measurands were asked to be reported in 3 separate matrices. Future studies will focus on a target list more closely approximating the one found in ASTM D7363-11." They also stated they should focus on one matrix per study. This is a concession that the analytical method is unwieldly and matrix

effects are poorly understood, and the reported quantitative results for many of the PAH homologs were extremely poor.

3. For the NAs, Environment Canada is promoting the concept that aromatic naphthenic acids should be included in the "total naphthenic acids" analytical categories. The aromatic NAs are not currently included in the category, and API/AFPM strongly opposes their inclusion. If they were included with other NAs, this would imply that the toxicological and physical-chemical properties of aromatic NAs are basically the same as the properties for the NAs with no aromatic rings in their structure, and this comparability is not known or understood at this time. To determine this, a dependable and vetted method must be developed to analyze aromatic NAs as separate entities, so that their properties can be determined. There currently is no EPA peer reviewed and approved method for either the non-aromatic or aromatic NA categories.

4. The summary AXYS Analytical Method for NAs provided by EPA (the version was dated February 15, 2018) is an extremely complex and detailed method that attempts to separate the NAs in aqueous samples into 60 different categories of compounds. API/AFPM has concerns about several specific issues, some of which may have been overlooked in the necessarily abbreviated AXYS summary overview of the method. Some of our concerns and reservations are discussed below. All of these concerns and others are discussed in the full report.

   - The calibration curve for all sixty categories of naphthenic acid compounds is only provided by a single compound: 1-pyrenebutyric acid, which does not even qualify as a naphthenic acid due to the aromatic rings in its side chain. Further, 1-pyrenebutryic acid is used to generate response factors for the quantification of target compounds. Using a single compound to calibrate perhaps a hundred compounds, without evaluation of consideration of the various structural groups, will result in response factors orders of magnitude apart and will generate a highly biased data set.

   - The summary method states that several of the sixty categories either can or do contain some aromatic NAs, particularly in categories where the "z value" equals minus ten or minus twelve. It is unclear if the method can recognize which compounds are aromatic, but it appears the answer may be no, because otherwise they could be subtracted out from the total for each group. It is also unclear whether additional aromatic compounds may be present in some of the other analytical groups but cannot be detected as such by molecular weight.

   - The summary provides no discussion, for example, of the QC controls on the completeness of the derivatization reaction. We are concerned that di- or tri-carboxylic acids might get counted if only one carboxyl group is derivatized, while mono-carboxylic acids might be missed. Conversely, if two or three carboxylic acid groups per molecule do get derivatized, could molecular weight (MW) fragments of an original di- or tri-carboxylic acid be mistaken for some of the mono-carboxylic acids that are the intended analytical target?

- We note that for at least two of the chromatograms depicted on page six, there seems to be significant interfering overlap of some peaks within the same molecular weight. We are concerned that the interference could be many times greater for actual refinery wastewater, and that these interferences might be "double-counted" in any final total result, especially in highly complex wastewater matrices.

5. For naphthenic acids, the two Inter-laboratory Studies provided by EPA from Environment Canada did not provide any comparison of the analyses of different categories of naphthenic acids. The quantitative assessment was limited only to "total naphthenic acids" and included analyses by several different methods. For total NAs, the AXYS laboratory was evaluated with a somewhat high overall recovery for total NA (115-120%), which was typical of the labs using some form of liquid chromatography/mass spectroscopy (LC/MS) method in this study. (We are again concerned whether in more complex wastewater samples, this slight high bias might be much higher.) Given the dates of these studies (2012 and 2016), it is unclear whether the version of the AXYS Method (dated 2/15/18) described in the summary provided by EPA/AXYS was the same version as used for these two earlier studies.

6. Conclusion Number 8 for the 2016 Naphthenic Acid Inter-laboratory Study stated the following: "The complexity of the background matrix needs to be increased further. The synthetic toxicity testing matrix is suitable for method validation purposes but future inter-laboratory studies should use a natural water matrix for all samples." API/AFPM agrees that this is needed, and has stated that actual refinery samples, especially untreated wastewater samples, can greatly complicate the analytical process for many well established methods, let alone experimental procedures currently being developed.

7. EPA provided one Inter-laboratory Study for Alkylated PAHs. Most of the laboratories performed quite well on the traditional single-compound PAHs, with on average about a 22% Relative Target Standard Deviation (RTSD) per compound for aqueous samples. However, the story was entirely different for the alkyl-PAH homolog groups. For aqueous samples, the average RTSD was extremely large at 80%, with some PAH homolog groups being well over 100% RTSD. If the standard data acceptance criterion of plus or minus three standard deviations is applied to this data, it is difficult to describe the analysis of these PAH homologs as being even semi-quantitative. The literature documents errors associated with EPA 8270, resulting in overestimation of alkylated PAH concentrations (Wilton et al. *Analytica Chimica Acta* 977 (2017), pp. 20-27).

8. We are also concerned about how toxic weighting factors (TWF) might be developed and applied to analytical groups or subgroups (such as naphthenic acids or alkylated PAH compounds) that could include hundreds of different compounds. Typically, toxicity testing is performed using pure individual compounds; this assures that during toxicity testing, the

source of any toxicity can be attributed to that specific compound. We are concerned that for large groups of unidentified compounds, any perceived TWF observed during toxicity testing could be due to a very few compounds that are not representative of the overall group or are only present in that group of compounds when analyzed from a specific source. These few compounds may or may not be present in an analytical group from other sources or other types of wastewater. It should be noted that in Conclusion number 6 to the 2016 total Naphthenic Acid Inter-laboratory Study, Environment Canada expressed concern that the commercially available standard, Merichem Naphthenic Acid Solution (used to spike the samples, and presumably a similar mixture might be used for any toxicity testing), did not seem to match the contaminants in wastewater at the Athabasca oil sands region (sample OSPW in the study). By inference, this comment suggests that if the current naphthenic acid standard mixture solutions are not representative of oil sands process-affected water (OSPW), they are unlikely to be representative of other types of water matrices such as treated refinery wastewater either and therefore are inappropriate for determining what constituents might cause toxicity in refinery wastewater.

II. Issues Concerning an Exact and Appropriate Definition of the Compounds Being Analyzed for both Naphthenic Acids and alkyl-PAH Homologs

Based on published scientific literature discussing the analyses of both Alkylated PAHs and Naphthenic Acids, there are significant discrepancies as to exactly what types of compounds are considered appropriate to include into each of these groups. The grouping of compounds varies between different agencies (EPA, Canada, various US states), environmental papers, and also with the laboratories analyzing the samples (even in the inter-laboratory study by Environment Canada). There should be a clear and vetted definition of exactly what is intended to be measured and included within each of these broad analytical groups, and only peer-reviewed and approved methods should be used.

A. Naphthenic Acids: Strict Definition and Potential Issues

The AXYS Laboratory definition of a naphthenic acid is any configuration of fatty acid chain that 1) contains between twelve and twenty-one carbons, 2) that does not contain any aromatic carbon rings, 3) has only a single carboxylic acid group, and 4) is either saturated or has a degree of unsaturation defined by a negative "z" number that can equal the even numbers 0, -2, -4, -6, -8, -10, or -12, with each negative even number progressively corresponding to the loss of two more hydrogen atoms due to double bonds or alkyl carbon rings. The general formula is: $C_nH_{2n+z}O_2$. In common language, this definition and formula includes most naturally occurring fatty acids, and these can be saturated (maximum number of hydrogens: z = 0), monounsaturated (missing two hydrogen atoms due to a double-bond or cyclic non-aromatic ring: z = -2), or polyunsaturated (multiple double bonds, or more rarely, multiple cyclic, non-aromatic rings: z = higher even negative numbers up to -12). This definition of naphthenic acid (and, perhaps, any definition) is far from universally held, making data comparisons nearly impossible. There are some other

definitions in use (or that have been used) that utilize greater or lesser numbers of carbon atoms, a larger number of carboxylic acid groups, the presence (or absence) of some cyclo-alkane compounds, or different degrees of saturation. This particular definition used by AXYS might be due to the analytical method being used, or to the industrial wastewater being studied, or to certain common chemical properties these acids have in common. However, this definition of naphthenic acids is already very broad and can include hundreds or even thousands of compounds (including isomers).

Most of these fatty acids that meet this strict definition are essential components in vegetable oils, dairy products, animal fats, and also in processed foods such as dehydrogenated or polyunsaturated fats or fatty acids and are unlikely to be toxic. However, there evidently is a movement to broaden the definition of naphthenic acid to include carboxylic acids that contain aromatic rings, and Environment Canada has come out in favor of this. (Aromatic carbon rings are the primary constituents of benzene and PAH compounds.) API/AFPM would oppose such a move, because these compounds, if present in treated refinery wastewater, could possibly have significantly different characteristics from the normal aliphatic NAs that are presumably the main target for the analysis. API/AFPM opposes any such change on the grounds that any toxicity that might be measured could be due almost entirely to the inclusion of these aromatic compounds, which might then be transferred to other aliphatic NAs that have little or no toxicity to humans. (The human toxicity factor, or carcinogenicity, is nearly always the main driver when organic compounds are assigned a high TWF.) API/AFPM believes that the compounds that contain aromatic rings in their side-chains might have significantly different toxicological and physical-chemical properties than the standard defined naphthenic acids. Therefore, if they are found to be present in refinery wastewater, they should be evaluated separately from naphthenic acids. This is discussed in more detail in the portion of this report on the potential assignment of TWFs by EPA to analytical results that represent large groups of related compounds.

B. Alkylated PAHs: Definition has apparently been changed several times in recent years

In just the last few years, there have been numerous papers published discussing alkylated PAHs, and nearly all of the papers are different in assuming which types of compounds are to be included under that label. Many of the compounds discussed clearly do not fit the strict scientific definition of alkylated PAHs, i.e. a group of fused hydrocarbon aromatic rings (usually two to five) with substitutions of alkyl groups (methyl, ethyl, propyl, etc.) at some of the available locations around the fused rings. Some of these additional compounds have perhaps incorrectly been justified for inclusion in the group because they are frequently associated with PAH compounds, such as being common components of coal tar (which is to a large extent made up of PAH compounds). Others have even less justification for inclusion in the group. It appears that EPA is currently favoring the list of analytes that is provided with the AXYS Method (MSU 21C, provided by EPA).

Table 1 is a list of compound categories that are or have been suggested to be included in a list of alkylated PAH compounds that could be analyzed. The top three categories of compounds have been included in the AXYS analytical list, along with the traditional single compound PAHs. Compounds towards the bottom of Table 1 are not currently included in the AXYS list of analytical categories but are discussed in various other papers as possibly being identified as alkylated PAHs. It is unlikely that there is any single laboratory currently analyzing all of the compound/group categories in Table 1, and we believe it unlikely that any laboratory is using a method where all possible combinations within each compound group category are analyzed. Even AXYS and the other participants in the Environment Canada Inter-laboratory study (for alkylated PAHs) did not each perform the analysis on all of the over 100 "measurands" (combined individual compounds and homologous groups) requested by Environment Canada.

Table 1: Compounds/groups that do not meet the strict definitions of "PAH" or "alkylated-PAH"

Compound/Group	Comments
Biphenyl (plus alkyl-substituted Biphenyls)	Not really a PAH, as there are no fused rings. However, it is a common component of coal tar, and is therefore found with PAHs. They are on the AXYS analytical list.
Various alkyl substituted PAHs, also termed "alkyl-PAH Homologs"	While these type compounds do meet the "alkyl-PAH" definition, these are not analyzed as individual compounds, but as compound groupings. Each group can contain dozens of compounds, and there can be any number of different groupings possible. (No single laboratory analyzes for all possible alkyl-PAH groupings.) The AXYS Laboratory Analytical List does include an intermediate number of alkylated PAH groups, more than some laboratories, less than others. API/AFPM does not believe these groups should be included, because the quantitative analysis of the PAH homologs in aqueous samples in the 2015 Environment Canada Inter-laboratory Study was almost a complete failure (as described later in this report).
Dibenzothiophene, (plus alkyl-substituted DBTs)	This is a heterocycle (a sulfur atom in the middle ring), and therefore not a PAH. However, it is considered to be chemically similar to anthracene, and is frequently detected in heavy oil fractions. They are on the AXYS analytical list.
Dibenzofuran, other oxygen heterocycles	These are listed in the paper source below[1], and dibenzofuran is included in the alkyl-PAH listing for several laboratories, but these are not PAHs, since they contain oxygen in at least one of the fused rings. The AXYS list does not include dibenzofuran or any other oxygen heterocyclic compounds.
Nitro-pyrene, other nitro-substituted compounds	Some papers list these, and the Minnesota Pollution Control Board (MPCB) incorporates them into their "extended PAH" list. Nitro-substituted compounds have their own chemistry (explosives). These also can be groups of compounds. These are not included on the AXYS analytical list.

Nitrogen heterocycles such as Carbazole, dibenzocarbazole, dibenzoacridines (including groups of alkyl-substitutions)	Minnesota Pollution Control Board (MPCB) incorporates several of these nitrogen heterocyclic compounds into their "extended PAH" list. However, these all contain nitrogen in at least one of the aromatic rings, which greatly alters the chemistry of these compounds. They are polynuclear and aromatic but are not hydrocarbons. These are not included in the AXYS list.

[1]"Time to Say Goodbye to the 16 EPA PAHs? Toward an Up-to-Date Use of PACs for Environmental Purposes" Jan T. Andersson and Christine Achten (2015)

API/AFPM believes it is impractical to analyze samples for all of the possible combinations of compounds and compound groups in all of the above categories. The result would be hundreds of "measurands" (combined single compounds and homologous groups) where the compound groups could each further represent hundreds of additional compounds.

API/AFPM is also opposed to the analysis of alkyl-PAH homologs and any other groups of PAH-like compounds analyzed as a group, because they are not individual compounds, and the 2015 inter-laboratory study clearly indicates that currently they cannot be quantitatively analyzed. This would also apply to other compound groups that may not have been analyzed in the 2015 Inter-laboratory Study. Also, analogous to the argument for naphthenic acids, any toxicity assigned to a mixed group of alkyl-PAH isomers could be dominated by only one or a few compounds that may have unique features that are grouped with a larger number of compounds that have negligible toxicity. It should be noted that for the "traditional 16" PAH compounds, the assigned TWF ranges from 100 for benzo(a)pyrene to 0.008 for acenaphthylene. That is a TWF range of greater than four orders of magnitude. This problem with grouping alkyl-PAHs is discussed further in the portion of this report on the potential danger of assigning TWFs by EPA to analytical results that represent large groups of related compounds.

API/AFPM is not opposed to the analysis of individual non-PAH compounds if EPA can justify that such compounds can be or are often associated with other PAH compounds with similar physical-chemical and toxicological properties and an appropriate, recognized and vetted analytical method can be employed. We note that the AXYS analytical list already includes the analysis of biphenyl and dibenzothiophene as separate compounds. The individual compounds dibenzofuran and carbazole are already commonly included on many laboratory semi-volatile organic analytical lists and will likely be analyzed as independent compounds anyway. As to the other heterocycles, we think EPA should justify the investigation of those compounds, as some of them seem unlikely to be present and are rarely if ever analyzed by most laboratories.

III. Analytical Methods Used for Naphthenic Acids: Analytical Problems and Inter-laboratory Studies

Currently, all environmental laboratories only analyze naphthenic acids either as total naphthenic acids, or as groups of compounds with the general formula $C_nH_{2n+z}O_2$. There are no calibrations

performed that are utilized to quantitate individual compounds, and the type and number of calibration standards prepared for different compound groups varies by the method and laboratory using them. Naphthenic acids (NA) can be analyzed as a single result reported as "total naphthenic acids" using Fourier-transform Infrared Spectroscopy (FTIR, a type of infrared spectrophotometry). Using LC/MS methods, it may be possible to calibrate and analyze for some individual NA compounds, however each group of NA compounds can contain dozens or even hundreds of specific compounds and isomers, making this a daunting task. Laboratories utilizing an LC/MS method often simply report "total naphthenic acids" as the sum of the NA concentrations measured within each NA subgroup that is analyzed by their method.

A. A Brief Description of the AXYS method for analyzing NAs

The AXYS Method is a very complex and ambitious proprietary method for the measurement of naphthenic acids. EPA provided API/AFPM a short summary of this complicated method suitable for public review (MSU-077C, R01, dated February 15, 2018) that describes in general terms the various steps involved. Due to the very recent date assigned, it is not clear whether this exact version of the method was used in either of the inter-laboratory studies (performed in 2012 and 2016) provided by EPA and discussed later in this report. The general procedure is presented in the following.

Aqueous samples can be extracted in the laboratory, or samples can be collected in the field using up to three Polar Organic Chemical Integrative Sampler (POCIS) sampling disks, (which can be used to concentrate samples if desired). Each extract is derivatized with 1-ethyl-3-(3-dimethylaminopropyl) carbodiimide hydrochloride (EDC), to form the corresponding naphthenic acid-EDC derivatives. This means that there is a reaction with the carboxylic group, so that an acid-EDC complex is generated. This step is presumably performed to enhance the solubility, chromatography, and/or mass spectral pattern of the naphthenic acids. Analysis of the extracts is performed by high performance liquid chromatography (HPLC) with triple quadrupole mass spectrometer detection (LC-MS/MS). A fully detailed analysis report using this method would contain values for 60 different analytical groups of naphthenic acids (an amazing amount).

These 60 groups fit the generic formula $C_nH_{2n+z}O_2$, but are restricted as listed in Table 1 of the provided MSU-077C, R01 document (and reproduced later in this report):

- The number of carbon atoms allowed for this NA analysis are only in the range of C12 through C21.
- The carbon chain should not contain aromatic rings.

- The unsaturation factor "z" for the number of hydrogens can only be zero (saturated fatty acid), or negative even integers -2 (unsaturated), -4, -6, -8, -10, or -12 (these last are polyunsaturated). Not every carbon number includes this complete list of "z" values; this serves to limit the number of NA groups to 60 categories. Each category is capable of containing dozens or sometimes hundreds of compounds meeting the same generic formula for the group.

- The AXYS method analysis is supposed to be limited only to parent ions that originally had a single carboxylic acid group (that is the CO_2H element prior to derivatization).

B. Possible issues with the AXYS method for naphthenic acids

We are concerned about several potential problems when this method is applied to actual refinery wastewater.[1] Some of these problems may be left out of the short summary provided, but others might have a major effect on the interpretation of these results, and how they might be used for development of an effluent limitations guideline (ELG). The following bullets identify these issues. They are arranged roughly in order of concern.

1. The method only uses a single calibration curve to quantitate all 60 of the different analytical categories of naphthenic acids, and the calibration uses only a single compound, 1-pyrenebutyric acid (injected at three concentration levels). This particular compound does not even qualify as a naphthenic acid by the scientific definition of that class of compounds, due to the presence of an aromatic PAH group in the side-chain. This type of representative calibration is to our knowledge never employed when the compound itself is not included among the targeted analytes. The inter-laboratory studies discussed below provide little comfort in this area, since those studies are only evaluated on the total naphthenic acid concentration, and not on the 60 different sub-categories included in this method. For the total NA analysis, the AXYS laboratory performed reasonably well (an overall moderately high bias, as did most of the laboratories using some kind of LC/MS method), but for individual categories, the results might be very high or very low. We do not know how much importance EPA might place on individual naphthenic acid categories that have been measured, but if there are great differences in toxicity for these categories, this could be problematic. We realize there are other QC controls, including a Merichem Refined NA Mix that may give reproducible results, however, it appears that the individual compounds contained in this commercial mix are unknown.

[1] Please do not assume that any of the identified problems are a reflection on AXYS Laboratories, which we know is recognized as one of the premier environmental research laboratories in North America. Our concerns are about an experimental method still under development, its possible weaknesses, and how some of the results of this method might potentially be used in the development of a new refinery ELG by EPA.

Table 2. Reproduction of Table 1 in AXYS Method MLA-077: Molecular weights of NA groups that are analyzed with this method

n (C #)	Z # (hydrogen deficiency)						
	0	-2	-4	-6	-8	-10	-12
12	200	198	196	194		--	--
13	214	212	210	208			--
14	228	226	224	222	220		--
15	242	240	238	236	234	232 *	230 *
16	256	254	252	250	248	246	244 *
17	270	268	266	264	262	260	258 *
18	284	282	280	278	276	274	272
19	298	296	294	292	290	288	286
20		310	308	306	304	302	300
21		324	322	320	318	316	314

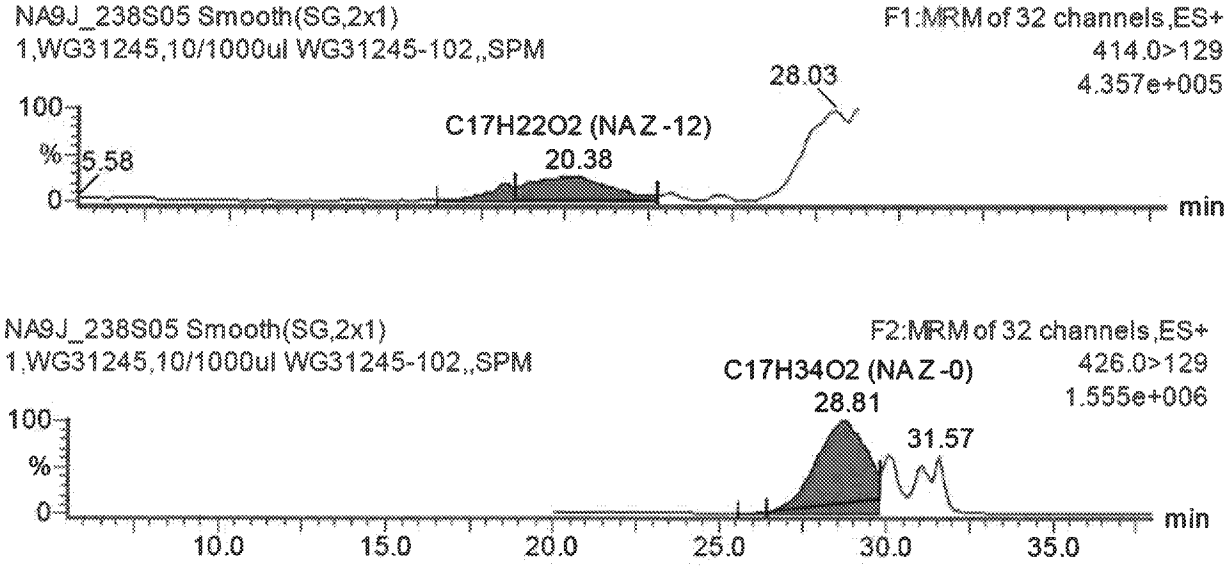
* Compounds that don't fit the strict definition of NA as they contain at least one aromatic ring may be included.

2. Table 2 is a copy of Table 1 from the AXYS Method (page 1 of the MSU-077C summary document. The table shows each of the sixty separate analytical categories of naphthenic acids reported to be analyzed using the AXYS method. Note that four of the 60 NA categories are asterisked, stating that it is possible that some of the compounds within those analytical groups might contain one or more aromatic rings, which do not fit the "strict definition" of a naphthenic acid. This also seems to suggest that the commercial mix "Merichem NA" that the method uses for control samples may also contain some aromatic acid species and possibly some di- or tricarboxylic acids.[2] Because the laboratory states that these aromatic compounds would be included within these categories, this logically seems to mean that the AXYS method cannot recognize whether the observed unsaturation in a particular parent mass spectral ion is caused by double bonds or by an aromatic ring (at least not by the molecular weight of the ion alone). A six-carbon aromatic ring is unsaturated by the equivalent of six hydrogens, so it would have a "z" number of "-6", before it is attached in some manner to the rest of the fatty acid chain, but this could be masked by the "z" factor present in the rest of the carbon chain. If the presence of aromatic rings could be determined by the method, then presumably such compounds could have been subtracted from the results for these analytical groups. This could have significant implications if the toxicological properties of NA's with aromatic rings are significantly different than those of the

[2] Environment Canada has concerns about the representativeness of the Merichem NA mixes compared to oil-sands process-affected water as described later in this report.

aliphatic NA compounds. Furthermore, if the presence of an aromatic ring in the carbon chain of an NA cannot be recognized, how does AXYS know whether there could be other aromatic NAs included within some of the other categories?

3. Ionization efficiency of NAs change with the structure of the compound and the matrix of the sample. This variation in ionization efficiency renders HPLC MS with electrospray ionization problematic for such complex mixtures.
4. On page six of the AXYS method summary, there are a series of seven chromatograms of groups of NAs containing 17 carbons, showing (presumably derivatized) mass values with parent MWs of 414 through 426. Presumably because these peaks are generated by a number of different isomers, the peaks have very broad retention times. Most are greater than five minutes, and all have undulations within each peak. In particular, in the mass 414 chromatogram the peak that crests at 20.38 minutes seems to have its low end retention time (RT) window clipped short due to another peak of the same mass appearing within the original RT window. Also, for mass 426, the peak at 28.81 minutes is clearly significantly influenced by some later peaks of the same mass, and apparently a manual integration was necessary. EPA requires all manual integration to be well documented. A highly experienced analyst can exercise his or her professional judgement on these integration issues (provided there is appropriate documentation), but this has its limits, and may become impossible if the chromatograms become too complex. Below are the chromatograms in question, for MW 414 and MW 426.



5. We do not know whether the chromatograms from page 6 (depicted above) are of a quality control (QC) sample or a real oil sands sample. Nor do we know if a smoothing

function has been used, as suggested by the label, "smooth," and if so, if that practice altered the analytical results. Particularly for untreated refinery wastewater which can be generated from many types of raw crude and be products of differing refinery processes, it is likely that these chromatograms could become far more complex, with substantially more likelihood of uncertainty entering into the analysis. Environment Canada mentioned this as one of their conclusions to the 2016 Inter-laboratory Study they conducted. They stated: "The complexity of the background matrix needs to be increased further. The synthetic toxicity testing matrix is suitable for method validation purposes but future inter-laboratory studies should use a natural water matrix for all samples." Presumably this would also include refinery wastewater matrices for studying refineries. The 2016 Inter-laboratory was focused on oil-sands process-affected water and is not representative of refinery wastewater, either untreated or treated.

6. We note that this AXYS summary does not discuss any QC analytical check on the verification of the completeness of the derivatization efficiency, or address how the derivatization might perform on actual refinery samples, which presumably may contain di- or tri-carboxylic acids. Does the instrument recognize di and tri-carboxylic acids, even if they form fragments that contain only one carboxyl group? Does a fresh reagent fully derivatize all carboxyl groups in any compound? What if only one of the carboxylic groups is successfully derivatized in a di- or tri-carboxylic acid? Could the parent compound, or a potential mass ion fragment of the parent compound, be mistakenly identified as a monocarboxylic acid, and counted as a naphthenic acid? How is it determined whether stored derivatization reagent has become less effective over time? Finally, even if di- and tri-carboxylic acids are not included in the NA quantification when using the AXYS method, they possibly still could be present in acid extractions from samples containing naphthenic acids, which may have implications when performing toxicity studies on these extractions.

C. Inter-laboratory studies of the analysis of naphthenic acids

There were two inter-laboratory studies performed for the naphthenic acids analyses, one in 2012, and a second in 2016. However, the primary focus of both of these studies was the analysis of "total naphthenic acids" and only the total NA values were evaluated as to accuracy and precision among all of the participating laboratories. Triplicate samples were typically provided, and the laboratories reported their individual results as well as the mean of their triplicate analyses. (The mean value reported was the value that was evaluated in most cases.) The samples included reagent water blanks, spikes generated from Merichem naphthenic acid reference material, and other samples were of oil sands process-affected waters (OSPW). There were two main categories of analyses for total NA. An FTIR Method that can only give results as total naphthenic acids was used by many of the laboratories. There were a variety of LC/MS and LC/MS-MS methods also used by several laboratories. While these methods can achieve varying degrees of speciation

depending on the method, they also can be used to obtain a total NA value by summing up the values from all of the measured subcategories of NAs. Environment Canada evaluated the score for these laboratories only using the total naphthenic acid results since the degree and type of speciation varied greatly among the different laboratories and was evidently not comparable.

The 2012 Environment Canada Naphthenic Acids Inter-laboratory (ECNAIL) study found that some of the laboratories using both FTIR and some of the LC/MS methods could reasonably reproduce total naphthenic acid results. There was some speciation information displayed in Appendix A of the 2012 study from the various GC/MS, LC/MS, and LC/MS-MS methods, however the speciation was limited to different degrees of saturation (the "z" factor, even numbers zero through twelve, forming seven speciation categories). These categories did not differentiate based on the number of carbon atoms. The 2012 report concludes regarding speciation of the NA compounds: "The data demonstrated the capability of certain methodologies to characterize NA by carbon number as a percentage of the Total $C_nH_{2n+Z}O_2$ species, however, complexity of the speciation data made comparative evaluation impractical."

The 2016 ECNAIL study report was smaller, involving only nine laboratories, but it did not address potential speciation of the NAs. Four of the nine laboratories used an FTIR method. Five of the nine laboratories used some variant of LC/MS or LC/MS-MS methods, but it is unknown whether any of these methods were identical to one-another. On average, the FTIR methods were biased low at 78% of the target values on average, with every FTIR laboratory having a negative bias. The LC/MS labs were biased somewhat high, on average 108% recovery, but the range of biases by laboratory was -19% on up to +40% (that is, the average percent recovery by laboratories performing an LC/MS method ranged from 81% to 140%). The OSPW samples had on average lower recovery by all methods, averaging 67% recovery, while the Merichem NA standard reference material had on average 113% recovery by all methods. These values demonstrated that for "total naphthenic acids" these analyses in general were reasonably quantitative among the different laboratories, but there were some significant differences depending on the sources of the reference materials.

The AXYS laboratory participated in both the 2012 and 2016 study. In both studies, they tended to be biased somewhat high for total NA (approximately +20% of the target values on samples with NA values greater than 1 mg/L), and they were approximately in the middle of the ranges for laboratories using one of the LC/MS or LC/MS-MS methods. Their in-lab precision was good, and they had no outlier results from either study.

The conclusions from the 2016 study (pages 18 and 19) contain some interesting comments that are reported below, roughly in order of importance:

- Environment Canada states in conclusion number 7: "The current definition of Total Naphthenic Acids ($C_nH_{2n+z}O_2$) as used in this study needs to be broadened to include aromatic

O2 species." API/AFPM does not agree with this conclusion, as described in Section VI of this report.

- Conclusion number 3 states: "The correlation coefficient for all laboratories is >0.96 for all laboratories indicating that main factor in any laboratory imprecision is a bias of some kind as opposed to some random errors or blunders in the laboratory." API/AFPM agree with this conclusion. Among the items that likely creates an inherent bias is trying to use a single calibration material to quantitate mixtures of compounds that can differ significantly in their overall makeup from site to site. It should be noted the calibration ranges were different across all of the methods in the interlaboratory study, with some being outside of the measured analyte range. This practice results in an inherent bias in the study.

- Conclusion number 6: "There is a need to establish a traceable quantification standard to achieve consistent analytical results. Merichem® is a commercially available mixture of naphthenic acids that allowed for an inter-laboratory comparison of laboratories' abilities to measure Total NA. It is currently the best available representation of the Total Naphthenic Acids ($C_nH_{2n+z}O_2$) which are reported in this study. However, it needs to be replaced with a commercially available, traceable material (single component or mixture) that better represents the NA components found in relevant matrices of the Athabasca oil sands region (e.g. OSPW)." This is also an important issue for API/AFPM. The assay information on these Merichem NA mixtures (from Appendix A of the 2016 study) indicates only that they are 95-99% naphthenic acids, and 1-5% petroleum distillates. It has a total acid number of 191 (with an acceptance range of 170-210). There is no information whatsoever as to specific quantities of which categories of naphthenic acids are included in this material, and it is not a traceable standard.

- Conclusion number 10 also discusses reference materials: "An OSPW derived reference material is required that can be used to compare without bias the various methods being used for NA analysis." API/AFPM is very concerned about this. Does this mean that each site or each refinery might need its own reference material for calibrations?

- Conclusion number 1 from the 2016 study discusses how the results from this study are significantly improved over much poorer results that were obtained from a 2014 inter-laboratory study for naphthenic acids, where the overall RSD values for the samples varied from 64% to 168%, with only the three highest samples having RSDs below 100%. (API/AFPM believes that if these RSD results are correct, this constitutes unacceptable method performance.) **This 2014 naphthenic acid study was not included in the information given to API/AFPM.**

- Conclusion number 8: "The complexity of the background matrix needs to be increased further. The synthetic toxicity testing matrix is suitable for method validation purposes but future inter-laboratory studies should use a natural water matrix for all samples." API/AFPM agrees that this is needed, and has stated that actual refinery samples, especially untreated wastewater samples, can greatly complicate the analytical process for many well-established methods let alone these AXYS experimental procedures currently being developed.

IV. Discussion of Analytical Methods for Alkylated PAH Compounds and the 2015 Environment Canada Inter-laboratory Study

A. Overview of methodology

The analytical list for "alkylated PAHs usually includes the 16 standard EPA priority pollutant PAHs, "extended PAHs" (meaning additional single-compound PAHs or PAH-associated compounds), and alkylated PAHs, which are analyzed as individual groups of alkyl-substituted PAH homologs. Most laboratories use a GC/MS instrument as is used in EPA SW-846 Method 8270D.[3] Many labs operate the MS in a selective ion monitoring (SIM) mode to obtain greater sensitivity, with the possible drawback being they do not obtain a full mass spectrum of each compound. The SGS-AXYS Laboratory Method MSU-21C uses their MS operating in an Electron-Impact Ionization (EI) mode using Multiple Ion Detection (MID). We are not currently familiar with the advantages/disadvantages inherent to this type of MS setting. The main point here is that the methods used by the participating laboratories in the 2015 study discussed in Section B below, though similar in instrumentation, may not be exactly the same. In Section I of this report, we have also discussed that there is ongoing debate within the analytical community as to which extended PAH compounds and alkylated PAH homologs should routinely be included in the parameter list for this determination.

B. 2015 environment Canada inter-laboratory study shows major problems in quantifying the groups of PAH homologs

Environment Canada performed an Inter-laboratory Study for Alkylated PAH compounds, the report of which is dated April, 2015. API/AFPM received a copy of this report from EPA. Three sample matrices were tested (with four samples provided for each matrix): extract samples consisting of three different diluted oils, one National Institute of Standards and Technology (NIST) standard in methylene chloride, and synthetic soils samples spiked with three different oil sources. Four samples were provided for each matrix. Our primary concern here is on the four aqueous samples, but we also include a comparative discussion on the analyses of the extract that is spiked with the NIST certified mixture.

The results for the aqueous samples in this inter-laboratory study paint a completely different picture of two types of PAH analyses (see Table 3 below, which is a compilation of the aqueous results from Tables 3 and 4 on pages 10 and 11 from the 2015 Environment Canada Inter-laboratory study on Alkylated PAH analyses). As expected, all of the laboratories analyzed the parent PAHs (all single compounds, each with their own calibration curves) and achieved

[3] EPA, *Test Method for Evaluating Solid Waste: Physical-Chemical Methods Compendium (SW-846)*, Office of Land and Emergency Management, Washington, D.C.

acceptable Relative Target Standard Deviations (RTSD), with the average values being between 20 and 25% RTSD.[4] The parent PAH data for water and the other matrices is presented in Table 3 on page 9 of the Environment Canada Report.

However, for the PAH homolog analyses (found in Table 4 on page 11 of the Environment Canada report), the results of the RTSDs are shockingly different, and API/AFPM considers them unacceptable. (It is important to remember that the alkylated PAH homologs are actually groups of related PAH compounds, where the calibration is based only on a single compound intended to represent the entire group.) The average RTSD for the four water samples is almost 80%, an extremely high value, and some of the RTSDs for some homolog compound groups were over 100%. Typically, in these type studies, results outside of two standard deviations are given a warning, but are still considered acceptable, and results outside of three standard deviations are considered as unacceptable. To illustrate how terrible an RTSD of 80% is (which represents only a single standard deviation around the target value), consider a spiked sample with a value of 1,000 µg/L for a particular PAH homolog group. If a result within +/- 3 std. deviations is acceptable, then in this case (using an 80% RTSD for one standard deviation, multiplied by 3 SDs), any result between the values of 0 (or non-detected) up to 3,400 µg/L would be considered an acceptable result. It is difficult to rate such results as even "semi-quantitative", because many "acceptable" results would not even be within the same order of magnitude of the true value (1,000 µg/L). It is clear that the analytical method proposed for the PAH homolog groups does not "quantitate" these compounds within any acceptable definition of quantitation. Therefore, this analytical method is unacceptable for evaluating the concentrations of such compounds in refinery wastewater.

In the Table 3 below, API/AFPM compares the average percent RTSD for the parent PAHs in the four aqueous samples with the average RTSD for the PAH homologs in these same four samples. We find that for the water samples alone, the RTSD average for the PAH homologs is actually 3.41 times higher than for the parent PAH compounds. This is significantly worse than the discussions within the Environment Canada report, which estimated that overall, the RTSD for the homologs was 2.5 to 3 times higher than the RTSD for the parent compounds. This seems to suggest that the problems analyzing aqueous samples for these parameters is significantly greater than for soils or extracts. Again, API/AFPM asserts that this performance cannot be considered as quantification of these compound/compound groups in water samples.

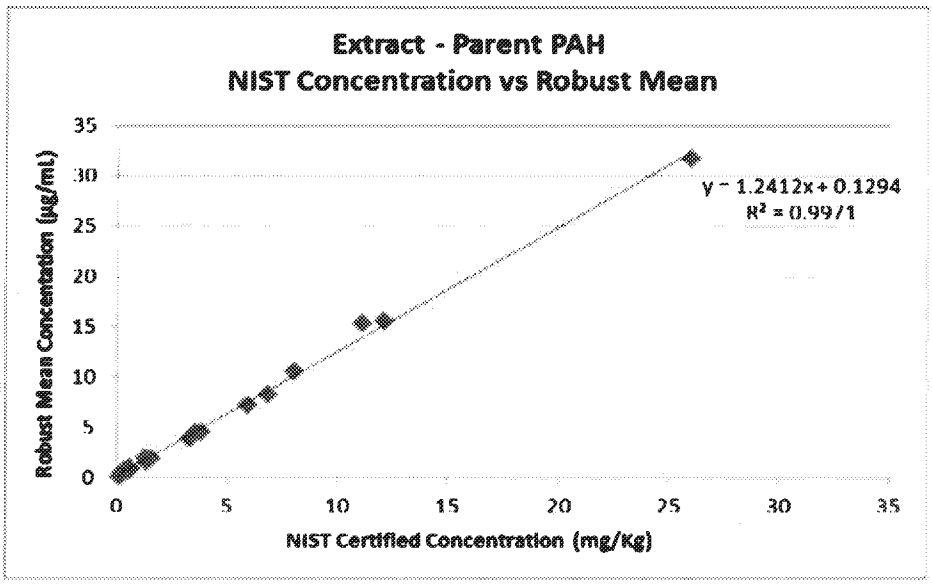
[4] An RTSD is the RSD around a known target value, instead of the mean of the reported results.

Table 3: Extracts of the Aqueous Analyses RTSDs data for alkyl-PAH Homologs (originally from Table 4 in the 2015 alkyl-PAH Inter-laboratory Study) and a summary of the average RTSDs from the aqueous analyses for the parent PAH compounds (calculated from Table 3 of 2015 report)

Aqueous samples Relative Target Standard Deviation% for PAH Homologs analyzed in Environment Canada 2015 Inter-lab Study				
Aqueous Sample Number	AAP-01	AAP-02	AAP-03	AAP-04
C1-Naphthalene	71	46	30	40
C2- Naphthalene	123	59	57	64
C3- Naphthalene	120	77	68	60
C4- Naphthalene	106	83	77	68
C1-Fluorene	91	76	66	60
C2-Fluorene	66	65	63	40
C3-Fluorene	100	95	86	91
C4-Fluorene	105	215	217	126
C1-Phenanthrene	55	45	44	29
C2- Phenanthrene	45	52	49	41
C3- Phenanthrene	80	77	79	81
C4- Phenanthrene	108	129	109	108
C1-Fluoranthene	91	76	66	60
C2- Fluoranthene	93	84	74	100
C3- Fluoranthene	68	50	57	68
C4- Fluoranthene	128	132	121	103
C1-Chrysene	27	29	31	34
C2- Chrysene	102	76	94	88
C3- Chrysene	96	96	98	81
C4- Chrysene	178	184	187	129
C1-Benzopyrene	73	78	78	78
C2-Benzopyrene	63	78	100	62
C1-Dibenzothiophene	54	42	42	42
C2-Dibenzothiophene	51	52	40	45
C3-Dibenzothiophene	83	55	57	66
C4-Dibenzothiophene	53	44	62	69
Average RTSD per sample for PAH homologs	85.77	80.58	78.92	70.50
Average RTSD per Aqueous sample for 18 parent PAH compounds	22.5	23.9	21.6	25.11
Overall RTSD Ratio Homolog over parent PAHs per sample	3.81	3.37	3.65	2.81
Average of all four ratios				3.41

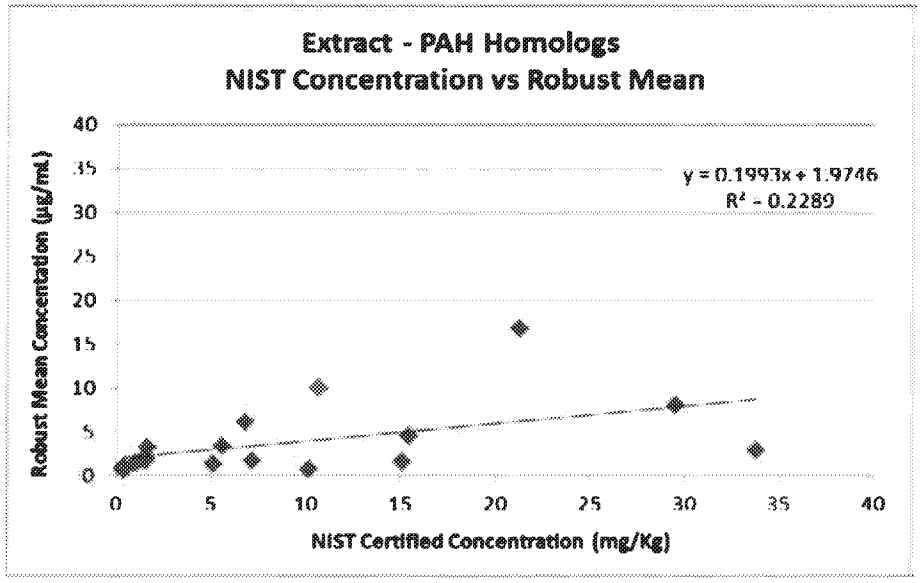
Another indication of problems related to the analysis of the PAH homologs can be seen in the extract sample that was spiked with the NIST standard. Here, any errors or biases due to sample extraction have been eliminated, and all of the values for the parent PAHs and their PAH homologs are certified. There are graphs of the analytical results of this sample on page 13 of the Environment Canada 2015 report, and two of these are shown below. It should be noted that these graphs are based on the "robust mean" and "robust standard deviation" of the data for this sample. "Robust" is defined as a statistical program that reduces the influence of any outlier results on the calculation of the "robust mean" and "robust SD" (without totally eliminating the outlying data points), so that these calculations are not unduly influenced by such outliers. Therefore, these graphs already contain a degree of correction for the worst outlier results.

The first graph (below) is for the results of the parent PAH compounds in the NIST sample extract:



As can be seen, the correlation coefficient of the parent PAH compounds versus the robust mean of the NIST extract sample is satisfactory ($R^2 = 1.0000$ is perfect correlation).

This second graph is for the PAH homologs:



The correlation coefficient of the PAH homolog compounds vs. the robust mean is only 0.2289. This is extremely poor, especially for a sample that is a simple dilution of an NIST standard that did not have to be extracted. The evidence is clear that there are severe problems with the calibrations being used for the PAH homologs.

C. Summary of Conclusions Discussed in the 2015 Environment Canada Inter-laboratory Study for PAH and PAH homolog analysis

The Environment Canada conclusions show they are aware of the issues with the quantification of the PAH homologs. They first state that the results of the analyses of the parent PAH compounds were not unexpected. They stated that most of these compounds have been routinely analyzed by most environmental labs since the 1980's, and that percent RSD's of 20 to 25% are typical for these compounds.

The following is the Environment Canada assessment of the PAH homolog analysis in the conclusion to the 2015 report:

"The results for the analysis of the alkyl-PAH homologs are consistent with an analytical method that relies on only a few select compounds to represent an entire class. The quantitation of the homologs is generally done using a single compound to represent the entire class of alkyl-PAH being quantitated instead of individual compounds and this could be responsible for the increase in relative target standard deviations observed. This would be especially true if all of the compounds in a class do not exhibit the same response factors. A number of homologs in the solid samples were also too low in concentration to be accurately quantitated or even detected in some cases. This included the NIST SRM (1941b). A lack of traceable individual calibration standards for homologs may also play a part in the apparent low recoveries of the homologs as could some unfamiliarity with the practical application of some elements of the recently promulgated ASTM

D7363-11, *Standard Test Method for Determination of Parent and Alkyl Polycyclic Aromatics in Sediment Pore Water Using Solid-Phase Microextraction and Gas Chromatography/Mass Spectrometry in Selected Ion Monitoring Mode*."

API/AFPM believes that based on the results of this study, Environment Canada has greatly understated the problems observed in the aqueous analyses, especially when they state: "The quantitation of the homologs is generally done using a single compound to represent the entire class of alkyl-PAH being quantitated instead of individual compounds and this could be responsible for the increase in relative target standard deviations observed. This would be especially true if all of the compounds in a class do not exhibit the same response factors." We also note that the problems with the aqueous samples were for all four samples, not simply the low concentration results.

Environment Canada also states that this first study may have been too ambitious and possibly included too many compounds and homologs for analysis:

"This first assessment of the current state of the PAH and alkyl-PAH analysis of environmental samples was rather ambitious. Over 100 separate measurands were asked to be reported in 3 separate matrices. Future studies will focus on a target list more closely approximating the one found in ASTM D7363-11."

API/AFPM believes that the analyses of so many types of alkylated PAHs is far too complex and that methods for measuring groups of alkylated PAHs are nowhere near sufficiently developed for any EPA study of refinery wastewaters, or any follow-up rulemaking effort.

V. Concerns About Blanket Toxicity Assessments of Groups and Categories of Compounds

A. Brief Background

In the EPA ELG process, the pollutants estimated to be removed by a proposed rule have been given a toxic weighting factor (TWF) based on toxicological tests having been performed in the past on that specific pollutant. The calculated TWF for each pollutant is actually the sum of an aquatic life toxicity value, and a human health toxicity value that are both normalized to the TWF of copper.[5] The TWF formula for pollutants in water is:

$$TWF = (5.6/AQ_{value}) + (5.6/HH_{value})$$

Where:

[5] Copper as a reference toxicant was selected by EPA years ago because its toxicity was about in the middle of pollutants being tested at the time.

5.6 (μg/L) = acute aquatic toxicity of copper at a specified hardness that is used as the scaling factor to normalize the TWF in relation to copper

AQ = Aquatic Life Value (μg/L). This is determined experimentally through toxicity testing on aquatic organisms.

HH = Human Health Value (μg/L). A few pollutants have acute human toxicity, but most times the HH factor is based on potential carcinogenic properties of the compound.

Except in rare cases, the TWF is dominated by either the AQ value, indicating toxicity to aquatic life is the predominant effect, or the HH value if there is a significant human health risk. While there are rare exceptions due to acutely toxic properties of specific compounds or potential unusual human exposure pathways—for trace organic compound contamination in water, the HH value is typically not going to be significant to the TWF calculation unless that compound is demonstrated to have potential or confirmed carcinogenic properties.

As example of this, consider the sixteen PAH compounds currently on the EPA priority pollutant list. Seven of these compounds have been identified as potentially carcinogenic through the aqueous-fish-shellfish exposure pathway, and these seven have by far the highest TWFs of the sixteen compounds. Benzo(a)pyrene is the highest of the seven with a TWF of 100, and the lowest two are benzo(b) and benzo(k) fluoranthene, both with a TWF of 30.66. Of the nine considered to be "non-carcinogenic" PAHs, the highest is fluoranthene, with a TWF of 1.27.[6] The lowest TWF of the nine "non-carcinogenic" PAHs is acenaphthylene, with a TWF of 0.0084. This compound was found to have "no observed effect" on mice, and has no HH value, so this TWF is totally based on aquatic life impacts. Note that the acenaphthylene TWF is more than 10,000 times lower than that of benzo(a)pyrene. It is an indication that if an individual compound is not carcinogenic, a TWF based entirely on aquatic life toxicity may be thousands of times lower.

B. Relating TWF factors to mixed groups of compounds, and testing for toxicity

Because the discussion above is applicable to assigning TWFs to categories of mixed compounds, it creates significant problems. Carcinogenic effects are applicable to only specific compounds because the carcinogenic interaction is produced at the molecular level, at specific sites of the molecules that mimic critical enzymes. The addition of a methyl group to a critical area of a molecule may create a stearic hindrance that may completely prevent this molecular interaction. This is why, even among the 16 PAH priority pollutant compounds that are very similar in structure some have been found to be carcinogenic and others show no carcinogenic effect whatsoever.

Each analytical group of naphthenic acids can be mixtures of dozens or hundreds of different compounds, and the total naphthenic acids can consist of thousands of compounds. The only

[6] Though fluoranthene is not classified as a class 3 carcinogen to humans as are the other seven, one study has found it to possess carcinogenic properties to newborn mice, so it still retains a HH value.

common denominator among these compounds is that they contain a single carboxylic acid group, and the attached carbon chains must be aliphatic, (but even this is being questioned by Environment Canada). As we have previously stated, most of *aliphatic* NAs (in the C12 to C21 carbon range), that meet the strict definition of NAs as used by the AXYS are naturally occurring aliphatic saturated or polyunsaturated fatty acids that are commonly found in foods and dairy products, and these compounds should not be toxic.

Some papers have discussed how oil-sands process-affected water contains numerous organic compounds, including naphthenic acids (NAs), and a few papers have asserted NAs as a source of acute toxicity in oil-sands process-affected water. Total NAs, however, defy generic characterization and the toxicity of "NAs" cannot be meaningfully expressed as though NAs constituted a single compound or a consistent, reproducible mixture of compounds. To quote one scientific review on naphthenic acids[7]: "The field continues to be challenged by the lack of a cost-effective, accurate analytical technique for NAs or an understanding of all the organic constituents in process-affected water that may be contributing to observed toxicity and thus requiring treatment."

As discussed in this report, even possibly the most specific analyses for NAs such as the method used by AXYS laboratories can still include other types of compounds that do not meet the definition of naphthenic acids. Just as in the example for PAH compounds discussed earlier, it is entirely possible for only a very few compounds to be the drivers for most or all of the apparent toxicity when addressing a situation of a mixture of hundreds or thousands of compounds. Also, it is unknown, and unlikely, that the naphthenic acids that remain in refinery wastewater after treatment contain the same toxic compounds/mixes that appear to be present in oil-sands process water.

The fact that the analytical method measures total NAs makes the toxicological testing of these naphthenic acid mixes (and also mixes of PAH homologs) a very difficult and inexact procedure. There must be some kind of reference chemical available commercially that is used to perform the toxicity testing. If the toxicity is due to only a few highly toxic compounds present in a mostly non-toxic mixture and one does not know which compounds they are, whether they are present in every mix, or whether they are present in some mixes from some sources and not others, how can a TWF for the mixture be estimated? Are they present in only some wastewaters that contain naphthenic acids and not others? Regulation of total NAs on this basis will invariably result in false positives prompting exceedance violations for dischargers presenting no significant increase to environmental toxicity. These issues are why toxicity testing has (mostly) been limited to testing one pure individual compound at a time, to increase the likelihood that consistent and reproducible results can be obtained when using the same standard reference material.

[7] Oil Sands Naphthenic Acids: A Review of Properties, Measurement, and Treatment, Brown and Ulrich, 2015

There are some very serious shortcomings to the current commercially available consensus reference material used by AXYS, which is the Merichem NA mixture. This mixture was used as a standard reference for the NA comparative studies, and AXYS Laboratory also uses Merichem mixtures as their quality assurance (QA) samples for their proprietary naphthenic acid test method. This Merichem reference material apparently contains relatively consistent proportions of the 60 naphthenic acid subcategories analyzed by AXYS, so it can be used as a QC sample to verify consistent results in their analyses over time. However, the exact makeup of the various specific compounds is unknown, and these samples only demonstrate that the unknown can be reproduced consistently. The summary API/AFPM received of the AXYS method indicates that the laboratory appears to believe some of the fractions found in the commercial Merichem NA mixture do contain some aromatic naphthenic acids. It is possible that some of these aromatic acids could have much higher toxicity than the normal aliphatic NAs. Our impression is that the AXYS method cannot quantify the aromatic NAs separately, otherwise they could be subtracted out of the total. Finally, Environment Canada, in their conclusion to the 2016 NA Inter-laboratory Study stated: "There is a need to establish a traceable quantification standard to achieve consistent analytical results. Merichem® is a commercially available mixture of naphthenic acids that allowed for an inter-laboratory comparison of laboratories' abilities to measure Total NA. It is currently the best available representation of the Total Naphthenic Acids ($C_nH_{2n+z}O_2$) which are reported in this study. However it needs to be replaced with a commercially available, traceable material (single component or mixture) that better represents the NA components found in relevant matrices of the Athabasca oil sands region (e.g. OSPW)." (Important to note: Environment Canada here appears to be asking for a reference material that is representative of a single site. Does this mean that each site and each refinery should obtain a mix that matches their site alone?)

C. Summary of the Main Issues for determining toxicity for Naphthenic Acids (also generally applicable to alkylated PAH homologs)

The following bullet items are just a few of the complex issues that must be dealt with, if one is to apply a single TWF to large groups of compounds such as naphthenic acids or alkylated PAH homologs:

- These NA or alkylated PAH homologs mixtures can contain hundreds of compounds, and if present, it is very likely that only a tiny fraction of these compounds may have a high TWF but this fraction might drive the overall toxicity of the entire group. These few toxic compounds have likely not yet been identified, but they may be present in samples from one source, and not present in another, with dramatic effect on the future evaluation of the TWF.

- Performing the tests to determine toxicity: As stated by analysts and Environment Canada, there is not yet available a commercial material that is traceable quantitatively, where all the components are identified. If individual lot numbers of this commercial material are used as **a standard to determine toxicity**, it appears they face the same problem—do certain lots of the mix contain fewer or more of the limited number of compounds that can drive the toxicity,

and is the mix representative of the types of naphthenic acids present at various facilities? How do you prepare a mix to certain toxicity specifications, if you do not know what compounds are present in the wastewater that can create the most toxicity?

- In the case of determining the toxic-weighted pound equivalents (TWPE)[8] for a refinery effluent, the standard mix used to determine a TWF for NAs needs to be toxicologically representative of the naphthenic acids present in the discharge from a refinery after biological and other treatment. This is likely to be very different than the mix of naphthenic acids present in untreated refinery wastewater, and even further different than oil sands process water used to mine the oil.

- Environment Canada believes that aromatic-naphthenic acids (this term is seemingly self-contradictory, since the word "naphthenic" is used to define mixtures of organic fluids that are low in aromatic content) should be included in the analysis of NAs. If, as might be the case, the aromatic NAs have significantly different toxicological/environmental properties than the currently defined aliphatic NAs, then what is the justification for including them in the same category? Perhaps a separate definition and scientifically defensible analytical procedure should be devised that can analyze for aromatic NA's only.

[8] The TWPE is used by EPA to estimate the total mass loadings of all toxic pollutants in a specific industrial effluent category for the purposes of comparing industrial point source categories for their relative contribution ot surface water discharges of toxic pollutants.

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Homeland Security

Department of Homeland Security Office of Policy
www.dhs.gov/secure-drivers-licenses

Message

From: Nolan, Rich [RNolan@nma.org]
Sent: 8/10/2018 8:13:54 PM
To: Ross, David P [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=119cd8b52dd14305a84863124ad6d8a6-Ross, David]
CC: Penman, Crystal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=93662678a6fd4d4695c3df22cd95935a-Penman, Crystal]
Subject: Mining Board Meeting Invitation - Sept. 13.
Attachments: Invitation to Asst. Admin Ross -- 2018 NMA Fall Board Meeting.pdf

Dear David, Ryan J. thought you may able to help us out on Sept. 13 in Andrew's place.
Many thanks for your consideration, we look forward to hearing back and working with you.
Rich

Rich Nolan
Senior Vice President, Government and Political Affairs
National Mining Association
101 Constitution Ave. NW, Suite 600 East
Washington, D C. 20001
Phone: (202) 463-2600
Direct: Ex. 6
rnolan@nma.org

HAL QUINN
President & CEO

August 10, 2018

The Honorable Dave Ross
Assistant Administrator for Water
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Assistant Administrator Ross:

As a follow-up to our invitation to Acting Administrator Wheeler to address our Board of Directors, the National Mining Association (NMA) cordially invites you to address the fall 2018 meeting of our board of directors, scheduled for Sept.13-14 at the Mandarin Oriental Hotel in Washington, D.C. NMA's board of directors is comprised of CEOs from the major U.S producers of coal, metal and minerals, as well as the manufacturers of mining equipment and technology.

Your administration recognizes that domestic mining is a key part of a vibrant U.S. economy—providing the raw materials and affordable energy required for a growing manufacturing sector, rebuilding our infrastructure and creating middle class jobs.

We thank you in advance for your consideration and hope your schedule will permit you to give remarks along with Assistant Administrator Bill Wehrum on Thursday, Sept. 13, during the morning General Session.

Please advise if there is anything that NMA can do to assist you and your staff to make the appropriate arrangements by contacting Rich Nolan, Senior Vice President of Government Affairs, at Ex. 6 or rnolan@nma.org.

Sincerely,

Hal Quinn

National Mining Association 101 Constitution Avenue, NW | Suite 500 East | Washington, DC 20001 | (202) 463-2600

Message

From: Bond, Alexander [ABond@eei.org]
Sent: 5/22/2018 2:32:42 PM
To: Leopold, Matt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4e5cdf09a3924dada6d322c6794cc4fa-Leopold, Ma]; Ross, David P [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=119cd8b52dd14305a84863124ad6d8a6-Ross, David]
CC: Shea, Quin [QShea@eei.org]; Fisher, Emily [EFisher@eei.org]; Mohammed, Riaz [rmohammed@eei.org]; 'David Chung - Crowell & Moring (dchung@crowell.com)' [dchung@crowell.com]; Veney, Carla [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c354b58bf2b1464d8afac7bbd2a7a88c-CVeney]; Penman, Crystal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=93662678a6fd4d4695c3df22cd95935a-Penman, Crystal]
Subject: EEI Comments on Clean Water Act Coverage of 'Discharges of Pollutants' via a Direct Hydrologic Connection to Surface Water
Attachments: EEIGroundwaterCommentsFINAL_052118.pdf

David & Matt –

Please find EEI's comments on the Agency's request for input on whether pollutant discharges from point sources that reach jurisdictional surface waters via groundwater or other subsurface flow that has a direct hydrologic connection to the jurisdictional surface water may be subject to CWA regulation attached here, FYI. We would love to come in and discuss a) our comments and b) your thinking regarding any possible next steps as soon as is convenient for you both. Would we be able to find a window to meet in early to mid-June?

Thank you!

Alex

--
Alex Bond
Associate General Counsel, Energy & Environment
701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2696
Ex. 6
www.eei.org

Follow EEI on Twitter, Facebook, and YouTube.

Edison Electric
INSTITUTE

Quinlan J. Shea, III
Vice President, Environment

May 21, 2018

Scott Wilson
Office of Wastewater Management
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460

[Submitted electronically via www.regulations.gov]

Dear Mr. Wilson:

The Edison Electric Institute (EEI) appreciates the opportunity to submit these comments on the U.S. Environmental Protection Agency's (EPA or Agency) request for input on the Agency's previous statements regarding the Clean Water Act (CWA or Act) and whether pollutant discharges from point sources that reach jurisdictional surface waters via groundwater or other subsurface flow that has a direct hydrologic connection to the jurisdictional surface water may be subject to CWA regulation. *See Clean Water Act Coverage of 'Discharges of Pollutants' via a Direct Hydrologic Connection to Surface Water*, 83 *Fed. Reg.* 7,126 (Feb. 20, 2018).

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for about 220 million Americans, and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than 7 million jobs in communities across the United States. In addition to our U.S. members, EEI has more than 60 international electric companies, with operations in more than 90 countries, as International Members, and hundreds of industry suppliers and related organizations as Associate Members. EEI's members own and operate electric generating units and other facilities that generate, transmit and distribute electricity to residential, governmental, commercial and industrial customers. EEI's members require many federal, state and local permits—including CWA section 402 permits, known as National Pollutant Discharge Elimination System (NPDES) permits—to site and operate their facilities.

Driven by a number of factors, including customer demands, technology developments, and federal and state regulatory obligations, the electric sector is undergoing a transition of its generating fleet that will continue over the next decade and beyond. Concurrent with this transition, EEI member companies are investing significant amounts of capital—more than 113 billion dollars in 2017 alone—to make the energy grid smarter, cleaner, more dynamic, more flexible and more secure to integrate and deliver to customers a balanced

mix of resources from both central and distributed energy resources. As part of our commitment to this cleaner energy future, EEI and its members are working to develop "smart communities" to provide customers with innovative solutions and bring the benefits of clean energy resources to communities everywhere. This commitment and the industry's infrastructure investments are additionally beneficial in that they provide domestic job opportunities. Safe, reliable, affordable and clean energy powers the economy, promotes national energy independence and enhances the lives of all Americans.

EEI and its members have a substantial interest in the issue presented here, as some members currently are litigating or recently have litigated cases that address whether the NPDES program applies to discharges that migrate through hydrologically connected groundwater to reach waters that are jurisdictional under the CWA. Additionally, EEI members could be the target of future citizen suit litigation seeking to expand NPDES requirements to releases to groundwater, *e.g.*, from coal ash impoundments.

It would be appropriate for EPA to take this opportunity to clarify that the strict, and potentially criminal, liability of the CWA does not apply to groundwater seepage and other diffuse means of pollutant transport. EEI's comments focus on why the CWA's text, structure and legislative history, read together, most reasonably support an interpretation that discharges to jurisdictional surface water via hydrologically connected groundwater are not subject to CWA liability. Accordingly, EPA should promptly adopt this reasonable interpretation through notice-and-comment rulemaking.

If you or your colleagues have any questions about these comments, please contact either Rich Bozek (Ex. 6 or rbozek@eei.org) or Riaz Mohammed (Ex. 6 or rmohammed@eei.org).

Sincerely,

Quinlan J. Shea, III

cc: Hon. Matthew Leopold, EPA General Counsel
Hon. David Ross, Assistant Administrator, EPA Office of Water

COMMENTS OF THE EDISON ELECTRIC INSTITUTE

ON

CLEAN WATER ACT COVERAGE OF "DISCHARGES OF POLLUTANTS"
VIA A DIRECT HYDROLOGIC CONNECTION TO SURFACE WATER,
83 *FED. REG.* 7,126 (FEB. 20, 2018)

DOCKET ID NO. EPA-HQ-OW-2018-0063

May 21, 2018

I. Introduction and Executive Summary.

The Edison Electric Institute (EEI) appreciates the opportunity to submit these comments in response to the U.S. Environmental Protection Agency's (EPA or the Agency) request for comment on the Agency's previous statements regarding whether pollutant discharges from point sources that reach jurisdictional surface waters via groundwater or other subsurface flow that has a direct hydrologic connection to the jurisdictional surface water may be subject to Clean Water Act (CWA or the Act) regulation. *See Clean Water Act Coverage of 'Discharges of Pollutants' via a Direct Hydrologic Connection to Surface Water*, 83 *Fed. Reg.* 7,126 (Feb. 20, 2018).

EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for about 220 million Americans, and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than 7 million jobs in communities across the United States. In addition to our U.S. members, EEI has more than 60 international electric companies, with operations in more than 90 countries, as International Members, and hundreds of industry suppliers and related organizations as Associate Members. EEI's members own and operate electric generating units and other facilities that generate, transmit, and distribute electricity to residential, governmental, commercial, and industrial customers. EEI's members require many federal, state, and local permits—including CWA section 402 permits, known as National Pollutant Discharge Elimination System (NPDES) permits—to site their facilities and to conduct their operations.

Driven by a number of factors—including customer demands, technology developments, and federal and state regulatory obligations—the electric sector is undergoing a transition of its

generating fleet that will continue over the next decade and beyond. Concurrent with this transition, EEI member companies are investing significant amounts of capital—more than 113 billion dollars in 2017 alone—to make the energy grid smarter, cleaner, more dynamic, more flexible, and more secure in order to integrate and deliver a balanced mix of resources from both central and distributed energy resources to customers. As part of a commitment to this cleaner energy future, EEI and our members are working to develop smart communities in order to provide customers with innovative solutions that can improve our communities and support our ability to bring the benefits of clean energy resources to communities everywhere. This commitment and the industry's infrastructure investments are additionally beneficial in that they provide domestic job opportunities. Safe, reliable, affordable and clean energy powers the economy, promotes national energy independence and enhances the lives of all Americans.

EEI and our members have a substantial interest in the issue presented here, as some members currently are litigating or recently have litigated cases that address whether the NPDES program applies to discharges that migrate through hydrologically connected groundwater to reach waters that are jurisdictional under the CWA. Additionally, EEI members could be the target of future citizen suit litigation seeking to expand NPDES requirements to releases to groundwater, *e.g.*, from coal ash impoundments. It is appropriate and necessary for EPA to take this opportunity to clarify that the strict, and potentially criminal, liability of the CWA does not apply to groundwater seepage and other diffuse means of pollutant transport.

Such a rulemaking is critical to providing much-needed legal and regulatory certainty to regulators, the regulated community, and the public and to preserve the careful balance between state and federal authority Congress crafted in the CWA. In particular, EPA should move swiftly

to clarify its previous conflicting statements concerning the scope of the NPDES program and whether the CWA covers releases of pollutants to groundwater that is hydrologically connected to jurisdictional surface waters.[1] EEI's comments focus on why the CWA's text, structure, and legislative history, read together, most reasonably support an interpretation that discharges to jurisdictional surface water via hydrologically connected groundwater are not subject to CWA liability.

Reading the statute as a whole allows EPA to preserve key CWA distinctions between both point source discharges and nonpoint source pollution—and between groundwater and navigable waters—in a manner that preserves the careful balance Congress established in the Act. Further, since such "discharges" are subject to other federal and state regulatory requirements, those requirements act as strong additional evidence that confirm the appropriateness of such an interpretation. Moreover, significant practical considerations weigh in favor of adopting an interpretation of the CWA that the NPDES program does not cover discharges via groundwater. If adopted, the "direct hydrologic connection" theory would leave most individuals and businesses with no real way of knowing whether their conduct requires an NPDES permit, and if so, what the requirements of that permitting program might be. It would be appropriate for the Agency to promptly adopt this reasonable interpretation through notice-and-comment rulemaking.

---

[1] Federal district and appellate courts have conflicting opinions regarding whether the NPDES program should apply to releases to groundwater; these opinions have resulted in a great deal of confusion and uncertainty for EPA, state water quality agencies, the regulated community and the public. These impacts are discussed, *infra*. Numerous entities have noted in the many cases pending in both district courts and courts of appeals that the CWA unambiguously compels the conclusion that the NPDES program does *not* extend to discharges via hydrologically connected groundwater.

II. EPA Should Clarify that the CWA Does Not Require NPDES Permits for Releases of Pollutants via Groundwater.

As EPA's request for comments explains, federal courts have struggled for decades with whether the CWA regulates the release of pollutants from a point source to groundwater, which ultimately reach jurisdictional surface waters via groundwater migration. *See* 83 *Fed. Reg.* at 7,127–28. Those courts have reached conflicting interpretations of the CWA, depending on what aspects of the statute they emphasized and what weight, if any, they gave to certain EPA statements on this issue. Amidst this confusion, at least one thing is clear: EPA has never conducted a rulemaking—or provided guidance— as to whether NPDES permits are required for discharges via hydrologically connected groundwater. Fortunately, EPA now has the opportunity to provide much needed clarity. EPA should definitively conclude that, read as a whole, the text, structure, and history of the CWA support the interpretation that discharges via groundwater migration do not require NPDES permits.

A. The CWA's Text and Structure Support the Conclusion That NPDES Permits Are Not Required for Discharges via Groundwater.

The CWA prohibits "the discharge of a pollutant" except where an enumerated exception applies. 33 U.S.C. § 1311(a). The most prominent exception is for "the discharge of any pollutant" authorized by an NPDES permit. *See id.* § 1342(a)(1). The Act defines "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source." *Id.* § 1362(12). "Point source," in turn, means "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged." *Id.* § 1362(14).

The Act plainly distinguishes between point source discharges and nonpoint source pollution. Nonpoint source pollution is neither defined in the Act nor mentioned anywhere in CWA section 402. By definition, nonpoint source pollution is not subject to NPDES permitting, because a

"discharge of a pollutant" can only occur "from any point source." *See id.* §§ 1342(a)(1), 1362(12); *see also Ecological Rights Found. v. Pac. Gas & Elec. Co.*, 713 F.3d 502 (9th Cir. 2013) ("NPDES permits are required for discharges from any 'point source,' but not for discharges from 'nonpoint sources.'"). Congress instead left it to the states to control nonpoint source pollution under other provisions of the CWA. *See* 33 U.S.C. §§ 1288(b)(2), 1314(f), 1329; *see also Appalachian Power Co. v. Train*, 545 F.2d 1351, 1373 (4th Cir. 1976) ("Congress consciously distinguished between point source and nonpoint source discharges, giving EPA authority under the Act to regulate only the former."). Congress drew this important distinction while expressly recognizing that the states retain primary responsibility over the development and use of land and water resources. *See* 33 U.S.C. § 1251(b).

Just as important as the Act's distinction between point and nonpoint sources is the distinction between "navigable waters" and "ground waters." As noted above, the Act's NPDES program applies only to discharges "to *navigable* waters from any point source." 33 U.S.C. § 1362(12) (emphasis added). There is no mention of "ground waters" in either the definitions of "discharge of a pollutant" or "point source." *See id.* §§ 1362(12), (14). Nor is there any reference to "ground waters" anywhere in CWA section 402. *See id.* § 1342. Like nonpoint source pollution control, Congress left the regulation of groundwater to states. *See Rice v. Harken Expl. Co.*, 250 F.3d 264, 271-72 (5th Cir. 2001) ("Congress was aware that there was a connection between ground and surface waters" but nevertheless decided "to leave the regulation of groundwater to the States.").

Several provisions of the statute indicate that Congress did not intend for discharges via groundwater migration to be subject to NPDES permitting. Congress knew that both point source

discharges and nonpoint source pollution could impact surface water quality, but it nevertheless purposefully decided to address those sources differently, requiring NPDES permits only for point source discharges to navigable waters. Section 301(b) of the CWA illuminates the point by making effluent limitations the principal mechanism in NPDES permits for controlling discharges of pollutants, and effluent limitations are integral to the overall NPDES scheme. *See* 33 U.S.C. § 1311. However, effluent limitations cannot be straightforwardly, practically or evenly applied to discharges into groundwater; by definition, they apply only to discharges "into navigable waters." *Id.* § 1362(11). Thus, if discharges to groundwater were subject to NPDES requirements, the statute would make no sense, because the primary means of controlling pollutants under the NPDES program—the effluent limitation—would not apply to those discharges. EPA must avoid constructions of the statute that lead to such illogical outcomes.

Section 304(f) further illustrates that Congress did not mean for discharges via groundwater migration to be regulated under the NPDES scheme. Section 304 expressly directs EPA to issue "guidelines for identifying and evaluating the nature and extent of nonpoint sources of pollutants" and "processes, procedures, and methods to control pollution" from things like "the disposal of pollutants in wells or in subsurface excavations." 33 U.S.C. § 1314(f); *Nat'l Wildlife Fed'n v. Consumers Power Co.*, 862 F.2d 580, 587 (6th Cir. 1988) (noting that "Congress apparently intended that pollution problems caused by" facilities described in § 1314(f) "are generally to be regulated by means other than the NPDES permit program").

Likewise, in section 208 of the CWA, Congress required states to develop area-wide waste treatment management plans that include "a process to control the disposal of pollutants on land or in subsurface excavations within such area to protect ground and surface water quality." 33

U.S.C. § 1288(b)(2)(K). CWA section 208 and, later, section 319—which empowers the States to improve control of nonpoint sources affecting attainment of applicable water quality standards— "were designated by Congress as methods to keep states accountable for identifying and tracking nonpoint sources of pollution, as well as identifying 'the best management practices and measures' to reduce such pollution." *Or. Nat. Desert Ass'n. v. U.S. Forest Serv.*, 550 F.3d 778, 785 (9th Cir. 2008).

Last, Congress knew exactly how to differentiate between "navigable waters" and "ground waters" in the CWA, which is precisely what it did in sections 102 and 104 of the Act. *See* 33 U.S.C. § 1252(a) (referencing "navigable waters and ground waters"); *id.* § 1254(a)(5) (same). In numerous other parts of the Act, Congress referred to "ground waters" or "underground waters." *E.g.*, *id.* §§ 1256(e)(1), 1274(a)(4), 1282(b)(2), 1291(b), 1314(a)(1)–(2), 1329(b)(2)(A), 1329(h)(5)(D), 1329(i)(1). The omission of either of those terms from the key provisions relevant to the NPDES program, *see* 33 U.S.C. §§ 1342, 1362(12), (14), is strong contextual evidence that Congress did not intend for pollutants released via groundwater migration to be subject to the NPDES program.

In examining the statute as a whole, EPA must take care to preserve the Act's distinction between point and nonpoint sources, which is an "organizational paradigm of the [CWA]." *Or. Nat. Desert Ass'n.*, 550 F.3d at 780. EPA also should focus on the Act's distinction between navigable waters and ground waters. The obvious way to do so is for EPA to focus on *how* pollutants reach *navigable* waters.

B. Numerous Courts Have Held Conflicting Interpretations Regarding the Applicability of the NPDES Permit Program.

It bears emphasizing that the Supreme Court has never squarely addressed this issue. Contrary to what some citizen groups have argued in recent cases, the plurality in *Rapanos v. United States*, 547 U.S. 715 (2006), did *not* hold that the CWA unambiguously requires NPDES permits for indirect discharges that reach jurisdictional waters diffusely. Far from it. The *Rapanos* plurality's discussion of indirect discharges to "waters of the United States" (WOTUS) was on its face *dictum* that did not "decide th[e] issue." *Id.* at 743. Moreover, that opinion simply recounted how some courts have held that pollutants that originate from point sources are subject to the NPDES program even if they pass through intervening tunnels, culverts, storm drains, sewer pipes, and channels—features that are themselves point sources. Thus, the Court cited *United States v. Velsicol Chemical Corp.*, 438 F. Supp. 945, 946–47 (W.D. Tenn. 1976), a case where the alleged point source and the covered navigable waters were separated by an intervening structure—a municipal sewer system. The *Rapanos* plurality also cited *Sierra Club v. El Paso Gold Mines, Inc.*, 421 F.3d 1133, 1137, 1141 (10th Cir. 2005), a case where a long tunnel separated the point source and the navigable waters. In *Velsicol* and *El Paso Gold Mines*, the pollutants that originated from a point source ultimately reached jurisdictional waters through other features that also fit the definition of "point source." Those sorts of discharges are readily distinguishable from discharges from point sources that only reach jurisdictional waters by diffuse movement. Read in context, therefore, the plurality's statement about the Act forbidding the "addition … to navigable waters" and not "addition … directly to navigable waters" is best understood as explaining that the point source that originated the pollutants need not discharge directly to navigable waters if the pollutants pass through another point source in the interim. The context of the Court's statement is clear;

> In fact, many courts have held that such upstream, intermittently flowing channels themselves constitute "point sources" under the Act. The definition of "point source" includes "any pipe, ditch, channel, tunnel,

> conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). We have held that the Act "makes plain that a point source need not be the original source of the pollutant; it need only convey the pollutant to 'navigable waters.'" *South Fla. Water Management Dist. v. Miccosukee Tribe,* 541 U.S. 95, 105, 124 S.Ct. 1537, 158 L.Ed.2d 264 (2004).

See 547 U.S. at 743.

More to the point, federal appellate courts are split on whether releases of pollutants from point sources *to groundwater* are subject to NPDES program when there is a direct hydrologic connection between the groundwater and jurisdictional surface waters. Through conflicting decisions, the appeals courts have found the CWA capable of supporting *either* interpretation. While the Fifth and Seventh Circuits have concluded that the NPDES program does not extend to pollutants that reach groundwater in certain circumstances, the Fourth and Ninth Circuits have concluded that, in fact, these discharges fall within the scope of the program.[2]

EPA should address the widespread confusion that these conflicting judicial opinions have created. In so doing, EPA must look to the statute as a whole to discern whether Congress intended for discharges via groundwater migration to require NPDES permits. *See Star Athletica,*

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[2] Four distinct case examples illustrate this point. On the one hand, *Vill. of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994), held that the NPDES program does not encompass pollutants "seep[ing]" into "local ground waters" even though the Court was aware of the possibility that those pollutants might reach "underground aquifers that feed lakes and streams that are part of the 'waters of the United States'" And *Rice*, 250 F.3d at 271, found that it would be "an unwarranted expansion of the [statute]" to extend point source requirements to pollution that reaches jurisdictional waters by "gradual, natural seepage" through groundwater. On the other hand, *County of Maui*, 886 F.3d at 749, imposed liability for discharges via groundwater based on "fairly traceable" standard. And *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, No. 17-1640, 2018 WL 1748154, at *9 (4th Cir. Apr. 12, 2018), concluded that "[A]n alleged discharge of pollutants, reaching navigable waters located 1000 feet or less from the point source by means of ground water with a direct hydrological connection to such navigable waters, falls within the scope of the CWA."

L.L.C. v. Varsity Brands, Inc., 137 S. Ct. 1002, 1010 (2017) ("Interpretation of a phrase of uncertain reach is not confined to a single sentence when the text of the whole statute gives instruction as to its meaning.") (brackets omitted); *Nat. Res. Def. Council v. Muszynski*, 268 F.3d 91, 98 (2d Cir. 2001) (explaining that "when determining which reasonable meaning should prevail, the text should be placed in the context of the entire statutory structure" and that "absurd results are to be avoided and internal inconsistencies in the statute must be dealt with").

As the Supreme Court has explained, the CWA "makes plain" that a point source must "convey the pollutant to 'navigable waters'" to be subject to NPDES permitting. *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004). The point source "need not be the original source of the pollutant," but it does "need [to] *convey* the pollutant *to* 'navigable waters.'" *Id.* (emphasis added). Requiring that a pollutant be conveyed to *and* added to a navigable water by a point source—as opposed to merely having been released from some point source sometime before reaching the navigable water—prevents the NPDES program from expanding its reach to encompass all nonpoint sources.

An alternative approach, one that ignores how pollutants reach jurisdictional waters, would conceivably allow vast swaths of nonpoint source pollution to be reformulated as point source discharges and consequently swept into the NPDES program. It also disregards Congress's intent to leave groundwater outside the scope of NPDES program. As one court recently observed, "any non-point-source pollution … could invariably be reformulated as point-source pollution by going up the causal chain to identify the initial point sources to come to rest in navigable waters. *26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth.*, No. 15-cv-1439, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017), *appeal docketed*, No. 17-2426 (2d Cir.

Aug. 4, 2017). The way to preserve Congress's "clear and precise distinction between point sources … and nonpoint sources," S. Rep. No. 95-370, at 8 (1977), is by limiting the NPDES program to pollutants that reach and are added to navigable waters by a discernible, confined, and discrete conveyance. *See Metacon Gun Club*, 575 F.3d at 224.

C. EPA Should Specifically Reject the Direct Hydrologic Connection Theory.

The "direct hydrologic connection" theory that EPA has occasionally endorsed subverts Congress's distinction between point and nonpoint sources and between navigable and ground waters, so EPA should reconsider and definitively reject it. In fact, the Act does not even mention the term "direct hydrologic connection," which is more commonly employed by courts "attempting to mitigate" the expansive and unpredictable consequences of holding that releases through groundwater might be subject to NPDES permitting.[3] Furthermore, trying to apply the "direct hydrologic connection" theory raises a host of practical questions. What exactly counts as a "hydrologic connection"? How "direct" must the connection be for the pollutants to come within the NPDES program? How would effluent limits be developed or compliance be determined? The Act does not answer these questions. Because the "direct hydrologic connection" requirement has no foundation in the text or history of the CWA, its contours are malleable and subject to all manner of distortion.[4] It invites precisely the type of expansive reading that would eviscerate the distinction between point and nonpoint sources.

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[3] *See Ky. Waterways All. v. Ky. Utils. Co.*, No. 5:17-CV-292, 2017 WL 6628917, at *11 n.3 (E.D. Ky. Dec. 28, 2017), describing application of the "direct hydrologic connection" theory by the court in *Tennessee Clean Water Network v. Tennessee Valley Authority*, 273 F. Supp. 3d 775, 827 (M.D. Tenn. 2017).

[4] *See id.*; *see, e.g.*, *McClellan Ecological Seepage Situation v. Weinberger*, 707 F. Supp. 1182, 1196 (E.D. Cal. 1998), *vacated on other grounds*, *McClellan Ecological Seepage Situation v. Perry*, 47 F.3d 325 (9th Cir. 1995) , finding that discharges to groundwater are subject to CWA regulation if "the groundwater is *naturally connected* to surface waters" (emphasis added); *Ass'n Concerned Over Res. & Nature, Inc. v. Tenn. Aluminum Processors, Inc.*, No. 1:10-cv-84, 2011 WL 1357690, at *17 (M.D. Tenn. Apr. 11, 2011) , finding that "[G]roundwater is subject to the

Reconsidering and rejecting the "direct hydrologic connection" theory will not require a wholesale reversal of any longstanding EPA position. To be sure, EPA has raised the direct hydrologic connection theory in various contexts, *see* 83 *Fed. Reg.* at 7,127 (listing examples), including in an *amicus* brief in the recent *County of Maui* litigation, *see* Doc. # 40, Brief for the United States as Amicus Curiae in Support of Plaintiffs-Appellees, *Haw. Wildlife Fund v. County of Maui*, No. 15-17447 (9th Cir., filed May 31, 2016). But none of those examples acknowledges the numerous *contrary* statements EPA has made about the scope of the NPDES program. To illustrate:

- A 1973 memorandum from the Office of General Counsel asserts that "[d]ischarges into ground waters are not included" within the scope of the statutory term "discharge of a pollutant." *In re E.I. DuPont de Nemours & Co.*, Op. No. 6, 1975 WL 23850, at *3 (E.P.A.G.C. Apr. 8, 1975).

- A 1992 EPA guidance document notes that "EPA and the States regulate facilities [under the CWA] that either discharge wastewaters *directly* to surface waters or discharge to municipal treatment systems." EPA, Final Comprehensive State Ground Water Protection Program Guidance, at 1-27 (Dec. 1992).

- In a 2005 permit proceeding, EPA noted that discharges "could be re-directed to a non-surface water discharge location, such as ground injection" and that "NPDES requirements would not apply, because there would be no direct discharge to a surface water of the United States." EPA, RTC Holyoke Gas & Electric Department Cabot Street Station, Permit No. MA0001520, at 20 (Aug. 9, 2005).

- In the 2011 Pesticide General Permit proceeding, EPA responded to comments about potential groundwater impacts by stating that "discharges to groundwater

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CWA provided there is an *impact on federal waters*." (emphasis added); *Ohio Valley Envtl. Coal. Inc. v. Pocahontas Land Corp.*, No. 3:14-1133, 2015 WL 2144905, at *8 (S.D. W. Va. May 7, 2015), stating that "Defendant may be required to seek an NPDES permit even if groundwater is *somehow hydrologically connected* … to surface waters." (emphasis added); *Tenn. Clean Water Network*, 273 F. Supp. 3d at 827, noting that releases into groundwater are subject to NPDES requirements "if the hydrologic connection between the source of the pollutants and navigable waters is *direct, immediate, and can generally be traced*" (emphasis added).

are not regulated under the NPDES program." EPA RTC, NPDES Pesticide General Permit (Oct. 31, 2011).

- In a 2014 Small Municipal Separate Storm Sewer System permit proceeding, EPA stated in a fact sheet that "NPDES permits are applicable for point source discharges to waters of the U.S." and that "discharges to groundwater are not addressed in the NPDES program and as such as not addressed by this permit." EPA, Fact Sheet, Draft General Permits for Stormwater Discharges from Small Municipal Separate Sewer Systems in Massachusetts, at 18 (Sept. 30, 2014).

- In a 2017 permit proceeding related to remediation activity in Massachusetts and New Hampshire, EPA said "discharges to groundwater are not regulated by the NPDES program." EPA, Response to Public Comments, Permit Nos. MAG910000 and NHG910000, at 7 (Mar. 9, 2017).

The inconsistency between prior EPA statements on this issue warrants clarification. EPA should take the time to reconsider the statute's text, structure, history, and purpose, taking into account case law and practical considerations, and arrive at a definitive position rejecting the direct hydrological connection theory.

D. The CWA's Legislative History Further Shows that Congress Did Not Intend to Subject Discharges via Groundwater to the NPDES Program.

The legislative history of the CWA also supports a conclusion that Congress did not want to subject discharges via groundwater migration to NPDES permitting. For one thing, it shows that Congress was aware that pollutants might reach jurisdictional waters as a result of subsurface disposal, yet it still opted to keep states and local governments responsible for controlling such pollution under nonpoint source programs. Prior to passage of the 1972 Act, EPA sought authority from Congress to "control [] all sources of pollution, be they discharged directly into any stream or through the ground water table." *Water Pollution Control Legislation–1971 (Proposed Amendments to Existing Legislation): Hearings before the H. Comm. On Pub. Works*, 92nd Cong. 230 (1971) (statement of William Ruckelshaus, Administrator, EPA). Similarly, an amendment offered by Congressman Leslie Aspin sought to bring groundwater within the CWA's permitting and enforcement provisions, on the premise that "if [Congress did] not stop

pollution of ground waters through seepage and other means, ground water gets into navigable waters, and to control only navigable water and not the ground water makes no sense at all." *See* 118 Cong. Rec. 10,666, 10,669 (1972) (statement of Rep. Aspin).

Congress ultimately rejected the Aspin Amendment and EPA's request for control over groundwater sources, along with other proposals to extend federal regulatory authority to groundwater, "[b]ecause the jurisdiction regarding groundwaters is so complex and varied from State to State[.]" S. Rep. No. 92-414, at 73 (1971). Again, it is no secret that "Congress was aware that there was a connection between ground and surface waters," but nevertheless chose "to leave the regulation of groundwater to the States." *Rice*, 250 F.3d at 271–72.

When Congress wanted to address subsurface pollution in the CWA, it did so expressly. Thus, section 304(f) of the Act specifically mentions dealing with water pollution that ultimately results from disposal in subsurface excavations. *See* 33 U.S.C. § 1314(f). In explaining that section 304 of the Act was intended to address subsurface pollution, the House Committee Report described how EPA should provide technical guidance to states for their *nonpoint* source programs:

> This section and the information on such nonpoint sources is among the most important in the 1972 Amendments. ... The Committee, therefore, expects the Administrator to be most diligent in gathering and distribution of the guidelines for the identification of nonpoint sources, and the information on processes, procedures, and methods for control of pollution *from such nonpoint sources as ... the disposal of pollutants in wells or other subsurface excavations*[.]

H.R. Rep. No. 92-911, at 109 (1972) (emphasis added). Similarly, the Senate Report explained that, under CWA section 304(f), EPA must provide information that "may range from provisions for evaluating geological characteristics of disposal sites to the costs and benefits of alternative

methods of disposal." S. Rep. 92-414, at 53. Congress acknowledged the risk of "groundwater contamination" at "shallower disposal sites," which is why it directed EPA to outline provisions "to control leaching of materials from such sites, which include land-fill sites as well as abandoned mines." *Id.* But nowhere did Congress declare that those sites ought to be subject to NPDES permit requirements.

The legislative history for section 208(b)(2) of the Act provides comparable support that NPDES requirements were never intended to address activities like disposal of pollutants on land or in subsurface excavations. A senate report discussing that CWA section 208 notes that, "Section 208, the 1972 act's laboratory for new institutional control mechanisms for vexing nonpoint source problems … may not be adequate." S. Rep. No. 95-370, at 10. Congress also understood that states might resist developing protective control measures, speculating that it "may be that sometime in the future a Federal presence can be justified and afforded." *Id.* Congress nevertheless concluded that "it is both necessary and appropriate to make a distinction as to the kinds of activities that are to be regulated by the Federal Government and the kinds of activities which are to be subject to some measure of local control" under section 208. *Id.* The "direct hydrologic connection" theory, or any similar theory for imposing NPDES requirements on discharges via groundwater migration, erases that distinction.

If Congress had wanted the NPDES program to apply more broadly, such that it would cover releases via groundwater migration, it could simply have said so. And yet, Congress never did. As the D.C. Circuit recognized decades ago:

> [I]t does not appear that Congress wanted to apply the NPDES system wherever feasible. Had it wanted to do so, it could easily have chosen suitable language, *e.g.*,

> "all pollution released through a point source." Instead, as we have seen, the NPDES system was limited to "addition" of "pollutants" "from" a point source.

Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 176 (D.C. Cir. 1982).

That Congress did not use language that would have extended the NPDES program to groundwater discharges is further proof that Congress did not intend for such discharges to come within the program's ambit. *See Murphy v. Smith*, 138 S. Ct. 784, 789 (2018) (inferring statute's meaning based on alternative language that Congress could have used but ultimately did not).

E. Well-Known Principles of Statutory Interpretation Resolve any Doubt that the CWA's NPDES Requirements Do Not Apply to Discharges via Groundwater.

Any doubt about whether the CWA's text, structure, and purpose support the conclusion that Congress did not intend to regulate discharges via groundwater migration under the NPDES program should be resolved against applying NPDES requirements. Such a conclusion would be in keeping with numerous canons of statutory interpretation.

1. Clear Statement Rules Argue Against NPDES Requirements Applying to Discharges to Groundwater.

Chief among these canons are a pair of clear statement rules. These rules typically require a clear statement on a statute's face to rebut a well-established policy presumption. One well-known clear statement rule provides that, "unless Congress conveys its purpose clearly, it will not be deemed to have significantly changed the federal-state balance." *United States v. Bass*, 404 U.S. 336, 349 (1971); *see Gregory v. Ashcroft*, 501 U.S. 452, 560–61 (1991) ("If congress intends to alter the usual constitutional balance between the States and the Federal Government, it must make its intention to do so unmistakably clear in the language of the statute."). The Supreme Court has applied this clear statement rule in construing the meaning of the CWA. *See Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 173–74 (2001).

EPA has a specific duty to preserve the federal-state balance in administering the CWA because Congress expressly declared its "policy … to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use … of land and water resources." 33 U.S.C. § 1251(b). Far from offering a "clear statement" sufficient to strip states of their traditional authority over nonpoint source control and groundwater resources, the CWA recognizes that the federal and state governments have distinct roles to play, with states playing the lead role as to nonpoint source pollution and regulation of groundwater. *See PUD No. 1 v. Wash. Dep't of Ecology*, 511 U.S. 700, 704 (1994). In particular, nonpoint source control most often implicates land use controls, which is why Congress elected to leave such responsibility to state and local governments, "the level[s] of government closest to the sources of the problem." S. Rep. No. 95-370, at 9. Congress thus drew a "clean and precise distinction between point sources, which [are] subject to direct Federal regulation, and nonpoint sources, control of which was specifically reserved to State and local governments[.]", *Id.* at 8. Nothing about that statement suggests that the federal government should be responsible for regulating discharges via groundwater under the CWA.

The second clear statement rule implicated here provides that, where a statutory interpretation would lead to an unprecedented and extraordinary expansion of federal regulatory authority, the statute's text must clearly indicate that Congress intended such a result. *See Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427, 2444 (2014) (*UARG*). Unsurprisingly, the Supreme Court has "been reluctant to read into ambiguous statutory text" the "power to require permits for … thousands … [or] millions of small sources nationwide." *Id.* The Court has also said the fact that an interpretation of ambiguous statutory text places "plainly excessive demands on limited governmental resources is alone a good reason for rejecting it." *Id.* Congress "must speak

clearly if it wishes to assign to an Agency decision of vast 'economic and political significance.'" *Id.* (quoting *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000)).

By both (or either) of those measures, EPA ought to authoritatively reject the "direct hydrological connection" theory. Regulation of discharges via groundwater migration would exponentially expand the scope of the NPDES program without a clear statement from Congress that this is what it intended. For instance, over 22.2 million homes have septic systems.[5] To date, almost none of those septic systems has required an NPDES permit because, with very narrow exceptions,[6] they are considered nonpoint sources. *See, e.g.*, *United States v. Smithfield Foods, Inc.*, 972 F. Supp. 338, 345 (E.D. Va. 1997) (referring to septic systems as nonpoint sources). But because many of those systems collect wastewater and disperse it into soil and groundwater, which might at some point reach navigable waters, the "direct hydrological connection" theory could subject millions of septic systems to NPDES requirements for the first time ever. Such an expansion of the NPDES permitting system would be unworkable for both homeowners and regulators, requiring a significant outlay of resources to permit the millions of septic systems for limited environmental protection that is not already provided by other state and federal programs.

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[5] *See* U.S. Dep't of Housing & Urban Devel. & U.S. Census Bureau, American Housing Survey for the United States: 2011, Current Housing Reports, H150/11, at 14 Tbl. C-04-AO (Sept. 2013), *available at* https://www.census.gov/content/dam/Census/programs-surveys/ahs/data/2011/h150-11.pdf.

[6] To be sure, if pollutants from septic tanks reach navigable waters via a discernible, confined, and discrete conveyance, they would be point source discharges. *See*, *United States v. Lucas*, 516 F.3d 316, 332 n.43 (5th Cir. 2008) (installation of "septic systems directly in wetlands that are waters of the United States, thus ma[de] a system that is typically a diffuse, non-point source into a point source"); *see also id.* at 333–34 (collecting cases holding that pollutants conveyed from septic systems to navigable waters via pipes were point source discharges).

Similarly, numerous industries, not just power generation, rely on impoundments—including stormwater ponds, farm ponds, surface impoundments, cooling ponds, and water supply reservoirs—that could release pollutants to groundwater. Many of these structures and facilities do not currently require NPDES permits. For those that do, the permits focus primarily on regulating pollutants that reach jurisdictional surface waters through a discernible, confined, discrete conveyance, rather than through passive and diffuse groundwater migration. Under the "direct hydrological connection" theory, however, owners and operators of those impoundments often would have to seek new or modified permits and identify additional discharge points.

The "direct hydrological connection" theory could also pull into the NPDES program a host of public and private water and pollution control and treatment infrastructure projects specifically designed to protect and preserve water resources. Groundwater recharge systems use spreading basins, percolation ponds, infiltration basins, and injection wells, among other technologies and structures, to convey stormwater or recycled wastewater into subsurface aquifers. These systems provide a host of ecological benefits: they augment public water supplies, create seawater intrusion barriers, and eliminate surface outfalls.[7] Green infrastructure also advances some of the same aims as the CWA by absorbing and infiltrating stormwater into the ground to minimize discharges of industrial and municipal stormwater; EPA even promotes green infrastructure and other infiltration practices to control for certain types of pollution.[8] The "direct hydrological

[7] *See* U.S. EPA, *2012 Guidelines for Water Reuse*, at 4-25 (Sept. 2012), https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=253411.
[8] *See* U.S. EPA, *Benefits of Green Infrastructure*, https://www.epa.gov/green-infrastructure/benefits-green-infrastructure, and U.S. EPA, *National Management Measures to Control Nonpoint Source Pollution from Urban Areas* 5-9, 5-10 (2005), https://www.epa.gov/nps/urban-runoff-national-management-measures.

connection" theory could subject many of these systems to NPDES permitting whenever the water (and any pollutants in it) that they collect or disperse ultimately migrates with the groundwater to navigable waters—which, thanks to the hydrologic cycle, much groundwater does. That would discourage these features' use, which would result in harm to the environment of precisely the kind Congress intended to prevent when it promulgated the CWA.

For all of these reasons, the "direct hydrological connection" theory would cause the NPDES program to balloon exponentially. And yet, nothing in section 402 (or any other part of the Act) reflects the slightest intent to extend the NPDES program beyond traditional industrial and municipal end-of-pipe discharges, to reach things like well disposal and subsurface excavations that are already covered as nonpoint sources under CWA section 304(f). Absent a clear statement from Congress, the CWA should not be interpreted to embrace an approach—like the "direct hydrological connection" theory—that would impose such sweeping, new demands on thousands or even millions of people and business across the country.

2. Other Canons of Interpretation Also Lead to the Conclusion That NPDES Requirements Should Not Apply to Discharges to Groundwater.

Other interpretive canons compel the same conclusion as do the clear statement rules detailed above, but for reasons having to do with the uncertainty inherent in extending NPDES permitting to groundwater releases. For instance, because the "direct hydrological connection" theory does not come with any inherent or text-based geographic or temporal limitations, it could require an NPDES permit for any release of pollutants into the ground so long as the pollutants *might* somehow, someday, somewhere, make their way into navigable waters. Groundwater systems are complex, and it will often be difficult or impossible to ascertain whether pollutants released from point sources are likely to reach navigable waters through groundwater. Pollutants in

groundwater will sometimes migrate to navigable waters via someone else's land—or many others' lands—in which case the person responsible for releasing the pollutants might be unable to track or control their movements. The owner or operator of a point source might be unable to conduct the sampling or monitoring at the point where pollutants reach jurisdictional waters because those locations may be miles away or beyond the owner or operator's control—further, the point where pollutants reach jurisdictional waters might not be stable, and can migrate with rainfall and other land use patterns. And when those pollutants finally arrive at navigable waters after migrating through groundwater, they will likely contain pollutants from other sources, so that it will be exceedingly difficult to tell which pollutants came from which source. Such a scenario is untenable for regulated industries, regulators, and land owners.

In many cases, the only way to tell whether a particular source is releasing pollutants into groundwater, or whether certain pollutants in navigable waters ultimately come from that source, will be to conduct incredibly detailed and intricate hydrologic studies. Those studies are time-consuming, often requiring months or years to complete, depending on the complexity of the terrain, flow and migration patterns (if any). And they are expensive, usually costing several thousand dollars, even in relatively simple cases. Even for people who can afford them, such studies do not always yield conclusive and reliable results, not least of all because it is not always possible to determine where groundwater releases into a navigable water. *See infra* Part IV.

The upshot is that subjecting groundwater releases to NPDES permitting requirements will often leave people and businesses in the dark about whether and how those requirements apply to them. When a proffered interpretation of a statute would leave ordinary people unable to discern

whether their intended course of conduct exposes them to liability under that statute, the interpretation offends due process. *See Papachristou v. Jacksonville*, 405 U.S. 156, 162 (1972) ("Living under a rule of law entails various suppositions, one of which is that [all persons] are entitled to be informed as to what the State commands or forbids."). Such an interpretation ought to be avoided when an alternative, reasonable one exists that does not raise similar constitutional difficulties. *See Clark v. Martinez*, 543 U.S. 371, 380–81 (2005) (explaining canon of constitutional avoidance). The unworkable interpretation should be especially avoided when, as here, it would only further muddy the waters about the reach of a statute with a "notoriously unclear" geographic scope. *Sackett v. EPA*, 566 U.S. 120, 132–33 (2012) (Alito, J., concurring); *see also U.S. Army Corps of Engr's v. Hawkes Co.*, 136 S. Ct. 1807, 1816 (2016) (Kennedy, J., concurring).[9] It is manifestly unreasonable to inject into the CWA this additional "level of uncertainty … [that] would expose potentially [millions] of … [sources] to … litigation and legal liability if they [or regulators] happen[] to make the 'wrong' choice." *Umatilla Waterquality Protective Ass'n, Inc. v. Smith Frozen Foods*, 962 F. Supp. 1312, 1320 (D. Or. 1997). Yet that is exactly what would happen under practically any theory applying the NPDES program to releases to or from groundwater.

The notice and fair-warning problems inherent in the "direct hydrological connection" theory are particularly a concern because violators of the CWA face stiff criminal liability. "Knowing" violations of the Act are punishable by up to $100,000 per violation per day and six years' imprisonment, while "negligent" violations can lead to fines of up to $50,000 per violation per

[9] Lamenting Congress's and EPA's failure to resolve the "critical ambiguity" in the "precise reach of the Act," and highlighting concerns about "the reach and systemic consequences of the Clean Water Act," respectively.

day and two years' imprisonment. 33 U.S.C. § 1319(c).[10] Because the CWA has criminal applications, it must be construed in accordance with the rule of lenity. *See Kasten v. Saint-Gobain Performance Plastics Corp.*, 563 U.S. 1, 16 (2011). Under lenity, statutory ambiguities should be resolved in regulated entities' favor. *See id.*; *see also United States v. Plaza Health Labs., Inc.*, 3 F.3d 643, 649 (2d Cir. 1993) (construing "point source" in accordance with rule of lenity). That is, unless the CWA's "text, structure, and history" demonstrate that applying the NPDES program to discharges via groundwater migration is "unambiguously correct," lenity demands that the government treat the discharges as not being subject to the program. *See United States v. Granderson*, 511 U.S. 39, 54 (1994). The "direct hydrologic connection" theory is far from "unambiguously correct."

As explained above, these well-established principles of statutory construction weigh in favor of the same conclusion that the CWA's text, structure, and history support: that the NPDES program does not encompass discharges via hydrologically connected groundwater.

III. Releases to Groundwater and any Subsequent Surface Water Impacts are Appropriately Addressed by Other Federal Authorities and State Laws, Which Lends Further Support to the Reasonableness of an Interpretation Excluding Discharges via Groundwater from the NPDES Program.

There is no shortage of federal and state laws aimed at addressing impacts from groundwater pollution. The existence of these numerous other federal regulatory programs and state authorities "further supports the reasonableness" of an EPA interpretation that CWA regulations do not regulate discharges via groundwater that eventually reach jurisdictional surface waters.

[10] The CWA also provides for civil penalties in enforcement actions by EPA or private citizens, which can be up to $52,414 per violation. 33 U.S.C. §§ 1319(d), 1365(a); *see also* 82 Fed. Reg. 3,633, 3,636 (Jan. 12, 2017) (inflation adjustment ratio).

See Catskill Mountains Chapter of Trout Unlimited v. EPA, 846 F.3d at 529–30 (2d Cir. 2017) (*Catskill III*) ("Yet another consideration supporting the reasonableness of the Water Transfers Rule is that several alternatives could regulate pollution in water transfers even in the absence of an NPDES permitting scheme[.]").

Disposals of pollutants in wells and subsurface excavations are addressed under state CWA nonpoint source programs. *See,* Part II.A, *supra*. CWA section 319 grant programs, for example, have successfully addressed pollution from impoundments associated with legacy mining operations, wastewater treatment units, and a host of other features affecting groundwater quality.[11] Indeed, section 319 expressly requires States to identify best management practices for controlling pollution from nonpoint sources, "taking into account the impact of the practice on groundwater quality." 33 U.S.C. § 1329(b)(2)(A).

A. The Resource Conservation and Recovery Act and the Coal Combustion Residuals Rule Address Groundwater.

The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 *et seq.*, directly regulates groundwater, including ash management features commonly used in the electric utility industry. "RCRA is a comprehensive environmental statute that governs the treatment, storage, and disposal of solid and hazardous waste." *Meghrig v. KFC W., Inc.*, 516 U.S. 479, 483 (1996). Of particular relevance here, RCRA's Coal Combustion Residuals (CCR) Rule, 80 *Fed. Reg.* 21,302 (Apr. 17, 2015), provides a comprehensive groundwater monitoring and corrective action

[11] *See, e.g.*, EPA, *Installing Best Management Practices Abates Acid Mine Drainage in Crab Orchard Creek*, EPA 841-F-14-001DD (May 2014), https://www.epa.gov/sites/production/files/2016-12/documents/tn_crab_orchard2016_508.pdf; *see generally* EPA, *Nonpoint Source Success Stories*, https://www.epa.gov/nps/nonpoint-source-success-stories (last visited Apr. 26, 2018) (listing dozens of remediation projects, many involving subsurface releases, that have used section 319 funds).

scheme aimed at CCR impoundments and landfills. EPA designed the rule to ensure "no reasonable probability of adverse effects on health or the environment" from disposal of coal ash. *Id.* at 21,311. The rule achieves that goal by imposing robust requirements for groundwater monitoring and remediation. For instance, the rule requires monitoring for specific constituents found in coal ash. *See* 40 C.F.R. pt. 257, Appendices III & IV. If a facility detects contamination above background levels, it must conduct additional monitoring to determine whether contaminants exceed the rule's rigid groundwater protection standards. *See id.* § 257.95(a). If those standards—most of which are equal to Safe Drinking Water Act "maximum contaminant levels" for finished drinking water[12]—are exceeded, the facility must undertake corrective action to remediate the groundwater until contaminant levels are at or below the level of the standard. *See id.* §§ 257.96(a), 257.98(c). In determining what corrective action is warranted, a facility must assess potential measures that can achieve the required remediation of groundwater impacts and abate not only future groundwater contamination, but also related surface water impacts. The facility must select a remedy that protects human health and the environment; attains the groundwater protection standard; controls the source of the releases of coal ash constituents; removes from the environment as much contaminated material released from the CCR unit as feasible; and satisfies all regulatory standards for management of wastes. *See id.* § 257.97(b).

The CCR Rule's comprehensive regulatory framework is the product of decades of EPA study on coal ash disposal. EPA designed the rule to identify and "ensure that groundwater contamination at new and existing CCR units will be detected and cleaned up as necessary to protect human health and the environment." *See* 80 *Fed. Reg.* at 21,396. But the effective

[12] "Maximum contaminant level" means "the maximum permissible level of a contaminant in water which is delivered to any user of a public water system." 40 C.F.R. § 141.2.

operation of the CCR rule's regulatory framework would be thwarted by treating releases to groundwater as point source discharges. That is because RCRA regulations like the CCR Rule apply only to "solid wastes," which RCRA defines to *exclude* industrial point source discharges subject to the CWA's NPDES permitting program. *See* 42 U.S.C. § 6903(27). Thus, an interpretation of the CWA that treats releases of CCR to groundwater as point source discharges would have the perverse effect of actually *preventing* application of the more tailored CCR Rule.[13]

B. The Comprehensive Environmental Response, Compensation, and Liability Act and the Safe Drinking Water Act Also Apply.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 *et seq.*, also addresses directly those pollutants released to groundwater. CERCLA authorizes EPA to remove pollutants if any "hazardous substance is released or there is a substantial threat of such a release into the environment. *Id.* § 9604(a)(1). CERCLA defines "environment" broadly, to include both "ground water" and "subsurface strata." *Id.* § 9601(8).

Federal law also addresses groundwater contamination through the Safe Drinking Water Act (SDWA), 42 U.S.C. §§ 300f *et seq.* In particular, over 650,000 stormwater drainage wells, septic

[13] Several courts have applied RCRA's industrial discharge exclusion to "point source" discharges regulated by the CWA's NPDES program. *E.g.*, *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1328-29 (S.D. Iowa 1997) (dismissing RCRA claim because the discharges at issue were subject to NPDES permitting requirements); *Coldani v. Hamm*, Civ. No. S-07-660, 2007 WL 2345016, at *10 (E.D. Cal. Aug. 16, 2007) (same); *State v. PVS Chemicals, Inc.*, 50 F. Supp. 2d 171, 177–78 (W.D.N.Y. 1998) (applying industrial discharge exclusion and dismissing RCRA claim to avoid subjecting the same discharges to duplicative regulation under the CWA and RCRA). To be clear, EEI believes that the *Williams* and *Coldani* courts wrongly decided the issue of whether discharges via hydrologically-connected groundwater require an NPDES permit. In any event, those cases illustrate that regulation of releases to groundwater as point source discharges under the CWA would displace regulation under RCRA.

system leach fields, agricultural drainage wells, and aquifer storage and recovery projects are covered by the SDWA's requirements for Class V wells.[14] Those requirements include submitting inventory information to permitting authorities, operating the wells in ways that do not endanger underground sources of drinking water, and properly closing the wells when they are no longer being used. *See* 40 C.F.R. pt. 144, subp. G. Subjecting Class V wells to NPDES permitting could mean imposing duplicative or inconsistent regulatory requirements.

C. State Programs Also Directly Address Discharges to Groundwater.

State laws also address groundwater pollution. States across the country regulate discharges into "waters of the state," which are often defined broadly to include groundwater. For instance, Florida has a comprehensive groundwater program in place that addresses discharges of pollutants to groundwater and through groundwater, as set forth in Chapters 62-520 and 62-550, F.A.C., which include specific numeric concentrations applicable to a multitude of metals, inorganic compounds, and other constituents, as well as narrative groundwater standards that prohibit concentrations that are toxic, carcinogenic or cause nuisance conditions. Recognizing that discharges to groundwater may ultimately interact with down gradient surface waters, Florida's groundwater program mandates that "discharge to groundwater shall not impair the designated use of contiguous surface waters." *See* F.A.C. subsection 62-520.310(12). Similarly, in Louisiana, the Louisiana Department of Environmental Quality solid waste regulatory program has been in place dating back at least into the late 1980s and mandates a permit for each solid waste impoundment and landfill. Permits require groundwater monitoring

[14] *See* EPA, Class V Wells for Injection of Non-Hazardous Fluids into or Above Underground Sources of Drinking Water (last visited Apr. 26, 2018), *available at* https://www.epa.gov/uic/class-v-wells-injection-non-hazardous-fluids-or-above-underground-sources-drinking-water.

at each regulated unit. Monitoring systems consist of a sufficient number of wells installed at appropriate locations and depths to yield samples from the uppermost aquifer and from the uppermost water bearing zone. The program is structured to begin with detection monitoring followed by, as needed, risk-based assessment monitoring, assessment of corrective measures, selection of remedy and initiation of corrective action plan. Agency engineering, surveillance and enforcement staffs insure that the program is effective for protection of health and the environment.

The state of South Carolina has defined "Waters" to include bodies of "… surface or underground water …" S.C. Code Ann. § 48-1-10(2). In 1985, South Carolina Regulation 61-68, Water Classifications and Standards, was amended to include groundwater as waters of the State consistent with the policy of South Carolina Department of Health and Environmental Control (Department). The amended regulation provides "… all ground waters of the State shall be protected to a quality consistent with the use associated with the classes described herein. Further, the Department may require the owner or operator of a contaminated site to restore the ground water quality to a level that maintains and supports the existing and classified uses …" *See* S.C. Code Ann. Regs. 61-68(H). The regulation further establishes standards for groundwater based on the designated use as well as establishes a classification for exceptionally valuable ground water, such as in those areas in which groundwater is the only source of drinking water or groundwater provides the base flow for a particularly sensitive ecological system. The groundwater discharge permit is the State Land Application permit—which are also known as "ND" permits since there is no direct discharge (ND) to surface waters.

See, also, Michigan (M.C.L. §§ 324.3109(1), 324.3101(aa)); North Carolina (15A NCAC 2T .0102; 15A NCAC 18A .1934); Ohio (R.C. §§ 6111.04(A)(1), 6111.01). Many states also have filed amicus briefs in pending litigation illustrating how their state regulatory programs already address releases to groundwater and any resulting environmental impacts. Those briefs are attached here as Appendix A.

Should EPA assert that the NPDES program does not encompass discharges to surface waters via hydrologically connected groundwater, it will not be leaving a regulatory gap, despite what some stakeholders may claim. In fact, insofar as this industry is concerned, EPA would be ensuring that the more tailored regulatory program—put in place by the CCR Rule and other federal and state laws—would apply in full and that RCRA's industrial discharge exclusion (in the definition of "solid waste") would not be triggered.

IV. Strong Practical Considerations Support Clarifying that the NPDES Program Does Not Encompass Discharges via Hydrologically Connected Groundwater.

Aside from the foregoing legal considerations, EPA also should be cognizant of the strong practical considerations that militate against concluding that NPDES permitting requirements apply to discharges via hydrologically connected groundwater. These comments discussed many of the significant negative ramifications that could result from subjecting such discharges to NPDES requirements. *See,* Part II.E, *supra.*

When amending the CWA in the past, Congress has previously recognized the burdens EPA would face if it had to permit every possible point source discharge. *See*, 123 Cong. Rec. 38,924, 38, 956 (Dec. 15, 1977) (when exempting return flows from irrigated agriculture from NPDES,

Congress recognized "[t]he problems of permitting every discrete source or conduit returning water to the streams from irrigated lands is simply too burdensome to place on the resources of EPA"); 131 Cong. Rec. 15,616, 15,657 (June 13, 1985) (declaring it "absurd" to "require everyone who has a device to divert, gather, or collect stormwater runoff and snowmelt to get a permit from EPA as a point source" and warning about an "administrative nightmare" that would be "prohibitively expensive to administer"). Applying NPDES permitting requirements to discharges via groundwater migration would raise just the sorts of concerns Congress foresaw when it intervened in the 1977 and 1987 CWA amendments.

For one thing, there is no meaningful limit to the number of new "point sources" that could require permits under the direct hydrologic connection approach—or under any similar approach, like the Ninth Circuit's "fairly traceable" standard. *See County of Maui*, 886 F.3d at 749. Because such standards lack any clear textual or logical limiting principle, they could conceivably apply to almost any subsurface release of pollutants. *See,* Part. II.C, *supra.*

Further, NPDES requirements often cannot be applied intelligibly to the new "point sources" that would be permitted under a direct hydrologic connection theory. That is, in part, because NPDES permitting regulations are, by their nature, "end of pipe." *See Froebel v. Meyer*, 217 F.3d 928, 937 (7th Cir. 2000). Unlike pollutants from a pipe, groundwater seldom discharges into a navigable water at a discrete and identifiable point. It is therefore not always possible to determine exactly where pollutants in groundwater reach navigable waters. And, when there is no readily identifiable, defined outfall or discharge point, there is nowhere to conduct the monitoring and sampling the Act requires. *See* 40 C.F.R. 122, subpt. C. Even assuming permit writers could somehow identify certain outfalls or discharge points, sampling and monitoring

locations may be both miles away *and* beyond the owner or operator's control. And at those outfalls or discharge points, groundwater will likely contain pollutants from many other sources.

Things get trickier still when, as is often the case, pollutants are injected into groundwater as part of the treatment process. In those cases, sampling at the injection site may not make sense because filtration through the soil is itself part of the intended treatment process, and compliance with the Act is to be determined only "after all treatment processes" have occurred."[15]

In sum, the result of the "direct hydrologic connection" theory is that many people and businesses will have no real way of knowing whether their conduct requires an NPDES permit, and if so, what the requirements of that permitting scheme might be.

V. EPA Should Clarify its Interpretation of the CWA through Rulemaking.

EPA should conduct notice-and-comment rulemaking to clarify the scope of the NPDES program. EPA should look to the Water Transfers Rule as a guidebook for how it should move forward. That rule, 73 *Fed. Reg.* 33,697 (June 13, 2008) (codified at 40 C.F.R. § 122.3(i)), grew out of extensive litigation over whether an NPDES permit is required to move existing pollutants from one navigable water to another. According to the "unitary waters theory," no NPDES permit was necessary because "it is not an 'addition … to navigable waters' to move existing pollutants from one navigable water to another." *Friends of the Everglades v. S. Fla. Water Mgmt. Dist.*, 570 F.3d 1210, 1217 (11th Cir. 2009).

[15] *See* U.S. EPA, *NPDES Permit Writer's Manual* § 8.1.2.3 (Sept. 2010), *available at* https://www.epa.gov/npdes/npdes-permit-writers-manual.

Before EPA promulgated the Water Transfers Rule, several federal courts of appeals had rejected the unitary waters theory, instead holding that transferring pollutants from one navigable water body to another required an NPDES permit. *See, e.g.*, *Catskill Mountains Ch. of Trout Unlimited, Inc. v. City of New York*, 273 F.3d 481, 491 (2d Cir. 2001) (*Catskill I*); *Catskill Mountains Ch. of Trout Unlimited, Inc. v. City of New York*, 451 F.3d 77, 83 (2d Cir. 2006) (*Catskill II*); *Dague v. City of Burlington*, 935 F.2d 1343, 1354–55 (2d Cir. 1991); *Dubois v. U.S. Dep't of Agric.*, 102 F.3d 1273, 1296 (1st Cir. 1996); *Plains Res. Council v. Fidelity Exploration and Dev.*, 325 F.3d 1155, 1163 (9th Cir. 2003). As EPA noted, however, none of those courts … viewed the question of statutory interpretation through the lens of *Chevron* deference. 73 *Fed. Reg.* at 33,700 n.4.

The Second Circuit's decisions in *Catskill I* and *Catskill II*, for example, rested on the plain meaning of "addition," as used in the CWA's definition of "discharge of a pollutant" in 33 U.S.C. § 1362(12). That Court held that "the transfer of water containing pollutants from one body of water to another, distinct body of water is plainly an addition and thus a 'discharge' that demands an NPDES permit." *Catskill I*, 273 F.3d at 491. In rejecting the unitary waters theory, the Second Circuit emphasized that "[s]uch a theory would mean that movement of water from one discrete water body to another would not be an addition even if it involved a transfer of water from a water body contaminated with myriad pollutants to a pristine water body containing few or no pollutants[,] which would be "inconsistent with the ordinary meaning of the word 'addition.'" *Id.* at 493. The Court went on to emphasize that, even if the text were ambiguous, legislative history would not compel a contrary interpretation, since "[t]he legislative history [was] silent on the meaning of 'addition.'" *Id.* In *Catskill II*, the Second Circuit again rejected the unitary waters theory, reiterating that it "simply overlook[s] [the] plain language" of the CWA. *Catskill II*, 451 F.3d at 84.

Circumstances changed once EPA promulgated the Water Transfers Rule, which provides that "an activity that conveys or connects waters of the United States without subjecting the transferred water to intervening industrial, municipal, or commercial use" is "not subject to regulation under the [NPDES] permitting program." 73 *Fed. Reg.* at 33, 697. EPA supported that Rule with an extensive analysis that took account of all relevant statutory provisions, as well as the statute's structure and legislative history, construing each part or section "'in connection with every other part or section to produce a harmonious whole.'" *Id.* at 33701. After the Water Transfers Rule took effect, challenges to that rule ended up back in the Second Circuit. In 2017, that Court held that whether a water transfer is an "addition" within the meaning of the CWA is ambiguous, and it ultimately upheld the Rule after deferring to EPA's interpretation at *Chevron* "Step Two." *See Catskill III*, 846 F.3d at 508. In upholding the Rule, the Court went out of its way to downplay the significance of its "plain language" holdings in *Catskill I* and *Catskill II*, asserting that it had, in fact, never held that the CWA's text was so "unambiguous" as to preclude *Chevron* deference in the event EPA adopted a rule based on the unitary waters theory. *See id.*

All of this is to say that, even where prior judicial opinions may appear to foreclose a possible interpretation of the CWA, EPA may still promulgate and successfully defend a regulation which exercises its expertise in a manner compelling a different outcome. And it is what makes it so important that EPA act by rulemaking in this case. A regulation—as opposed to a less formal action— will bring welcomed force and clarity to EPA's ultimate position, thus benefitting regulators, the regulated community and the public alike. EPA ought to engage in notice-and-

comment rulemaking to promulgate such a regulation rejecting the "direct hydrologic connection" theory.

VI. Conclusion.

As things stand now, EEI's members face significant regulatory uncertainty when it comes to discharges via hydrologically connected groundwater. EPA can eliminate this uncertainty by undertaking a rulemaking to clarify that the CWA's NPDES program does not extend to discharges via hydrologically connected groundwater. Such a rule would be entirely consistent with the text, structure, history, and purpose of the CWA, and would preserve the function and purpose of other state and federal programs designed to address groundwater. It also would make eminently good sense and would avoid the many serious pitfalls that would present themselves under the "direct hydrologic connection" theory identified in EPA's request for comment. For all of those reasons, EEI respectfully requests that EPA swiftly conduct a rulemaking to establish that the NPDES program does not apply to discharges that occur via groundwater or subsurface flow.

Appendix A

No. 15-17447

In the United States Court of Appeals for the Ninth Circuit

HAWAI'I WILDLIFE FUND, A HAWAII NON-PROFIT CORPORATION; SIERRA CLUB-MAUI GROUP, A NON-PROFIT CORPORATION; SURFRIDER FOUNDATION, A NON-PROFIT CORPORATION; WEST MAUI PRESERVATION ASSOCIATION, A HAWAII NON-PROFIT CORPORATION,

Plaintiffs–Appellees,

v.

COUNTY OF MAUI,

Defendant-Appellant.

Appeal from the United States District Court
For the District of Hawaii
Case No. 1:12-cv-00198-SOM-BMK

BRIEF OF AMICI CURIAE STATES OF ARIZONA, ALABAMA, ALASKA, ARKANSAS, GEORGIA, INDIANA, KANSAS, LOUISIANA, MISSOURI, MONTANA, NEBRASKA, NEVADA, OKLAHOMA, SOUTH CAROLINA, TEXAS, UTAH, WEST VIRGINIA, AND WYOMING IN SUPPORT OF PETITION FOR REHEARING EN BANC

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March 12, 2018

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STATEMENT OF AMICI CURIAE

The States of Arizona, Alabama, Alaska, Arkansas, Georgia, Indiana, Kansas, Louisiana, Missouri, Montana, Nebraska, Nevada, Oklahoma, South Carolina, Texas, Utah, West Virginia, and Wyoming file this brief under Circuit Rule 29-2(a) to spotlight the effect of the February 1, 2018 panel decision and speak in furtherance of their interests in (and sovereignty over) intrastate water management, in particular when the actions of state political subdivisions are at issue. The panel decision, which threatens to deny state and local governments their traditional primary authority to regulate and manage intrastate land and water uses, is bad for the Amici States, wrong for the environment, and contrary to the principles of our "compound republic." *Quoting* Federalist No. 51, reprinted in 1 Debate on the Constitution 323 (B. Bailyn ed. 1993) (J. Madison).

The Amici States have a significant interest in en banc rehearing because of their sovereign status and long history of responsible governance over intrastate lands and waters, including groundwaters. Arizona's efforts in this regard include its Aquifer Protection Permit and Aquifer Water Quality Standards programs, which protect

groundwaters and aquifers. *See, e.g.*, A.R.S. §§ 49-203(A)(4), 223, 224(B). And other Amici States have their own permitting and water quality standards programs.[1]

SUMMARY OF ARGUMENT

The petition for rehearing en banc should be granted because the panel decision wrongly extends Clean Water Act ("CWA") jurisdiction to intrastate "point sources" that are hydrologically connected only through intrastate nonpoint sources, such as groundwaters, to navigable waters. The panel's decision usurps from state and local governments their traditional regulatory and management authority in

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[1] For example, pursuant to the Nevada Water Pollution Control Law, the Nevada Division of Environmental Protection issues discharge permits that define the quality of a permitted discharge deemed necessary to protect the waters of the State. *See* NRS 445A.300-700. Nevada's definition of waters of the State is broad and includes "all waters situated wholly or partly within or bordering upon [the] State, including but not limited to: (1) [a]ll streams, lakes, ponds, impounding reservoirs, marshes, water courses, waterways, wells, springs, irrigation systems and drainage systems; and (2) [a]ll bodies or accumulations of water, surface and underground, natural or artificial." NRS 445A.415. Further, NRS 445A.465 specifically prohibits the discharge of a pollutant without a permit. The Nevada Division of Environmental Protection has a long history of successfully overseeing this program. Accordingly, the Nevada Water Pollution Control Law would address the types of discharges contemplated while being protective of all waters of the State.

the sphere of intrastate land and water uses, and thus presents an issue of exceptional importance.

CWA point source jurisdiction is limited to intrastate point sources that themselves convey a pollutant into navigable waters because the governing statutory definition of "discharge of any pollutant" omits any reference to nonpoint sources, such as groundwaters, as a conveyance of a pollutant. Properly construed under the canon "expressio unius est exclusio alterius," this omission precludes CWA point source jurisdiction when pollutants are conveyed to navigable waters solely by groundwaters or other nonpoint sources.

In reaching a contrary conclusion, the panel decision circumvents Supreme Court precedent, conflicts with opinions from other circuits, and undermines a rule of national application on a question of exceptional importance in which there is an overriding need for uniformity.

ARGUMENT

The mistaken expansion of CWA point source jurisdiction embraced by the panel decision is understandable from a certain perspective—everyone wants a clean, safe and healthy environment.

But the federal government need not usurp state authority to achieve that outcome, and Congress intended no such complete occupation of the field. State and local governments have the plenary power to protect public health, safety, and welfare: this includes protecting intrastate groundwaters from point source discharges. As compared to any federal agency, state and local governments are closer to the problem sources and more responsive to the people. The CWA even authorizes states to form interstate compacts to furnish solutions to interstate problems. 33 U.S.C. § 1253(b). As discussed below, both the environment and the rule of law are best protected by respecting the statutory text, the congressional intent, and the principles of cooperative federalism embraced by the CWA.

I. THE PANEL DECISION INVOLVES A QUESTION OF EXCEPTIONAL IMPORTANCE BECAUSE IT CLASHES WITH OTHER CIRCUITS AND WOULD SWEEP AWAY TRADITIONAL STATE AND LOCAL AUTHORITY

"'It was said of the late Justice Story, that if a bucket of water were brought into his court with a corn cob floating in it, he would at once extend the admiralty jurisdiction of the United States over it.'" *Village of Oconomowoc Lake v. Dayton Hudson Corporation*, 24 F.3d 962, 965 (7th Cir. 1994). Courts should avoid adopting a similar

approach to CWA point source jurisdiction. Nevetheless, the panel held that CWA point source jurisdiction extends to a "point source" whenever a pollutant added to navigable waters in a more than de minimis amount is "fairly traceable" to a point source, regardless of how the pollutant traveled from the point source. Dkt. 65 18-19, 25.[2] The panel specifically ruled that a county-operated injection well, which was used for water reclamation and waste management, was required to secure federal National Pollutant Discharge Elimination System ("NPDES") permitting because pollutants traceable to the well reached the ocean by seeping through intermediating groundwaters. In other words, under the panel's decision, the jurisdictional element for liability under the CWA is satisfied whenever there is an indirect hydrological connection between a point source and navigable waters, regardless of intervening nonpoint sources, even if the intervening medium is groundwaters.[3]

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[2] For the sake of brevity, reference to "navigable waters" is used collectively to include both "navigable waters" and "waters of the contiguous zone or ocean." *See* 33 U.S.C. §1362(12)(A), (B).

[3] "It is basic science that ground water is widely diffused by saturation within the crevices of underground rocks and soil," and "[a]bsent exceptional proof of something akin to a mythical Styx-like subterranean river," "passive migration of pollutants" through

But neither admiralty nor CWA point source jurisdiction extends to every bucket of water (or well) that is hydrologically connected through inadvertent seepage to navigable waters, especially if that connection is through groundwaters. Contrary to the panel decision, other circuits have held that a point source must *itself* convey a pollutant into navigable waters to trigger CWA point source jurisdiction—*without* the pollutant travelling through nonpoint sources, such as groundwaters.[4] The Seventh Circuit, for example, has observed that, even if groundwaters were thought within the scope of federal

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groundwater is not a discharge from a point source. *26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth.*, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017).

[4] *Village of Oconomowoc Lake*, 24 F.3d at 965 (CWA does not assert "authority over groundwaters, just because these may be hydrologically connected with surface waters"); *see also Rice v. Harken Exploration Co.*, 250 F.3d 264, 272 (5th Cir. 2001) ("a generalized assertion that covered surface waters will eventually be affected by remote, gradual, natural seepage from the contaminated groundwater" was outside the scope of the Oil Pollution Act in order "to respect Congress's decision to leave the regulation of groundwater to the States"); *Cape Fear River Watch v. Duke Energy Progress*, 25 F. Supp. 3d 798, 810 (E.D.N.C. 2014) ("Congress did not intend for the CWA to extend federal regulatory authority over groundwater, regardless of whether that groundwater is eventually or somehow 'hydrologically connected' to navigable surface waters"); *see generally Catskill Mountains v. City of New York*, 273 F.3d 481, 493 (2d Cir. 2001) (point source "refers only to the proximate source from which the pollutant is directly introduced to the destination water body"); *Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 165, 175-76 (D.C. Cir. 1982) (affirming reasonableness of EPA interpretation that "the point source must *introduce* the pollutant into navigable water").

regulatory authority (an unsettled question), "the Clean Water Act does not attempt to assert national power to the fullest." *Village of Oconomowoc Lake*, 24 F.3d at 965. The circuit reasoned that Congress repeatedly refused to pass proposals to add groundwaters "to the scope of the Clean Water Act." *Id.* (citing *Exxon Corp. v. Train*, 554 F.2d 1310, 1325-29 (5th Cir.1977)). The Seventh Circuit further explained that there was a clear reason for Congress's refusal: *impracticality*. As stated by the Senate Committee on Public Works in 1972, Congress rejected proposals to add jurisdiction over groundwaters "[b]ecause the jurisdiction regarding groundwaters is so complex and varied from State to State." *Id.* at 965.

Congress was right. The panel decision threatens to create an unworkable regulatory environment by extending an onerous federal regulatory structure over what has been a traditional area of state responsibility. Whether and how pollutants seep through groundwaters into navigable waters from a point source is exceedingly difficult to observe and measure, much less predict, due to numerous factors including difficulty of access, temperature changes, chemical interactions, movement of the earth, tides, transpiration, evaporation,

groundwater withdrawals, vegetative conditions, atmospheric conditions, and surrounding surface and below-ground land uses. *See* T.C. Winter, et al, Ground Water and Surface Water: A Single Resource, U.S. Geological Survey Circular 1139 (1998). And yet, under the panel's reading of the CWA, unforeseeable criminal and civil liability could arise whenever any point source is shown *in hindsight* to have caused the addition of some pollution to any navigable waters through *even the most unpredictable, improbable and multistepped causal chain*. *See, e.g.*, 33 U.S.C. §§ 1319(c), (d), 1365(a).

The civil and criminal exposure threatened by the panel decision would haunt far more than traditional waste management facilities. Section 1362(6) defines "pollutant" broadly to include much more than traditional wastes.[5] Point sources that require NPDES permitting in Arizona alone could possibly jump more than *200,000%*—from the current ~150 permitted facilities to most (if not all) of the State's 35,382

[5] Even potable water can be considered a pollutant due to the residuals of the disinfection process. *See, e.g., W.R. Grace & Co. v. United States EPA*, 261 F.3d 330, 333 (3d Cir. 2001) (describing disinfection process for potable water as creating chloramines).

Class V Wells and potentially even an estimated 282,897 septic systems.[6]

If anything, a *multi-thousand percent increase* in the number of alleged mandatory NPDES permittees is a conservative estimate of the regulatory impact of the panel decision. The regulatory effort compelled by the panel decision would need to range to the entire network of ever changing, externally influenced underground capillaries and seeps that ultimately feed "navigable waters." *See* 33 U.S.C. § 1342(e)(3). It is hard to imagine *any* land or water use with any *potential* for runoff, spillage, or leakage (much less *any* water storage, transportation, recycling, or waste management activity) that would not have this *possible* or *eventual* hydrological connection to navigable waters, particularly if viewed in hindsight. Every fluid or semi-fluid discharge that is capable of seepage, runoff, spillage, leakage, or evaporation is likely hydrologically connected to navigable waters indirectly through

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[6] *Compare* "FY 2017 Non-Tribal Permits Detailed Percent Current Status," https://www.epa.gov/sites/production/files/2018-01/documents/final_fy17_eoy_non-tribal_backlog_report_card.pdf, *with* "National Underground Injection Control Inventory-Federal Fiscal Year 2016," https://www.epa.gov/sites/production/files/2017-06/documents/state_fy_16_inventory_format_508.pdf, and "Septic Stats: Arizona," http://www.nesc.wvu.edu/septic_idb/arizona.htm (all last visited 3.1.2018).

nonpoint sources, such as groundwaters. And almost every land or water use is capable of generating such discharges. As quipped in *Village of Oconomowoc Lake*, even a bucket of water can be hydrologically connected to navigable waters. 24 F.3d at 965.

In short, extending CWA liability to any point source that is connected by groundwaters, or other nonpoint sources, to navigable waters threatens to force Arizona (and other Amici States that have accepted primacy) to undertake a massive expansion of NPDES permitting in areas the CWA was never intended to reach, as the far more reasonable approach of other circuits has confirmed.

II. THE PANEL REACHED ITS SWEEPING OUTCOME BY DISREGARDING A TRADITIONAL CANON OF CONSTRUCTION AND THE COOPERATIVE FEDERALISM EMBODIED IN THE CWA

En banc rehearing would allow for correction of the panel's error through a straightforward application of a basic canon of statutory interpretation with due consideration for principles of cooperative federalism.

A. The Panel Disregarded The Interpretative Canon "Expressio Unius Est Exclusio Alterius"

Under the interpretative canon "expressio unius exclusio alterius," the omission of a relevant term from a statutory provision is presumed

to exclude intentionally what has been omitted. *Lamie v. United States Trustee*, 540 U.S. 526, 537 (2004); *U.S. v. Vonn*, 535 U.S. 55, 64 (2002). This canon compels the conclusion that CWA point source jurisdiction cannot be triggered, such that a NPDES permit becomes necessary, unless a point source is *the* conveyance that adds pollution to navigable waters—to the exclusion of nonpoint sources, such as groundwaters.

The jurisdictional reach of the CWA is established by the meaning of "discharge of any pollutant" in the Act's declaration that "the discharge of any pollutant by any person shall be unlawful." 33 U.S.C. § 1311(a). The definition of "discharge of a pollutant" (and "discharge of pollutants") is "any addition of any pollutant to navigable waters [or waters of the contiguous zone or the ocean] from any point source [other than a vessel or other floating craft]." *Id.* § 1362(12)(A), (B). However, the reference in this definition to "any point source" is emphatically *not* a reference to a mere source for a pollutant. A "point source" is expressly defined as *more* than a source; it is defined as a type of "conveyance" that is "discernible, confined, and discrete." 33 U.S.C. § 1362(14). A conveyance is a "means or way of conveying," it is *not*

merely a "source."[7] Thus, in the definition of "discharge of a pollutant," Congress chose to reference "any point source" as the *only* designated "means or way of conveying" a pollutant into navigable waters.

Congress's stark omission of any reference to nonpoint sources, such as groundwaters, as a "means or way of conveying" a pollutant in 33 U.S.C. § 1362(12) should not be ignored. Congress repeatedly rejected amendments that would have extended the CWA to groundwater. S. Rep. No. 92-414, at 3735-3739 (1971). Furthermore, whether the conveyance of a pollutant is a point or nonpoint source is highly relevant to the CWA. Numerous provisions of the CWA distinguish between point and nonpoint sources. *See, e.g.*, 33 U.S.C. §§ 1251, 1255, 1270, 1281, 1285, 1311, 1314, 1319, 1324, 1330, 1346. Congress was clearly aware that a nonpoint source, such as groundwaters, could be a relevant conveyance of pollution to navigable waters. Yet, Congress made no mention of any nonpoint source in the

[7] *Conveyance*, Webster's New International Dictionary of the English Language Unabridged (3rd ed. 1993) ("1: the action of conveying . . . b: carrying, transporting, transportation. . . 2: a means or way of conveying . . . c: a channel or passage for conduction or transmission . . . d: a means of carrying or transporting something"); *see also conveyance*, Webster's New International Dictionary of the English Language Unabridged (2nd ed. 1950).

definition of "discharge of a pollutant," which controls the reach of CWA point source jurisdiction. *Compare* 33 U.S.C. § 1311(a) *with* § 1362(12)(A), (B). This omission should be read as intentional.

Given the omission of any reference to any nonpoint source in the governing definitions, a straightforward application of the "expressio unius exclusio alterius" canon confirms that CWA point source jurisdiction (and NPDES permitting) applies only to point sources that themselves convey pollution into navigable waters, to the exclusion of any nonpoint source, such as groundwaters. *See Nat'l R.R. Passenger Corp. v. Nat'l Ass'n of R.R. Passengers*, 414 U.S. 453, 458 (1974) ("'When a statute limits a thing to be done in a particular mode, it includes the negative of any other mode.' This principle of statutory construction reflects an ancient maxim—*expressio unius est exclusio alterius*.").

To sustain CWA point source jurisdiction, a "point source" must be *the* "conveyance" of the pollutant into navigable waters, not merely the source, because *it is the only conveyance mentioned*. This natural interpretation, which has been adopted by other circuits as discussed above, defeats the claim that CWA point source jurisdiction can be

sustained by a mere indirect hydrological connection between a point source and navigable waters through nonpoint sources, such as groundwaters. *See also Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Dabit*, 547 U.S. 71, 87–88 (2006) ("The existence of these carve-outs both evinces congressional sensitivity to state prerogatives in this field and makes it inappropriate for courts to create additional, implied exceptions.").

B. The Panel Disregarded The Cooperative Federalism Principles Embodied In The CWA

The CWA is a quintessential example of "cooperative federalism." *Catskill Mountains Chapter of Trout Unlimited, Inc. v. EPA*, 846 F.3d 492, 514 (2nd Cir. 2017) ("Act largely preserves states' traditional authority over water allocation and use"). The CWA emphasizes that Congress had the intention to accommodate the traditional and "primary" role of state and local government in the field of environmental regulation. 33 U.S.C. §1251(b). The CWA also repeatedly emphasizes that federal agencies are to act in "cooperation" with the States. 33 U.S.C. §§ 1251(g), 1252(a).

When it comes to state authority to "allocate quantities of water," such as in the Arizona Recharge Program, the CWA includes a

powerfully deferential savings clause to bar federal regulation from interfering with state primacy. 33 U.S.C. § 1251(g).[8] And this savings clause is reinforced by 33 U.S.C. §1370, which states: "except as expressly provided in this chapter, nothing in this chapter shall . . . be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States."

The panel decision's indirect hydrological connection theory of CWA point source jurisdiction is inconsistent with these manifestations of cooperative federalism in the CWA, which even the EPA recognizes. *Definition of "Waters of the United States"—Recodification of Pre-Existing Rules*, 82 FR 34899, 34900 (July 27, 2017) (identifying policy goals of CWA as "(a) To restore and maintain the nation's waters; and (b) to preserve the States' primary responsibility and right to prevent, reduce, and eliminate pollution"). It disregards the traditional

[8] As part of its Recharge Program, Arizona currently oversees and regulates a vast array of groundwater storage facilities, many, if not most, of which are not currently regarded as subject to NPDES permitting. *Underground Water Storage, Savings and Replenishment*, available at https://new.azwater.gov/recharge (last visited 2.26.2018). Planning is underway for many more such facilities on the assumption that NPDES permitting is not necessary. *USF Permit Application Online Noticing*, available at https://new.azwater.gov/recharge/permitted-facilities (last visited 2.26.2018).

management and regulatory authority of states over local land and water uses. *FERC v. Mississippi*, 456 U.S. 742, 767 n.30 (1982) (management and regulation of local lands and waters "is perhaps the quintessential state activity"). And, by threatening a nearly limitless expansion of preemptive federal jurisdiction, the panel decision wrongly circumvents the Supreme Court's efforts to moderate similarly limitless interpretations of "waters of the United States" in *Rapanos v. United States*, 547 U.S. 715, 779, 786 (2006) (Scalia, J., concurring; Kennedy, J., plurality), and *SWANCC v. U.S. Army Corps of Engineers*, 531 U.S. 159, 172-74 (2001).[9] For these reasons, the panel's indirect hydrological connection theory of CWA point source jurisdiction, which lacks any clear and manifest textual support in the Act, should be rejected in

[9] The doctrine of constitutional avoidance requires courts to construe statutes, "if fairly possible, so as to avoid not only the conclusion that it is unconstitutional, but also grave doubts upon that score." *United States v. Jin Fuey Moy*, 241 U.S. 394, 401 (1916). A mere indirect hydrological connection between a point source and navigable waters might not be a sufficient "jurisdictional element" for Commerce Clause authority under *U.S. v. Morrison*, 529 U.S. 598 (2000), and *U.S. v. Lopez*, 514 U.S. 549 (1995). The panel's theory is also constitutionally questionable because it may effectively authorize federal permitting to supersede nearly all state authority over intrastate land and water uses. *SWANCC*, 531 U.S. at 172-74 ("significant constitutional questions" are raised by "permitting federal encroachment upon a traditional state power"); *see also Bond v. U.S.*, 564 U.S. 211, 222 (2011) (observing our system of dual sovereignty denies "any one government complete jurisdiction over all the concerns of public life").

favor of the interpretation that a point source must *itself* be the conveyance of pollutants into navigable waters.[10]

CONCLUSION

For the forgoing reasons, the undersigned Amici States request that the petition for en banc rehearing be granted.

March 12, 2018

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[10] A federal statute should not be construed to preempt state laws or traditional sovereign interests unless such intent is evidenced by a clear and manifest statement from Congress. *Wyeth v. Levine*, 555 U.S. 555, 565 (2009); *Gonzales v. Oregon*, 546 U.S. 243, 255, 270-72 (2006). This doctrine is applicable with special force in the context of cooperative federalism. *New York State Dep't of Social Services v. Dublino*, 413 U.S. 405, 421 (1973).

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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(a)(7)(C), the undersigned hereby certifies that this brief complies with the type-volume limitations of Fed. R. App. P. 29(b) as modified by Fed. R. App. P. 29-2(c)(2).

1. Exclusive of the exempted portions of the brief, as provided in Fed. R. App. P. 32(a)(7)(B)(iii) and (f), this brief is 3464 words.

2. This brief has been prepared in a proportionally spaced typeface using Microsoft Word 2010 in 14-point Century type.

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CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of March, 2018, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Ninth Circuit using the appellate CM/ECF system. Counsel for all parties to the case are registered CM/ECF users and will be served by the appellate CM/ECF system.

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No. 18-5115

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

KENTUCKY UTILITIES CO.,
Defendant-Appellee,

v.

KENTUCKY WATERWAYS ALLIANCE;
SIERRA CLUB,
Plaintiffs-Appellants.

On Appeal from the United States District Court
for the Eastern District of Kentucky, Central Division
Case No. 5:17-cv-00292-DCR

BRIEF OF THE STATE OF ALABAMA, SIXTEEN OTHER STATES, AND THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AS *AMICI CURIAE* IN IN SUPPORT OF APPELLEE KENTUCKY UTILITIES CO.

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CERTIFICATE OF INTERESTED PERSONS

To the best of counsel's knowledge, except for the following, all parties, intervenors and amici appearing before the district court and in this Court are listed in the Brief for Appellant:

> State of Alabama, Arkansas, Georgia, Indiana, Kansas, Kentucky, Louisiana, Missouri, Montana, Nebraska, Oklahoma, South Carolina, Texas, Utah, West Virginia, Wisconsin, Wyoming, and the Mississippi Department of Environmental Quality – amici curiae

Counsel for the Appellant further certify that no additional publicly traded company or corporation has an interest in the outcome of this appeal.

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INTEREST OF *AMICUS CURIAE*

The States of Alabama, Arkansas, Georgia, Indiana, Kansas, Kentucky, Louisiana, Missouri, Montana, Nebraska, Oklahoma, South Carolina, Texas, Utah, West Virginia, Wisconsin, Wyoming, and the Mississippi Department of Environmental Quality file this brief under Rule 29(a) of the Federal Rules of Appellate Procedure.[1]

The *amici* States have a substantial interest in this case because the outcome sought by Kentucky Waterways Alliance and the Sierra Club would create an unprecedented extension of federal jurisdiction under the Clean Water Act ("CWA") and the National Pollutant Discharge Elimination System ("NPDES"), and expand federal regulation to waters historically regulated by the States. That result is contrary to both the text of the CWA and the cooperative federalism scheme on which the CWA is premised. For these reasons, the *amici* States have already submitted a brief in support of the Tennessee Valley Authority in the pending appeal *Tennessee Clean Water Network et al. v. Tennessee Valley Authority*, No. 17-6155 (6th Cir. *appeal docketed* Oct. 3, 2017), which also presents the question whether CWA jurisdiction extends to hydrologically connected groundwater.

[1] A State "may file an amicus-curiae brief without consent of the parties or leave of court." Fed. R. App. P. 29(a).

The *amici* States appreciate the importance of protecting state and national waters, and have long exercised their traditional authority to regulate in this sphere. *Amici* believe, however, that judicially expanding the scope of the NPDES regime to hydrologically connected groundwaters would violate the text of the statute and erode the States' role as the principal protectors of local water resources. Moreover, *amici* are concerned that the result of this federal jurisdictional creep will not be more aggressive environmental cleanup actions, but rather an unwarranted expansion of the NPDES program—with its costly and time-consuming requirements—to scores of new lands and water sources that the program was not designed to address. Navigating these complexities will increase compliance costs and administrative burdens on States and their agencies without materially improving environmental quality. These burdens could divert resources from existing state enforcement efforts and emergency clean-up measures, while opening the States to the threat of liability from new citizen suits seeking enforcement of new duties that are nowhere to be found in the text of the CWA.

SUMMARY OF ARGUMENT

The CWA strikes a balance between state and federal environmental enforcement in a cooperative scheme designed to protect the nation's waters. The CWA prohibits discharges of pollutants from "point sources" into waters of the United States. But Congress expressly left regulation of groundwater pollution to

the States. The pollution at issue here occurred on intrastate land, with some pollutants—eventually and indirectly—allegedly making their way to waters of the United States by seeping into the ground from coal ash ponds and migrating through the groundwater. The CWA's prohibition on pollution discharges without an NPDES permit does not apply to this form of groundwater pollution.

Nevertheless, Plaintiffs urge this Court to adopt a "hydrological connection" theory of CWA jurisdiction. The effect of this theory is to create an end-run around the jurisdictional limitations embodied in the text of the CWA. The hydrological connection theory is unsupported by the text and would lead to a limitless expansion of federal jurisdiction, effectively erasing the distinctions between state and federal authority that are incorporated into the CWA's very structure.

Further, expanding the CWA's scope to encompass hydrologically connected groundwaters would introduce unwarranted complications and complexities for States attempting to administer new and unanticipated regulatory duties. The uncertainties inherent in this approach would make it impossible for States to regulate with certainty in this area, and threaten to drain resources from other vital environmental and water-quality programs. Finally, there is no need for this dramatic expansion of CWA jurisdiction. Both the federal government and the States already have broad and sufficient authority to address threats to groundwater.

This Court should not clear the way for countless citizen suits calculated to second-guess State environmental remedial decisions, like this one. Instead, it should follow the clear text of the CWA and affirm the lower court's decision.

ARGUMENT

I. The Hydrological Connection Theory of CWA Jurisdiction Is Inconsistent with the Text of The CWA and Cooperative Federalism Principles

The Tenth Amendment reserves all powers not delegated to the United States by the Constitution to "the States respectively, or to the people." U.S. Const. amend. X. The "ownership of submerged lands, and the accompanying power to control navigation, fishing, and other public uses of water 'is an essential attribute of sovereignty.'" *Tarrant Regional Water Dist. v. Hermann*, 133 S.Ct. 2120, 2132 (2013) (quoting *United States v. Alaska*, 521 U.S. 1, 5 (1997)). Indeed, the management of local lands and waters "is perhaps the quintessential state activity." *FERC v. Mississippi*, 456 U.S. 742, 767, n. 20 (1982). To secure the reserved power of the States over local land and water resources, the Supreme Court has required a clear statement of congressional intent to interfere with the States' "traditional and primary power of land and water use" when assessing the validity of expansive interpretations of the CWA. *Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 174 (2001) (hereinafter "*SWANCC*").

But there is nothing resembling a clear statement of Congressional intent to subject regulated parties to liability for groundwater discharges present in the text of the CWA. Instead, the text of the Act unambiguously precludes liability for such discharges, and affirmatively indicates that Congress chose to leave regulation of groundwater, including groundwater that is "hydrologically connected" to "navigable waters" within the regulatory jurisdiction of the States. Accordingly, the lower court's decision below must be affirmed.

The CWA generally prohibits "the discharge of any pollutant" from a "point source" to "navigable waters," without an NPDES permit. *See* 33 U.S.C. §§ 1311(a); 1342; 1362(12). The term "discharge of any pollutant" is defined as "any addition of any pollutant *to* navigable waters *from* any point source." 33 U.S.C. § 1362(12) (emphasis added). This prohibition could apply to groundwater discharges only if (1) hydrologically connected groundwater itself constitutes "navigable waters" under the CWA, (2) groundwater constitutes a "point source," such that a discharge from hydrologically connected groundwater into navigable waters would constitute a discharge from a "point source," or (3) the discharge of a pollutant from a point source that travels through groundwater to navigable water in itself constitutes the addition of a pollutant to navigable waters from a point source. None of these theories are plausible.

First, it is beyond dispute that groundwater does not in itself constitute "navigable waters." The CWA's definition of navigable waters—"waters of the United States, including the territorial seas"—excludes groundwater. 33 U.S.C. § 1362(7). Federal regulations likewise exclude groundwater from navigable waters. 40 C.F.R. §§ 122.2, 230.3(o); 33 C.F.R. § 328.3(a). *See also* 79 FR 22188, 22218 (Apr. 21, 2014) ("The agencies have never interpreted 'waters of the United States' to include groundwater").

Second, groundwater itself cannot constitute a "point source" within the meaning of the Act. Under the CWA, a "point source" is "any discernible, confined and discrete conveyance," which includes (but is not limited to) "any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). But groundwater is neither discernable, confined, nor discrete. "It is basic science that ground water is widely diffused by saturation within the crevices of underground rocks and soil," and "[a]bsent exceptional proof of something akin to a mythical Styx-like subterranean river," "passive migration of pollutants" through groundwater is not a discharge from a point source. *26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth.*, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017). Accordingly, the discharge of a pollutant from hydrologically connected

groundwater into navigable waters cannot constitute an "addition of any pollutant *to* navigable waters *from* any point source." 33 U.S.C. § 1362(12) (emphasis added).

Third, a discharge that migrates through groundwater from a point source to navigable water is not an addition of a pollutant *to* navigable waters *from* a point source, as the plain text of the statute requires. It is an addition of a pollutant *to* groundwater *from* a point source. Thus, the addition of pollutants to navigable waters through hydrologically connected groundwater does not constitute an "addition of any pollutant to navigable waters from any point source," as the Plaintiffs' hydrological connection theory requires. 33 U.S.C. § 1362(12). The possibility of a "hydrological connection" between groundwater and navigable waters is not "a sufficient ground of regulation." *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994) ("the statute Congress enacted excludes *some* waters, and ground waters are a logical candidate.") (emphasis in original).

While the CWA does prohibit indirect discharges into navigable waters, those discharges must proceed from one distinct point source (*e.g.* a pipe) into another (*e.g.* a drainage ditch), which is designed or intended to channel water into navigable waters. *See, e.g.*, *Rapanos v. United States*, 547 U.S. 715, 743 (2006) (plurality opinion) (collecting cases). As a result, migration of pollutants through groundwater

is not covered by the CWA's prohibition on indirect discharges because groundwater does not constitute a "point source" within the meaning of the statute.

In short, the words "to" and "from" in the text of the CWA's definition of the term "discharge of [a] pollutant" unambiguously limit the statute's coverage to conveyance of pollutants (a) from a point source directly into navigable waters, or (b) from a point source through another point source into navigable waters. The Plaintiffs' interpretation of the CWA permits an end-run around the jurisdictional limitations embedded in the CWA's plain text.

Even if Plaintiffs were correct that the statutory definition of "discharge of any pollutant" as the "addition of any pollutant *to* navigable waters *from* any point source" can be read to extend CWA jurisdiction to discharges carried to navigable waters through intermediaries that are not themselves point sources, this Court would still be required to reject the hydrological connection theory. 33 U.S.C. § 1362(12) (emphasis added). Given the ubiquitous presence of groundwater in state lands, Plaintiffs' expansive reading of the CWA would authorize the federal government "to function as a *de facto* regulator of immense stretches of intrastate land." *Rapanos*, 547 U.S. at 738 (plurality opinion) (citation omitted). Such "an unprecedented intrusion into traditional state authority" requires a "clear and manifest statement from Congress," *id.*, because authority over submerged lands and

groundwater is an inherent incident of state sovereignty. *See Tarrant Regional Water Dist.*, 133 S.Ct. at 2132.

"The phrase 'waters of the United States' hardly qualifies." *Id.* The same is true of the statutory definition of "discharge of any pollutant" as the "addition of any pollutant *to* navigable waters *from* any point source." 33 U.S.C. § 1362(12) (emphasis added). This language cannot be said to clearly extend CWA jurisdiction to discharges that travel through non-point source intermediaries such as groundwater, because at minimum, it can just as easily be read to require that a discharge travel immediately *from* a point source *to* navigable waters. Thus, because the CWA contains no clear statement of Congressional intent to extend federal jurisdiction to discharges carried to navigable waters by groundwater, this Court should recognize the States' reserved power over intrastate water resources and interpret the CWA to leave the sovereign authority of the States undiminished.

Indeed, far from authorizing the Plaintiffs' expansive interpretation of CWA jurisdiction, Congress's limitation of the Act's scope to "waters of the United States" reflects a clear intention to respect the States' traditional authority over local land and water use. 33 U.S.C. § 1362(7). Indeed, Congress expressly stated its purpose to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution . . . of land and water resources" in the text of the CWA. 33 U.S.C. § 1251(b). This delineation of responsibilities between

the States and the federal government is a classic exercise in cooperative federalism: The federal government relies on experts at the state level to make the primary judgments about how best to ensure local water quality and to monitor compliance with those requirements. Expanding the scope of the CWA beyond its precise textual limits would upend this cooperative federalism scheme and "alter[ ] the federal-state framework by permitting federal encroachment upon a traditional state power" and raise "significant constitutional questions" about the validity of the CWA. *SWANCC*, 531 U.S. at 172-74.

"Congress did not intend for the CWA to extend federal regulatory authority over groundwater, regardless of whether that ground water is eventually or somehow 'hydrologically connected' to navigable surface waters." *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, 25 F. Supp. 3d 798, 810 (E.D.N.C. 2014). The CWA's legislative history confirms that Congress extensively considered whether to extend CWA jurisdiction to groundwater and determined that groundwater regulation should be left to the States. *See Exxon Corp. v. Train*, 554 F.2d 1310, 1325-29 (5th Cir. 1977). Although the Senate Committee on Public Works expressly recognized "the essential link between ground and surface waters and the artificial nature of any distinction," it expressly rejected, after "heated debate," an amendment that would have extended the CWA to groundwater. *Id.* at 1325, 27-29 (*quoting* S. Rep. No. 414, 92d Cong., 1st Sess. 73 (1971)). Instead, Congress determined that

regulation of groundwater should be left to the States, and this determination is reflected in the structure of the statute. *Id.* at 1325-29; *see also Kelley ex rel. Mich. v. United States*, 618 F. Supp. 1103, 1107 (W.D. Mich. 1985).

As a consequence of the distribution of federal and state responsibilities present on the face of the statute, EPA has also recognized that safeguarding state authority to manage lands and waters is one of the primary goals in administering the CWA. The EPA has emphasized that the CWA "commands the [EPA] to pursue two policy goals simultaneously: (a) To restore and maintain the nation's waters; and (b) *to preserve the States' primary responsibility and right to prevent, reduce, and eliminate pollution*." 82 Fed. Reg. at 34900 (emphasis added).

The position advocated by Plaintiffs would fundamentally alter this cooperative federalism regime. Instead of relying on States to regulate groundwater pollution, the hydrological connection approach would dramatically expand the scope of the NPDES permitting regime and the States' obligations under it. Respecting the balance of roles and policy goals that Congress adopted in the CWA is the best way to ensure the existence of strong environmental protection programs at both the state and federal levels. *See, e.g., Catskill Mountains Ch. of Trout Unlimited, Inc. v. EPA*, 846 F.3d 492, 514 (2d Cir. 2017) (the CWA "balances a welter of . . . goals, establishing a complicated scheme of federal regulation employing both federal and state implementation and supplemental state regulation.

In this regard, the Act largely preserves states' traditional authority over water allocation and use") (citation omitted).

Finally, the hydrological connection theory is infinitely elastic and would mandate regulation of any land capable of absorbing water—essentially, any land within a State. Groundwater naturally migrates downhill, and because it is more likely than not that groundwater will, at some point, connect with navigable waters, reading a hydrological connection gloss onto the CWA could lead to a limitless expansion of federal power by requiring NPDES permits wherever groundwater eventually connects with navigable waters. In *Rapanos*, a plurality of the Supreme Court emphasized that the "plain language of the [CWA] simply does not authorize [a] 'Land is Waters' approach to federal jurisdiction." 547 U.S. at 734 (opinion of Scalia, J.). The same logic requires the exclusion of groundwater from the scope of the CWA. Justice Kennedy's concurring opinion emphasized that wetlands adjacent to navigable waters fall under the CWA only if there is a "significant nexus" between them. *Id.* at 767 (Kennedy, J., concurring in the judgment). Both approaches presuppose a meaningful statutory distinction between waters that are—and are not—subject to the CWA. It is hard to see what would remain of this distinction if CWA jurisdiction were held to extend to any water that is hydrologically connected to navigable waters.

It is true that some courts have attempted to cabin the reach of the hydrological connection theory by requiring a "hydrologic connection between the source of the pollutants and navigable waters" that "is direct, immediate, and can generally be traced." *Tennessee Clean Water Network v. Tennessee Valley Authority*, 273 F. Supp. 3d 775, 827 (M.D. Tenn. 2017); *see also Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, No. 17-1640, 2018 WL 1748154 (4th Cir. Apr. 12, 2018); *Haw. Wildlife Fund v. Cty. of Maui*, 886 F.3d 737 (9th Cir. 2018). But this caveat has no grounding in the text of the CWA, and leaves all the critical questions unanswered. It does not begin to articulate what makes it the case that a hydrological connection is sufficiently "direct" and "immediate" for the CWA's prohibition on the discharge of pollutants to apply. Given the uncertainties inherent in such an open-textured and undefined standard, it is likely that regulated parties will feel compelled to seek an NPDES permit any time there is any risk that the use of their land will potentially result in the migration of pollutants through groundwater to navigable waters. It is highly unlikely that Congress intended these extreme results, and the text of the statute supplies no evidence that this is the case. Thus, this Court should affirm the lower court's decision.

II. The Hydrological Connection Theory Dramatically Increases State Regulatory and Compliance Costs and Creates New, Unanticipated Costs for Regulated Parties.

There is good reason not to upset the CWA's careful balance between state and federal powers: Extending the NPDES program to include discharges of pollutants to soils that are merely "hydrologically connected" to navigable waters would entail myriad practical difficulties, require States to take on significant new regulatory costs at the expense of existing environmental protection programs, and multiply the confusion that has long plagued CWA enforcement for regulators and citizens alike.

A. The Hydrological Connection Theory Would Require an Impracticable Expansion of State NPDES Permitting Programs

State NPDES programs do not currently offer permits for groundwater pollution, nor are these programs designed to do so. Expanding CWA liability to groundwater pollution would require a dramatic expansion of state NPDES programs beyond discharges from discrete conveyances to the entire network of underground capillaries that ultimately lead to navigable waters—or else put States at risk of having the EPA revoke their authority to issue NPDES permits altogether. *See* 33 U.S.C. § 1342(c)(3). But the States cannot complete such a novel NPDES permitting task with any certainty, and certainly not without taking on considerable and unjustifiable costs.

NPDES permits issued by authorized state agencies contain precise discharge limits from specific point sources into covered water. Compliance with the terms of a permit is the prerequisite for avoiding liability. *See, e.g.*, 33 U.S.C. §§ 1311(a), 1342. But the degree of precision necessary to draft permits with clear compliance requirements would be nearly impossible to replicate with respect to groundwater discharges. It is one thing to issue a meaningful permit regulating discharges from a pipe into navigable waters. But how would a state agency issue a permit for a flow, seep, or fissure, as the hydrological connection theory requires? As pollutants migrate through state lands, would a permit need to be constantly amended? Where would the monitoring outfalls be placed along the groundwater's route to ensure compliance, and how many would be required to account for the full depth and breadth of seepage as pollutants migrate through the earth?

Groundwater may or may not seep through many feet of soil and take multiple directions before ultimately reaching surface water, and the trajectory and speed of groundwater flow depends on geography and gravity, not design. These factors would make it extremely difficult to draft a permit with precise discharge parameters or monitor compliance. At minimum, States would be required (at great cost) to undertake significant environmental impact studies into the many newly covered sources of pollution in order to develop data sufficient to regulate with any degree of precision, coherence, and conformity with established scientific principles.

The struggle to regulate this expanded realm of CWA permitting would place an untenable strain on the environmental protection resources of the States. At present, the time and costs for States to administer NPDES permitting programs and otherwise satisfy the requirements of the CWA already require an estimated $83 million in annual labor costs and 1.8 million hours per year. *See* EPA ICR Supporting Statement, Information Collection Request for National Pollutant Discharge Elimination System (NPDES) Program (Renewal), OMB Control No. 2040-0004, EPA ICR No. 0229.22 at 23 tbl. 12.1 (Sept. 2017). The broad expansion of NDPES programs mandated by the extension of CWA jurisdiction to groundwater could cause these costs to skyrocket.

Even before processing the hundreds or thousands of new permitting applications States are likely to receive, States might be required to establish water quality standards ("WQS") for groundwater throughout their territory based on its potential hydrological connection to navigable waters. Currently, States are required to establish WQS for each body of water that falls under the definition of "waters of the United States." *See* 33 U.S.C. §§ 1311(b)(1)(C), 1313(e)(3)(A); 40 C.F.R. §§ 130.3, 131.3(i), 131.4(a). But if a hydrological connection is sufficient to trigger CWA liability for groundwater discharges, States will potentially be required to expand their WQS standards as well and study those "waters" to determine whether current standards should apply, or whether new WQS standards should be issued.

See 33 U.S.C. § 1313(c)(4). States then have a continuing duty to revise their WQS as environmental conditions change, 33 U.S.C. § 1313(c)(3), and must submit biennial water quality reports to the EPA, 33 U.S.C. § 1315(b)(1)(A)-(B). If these duties were expanded to encompass potentially all of a State's groundwater, state compliance burdens could rise exponentially.

Ultimately, the hydrological connection theory of CWA jurisdiction could require States to devote astronomical resources from already scarce budgets to administer an accurate and timely NPDES permitting regime that extends to all discharges into groundwater with a hydrological connection to navigable waters. This would not only be expensive in its own right—it would also carry a significant opportunity cost, as States could be forced to divert resources away from other state programs that, as discussed below, already protect state waters from groundwater pollution. *See infra* Part III.B.

B. The Hydrological Connection Theory Would Impose New and Increased Compliance Costs on Regulated Parties

The difficulties of administering the hydrological connection theory of CWA jurisdiction would also dramatically increase compliance costs for regulated parties seeking to shield themselves from liability and further complicate an already thorny and uncertain area of law.

As is, the "systemic consequences" of the CWA can be "crushing" "to landowners for even inadvertent violations." *Hawkes*, 136 S.Ct. at 1816 (Kennedy,

J., concurring). The CWA's reach is "notoriously unclear," and "[a]ny piece of land that is wet at least part of the year is in danger of being classified as [navigable waters]." *Sackett v. EPA*, 566 U.S. 120, 132 (2012) (Alito, J., concurring). Adopting the hydrological connection theory would go even further, making it likely that planned or accidental discharges onto any piece of land could trigger liability under the CWA. Unlike discharges into a ditch, tunnel, or similarly discrete conveyance that leads to navigable waters, regulated parties do not have direct control over where, how long, and how far a discharge into groundwater will disperse. Thus, it would be extremely difficult for covered parties to take precautions to ensure that they meet prescribed NPDES permitting requirements for groundwater discharges. The hydrological connection theory would put States in the untenable position of administering an unwieldy and time-consuming permitting program that may prove challenging for even the most diligent parties to meet.

Given that essentially any groundwater may eventually migrate to navigable waters, individuals and companies will likely find it prudent to seek NPDES permits for essentially every discharge that might find its way into groundwater. This would result in the imposition of immense compliance costs on regulated parties. As the Supreme Court has recently emphasized, the NPDES permitting process is "arduous, expensive, and long." *U.S. Army Corps of Engineers v. Hawkes Co.*, 136 S.Ct. 1807, 1815 (2016). Permits issued by the Army Corps of Engineers for more complex

regimes—which may be more akin to the type of new regulated sources that would be covered by the Plaintiffs' theory—can involve even greater costs and waits. There, the process to obtain an "individual" permit can take "788 days and $271,596," and even "more readily available 'general' permits," take "313 days and $28,915 to complete" on average. *Id.* at 1812. Here, where individuals and businesses may be required to seek permits for discharges into even indisputably non-navigable groundwater, the aggregate compliance costs imposed on regulated parties could skyrocket.

Finally, widespread adoption of the hydrological connection theory would dramatically increase the number of parties regulated by the CWA. The implications of the Plaintiffs' theory would radiate far beyond the parties in this appeal and encompass many new sources of nonpoint source pollution that have never been understood to fall within the coverage of the CWA. States would likely be required to permit and monitor all of them. For instance, personal septic tanks typically discharge pollutants into groundwater, but their owners have not historically had to apply for NPDES permits. But under the Plaintiffs' theory, individual owners would be required to apply for a permit whenever the groundwater surrounding a septic tank is hydrologically connected to navigable waters. The potential scale of these new burdens is massive. The EPA estimates that 25% of American homes use septic systems that discharge more than 4 billion gallons of wastewater into the soil every

day.[2] And the concern that septic tanks could become a new source of CWA litigation is not merely speculative: the EPA has already received complaints arguing that States should be required to include septic tanks in their NPDES programs.[3]

Similarly, owners of large parking lots could find themselves subject to CWA citizen suits. Storm water mixes with petroleum products discharged by cars parked on pavement, and the runoff may make its way into ditches and surrounding soil before seeping into the groundwater. The same logic would extend CWA jurisdiction to government agencies and municipalities that own stretches of roads. As with personal septic tanks, storm water runoff has attracted attention as a potential source of NPDES liability under the CWA.[4] The same analysis could apply to untold other sources of potential liability, including accident sites where a ruptured fuel tank causes a leak into groundwater, irrigation systems, underground storage tanks that spring a leak, and more.

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[2] *See* Envtl. Prot. Agency, *A Homeowner's Guide to Septic Systems* 5 (2005), *available at* https://ww3/epa/gov.npdes/pubs/jomeowner_guide_long.pdf.

[3] Envtl. Prot. Agency, *Initial Results of a Review of the National Pollutant Discharge Elimination System Program in the State of Minnesota*, at 5 (May 2013), *available at* https://www.epa.gov/sits/production/files/2017-04/documents/mn_petition_report_may-03-2013updated.pdf (alleging in part that Minnesota failed to establish and enforce an effective NPDES permitting program for over 55,000 septic systems).

[4] *See* Petition, Am. Rivers et al., Petition for a Determination that Stormwater Discharges from Commercial, Industrial, and Institutional Sites Contribute to Water Quality Standards Violation and Require Clean Water Act Permits (July 10, 2013), *available at* https://www.clf.org/wp-content/uploads/2013/07/RDA-Petition-WQS-Violations-REGION-I-FINAL-7-13.pdf.

In sum, adoption of the hydrological connection theory would dramatically increase CWA and NPDES compliance costs for both individuals and businesses, while saddling a host of new parties with novel regulatory burdens. As a result, this Court should affirm the lower court's decision rejecting this theory.

III. Extending the CWA's Scope Is Unnecessary to Address Groundwater Pollution

Beyond the heavy costs of expanding the NPDES permitting regime to include discharges into groundwater, this Court should affirm the district court's decision because there is no need to adopt the hydrological connection theory to ensure that groundwaters are adequately protected from pollution. The NPDES structure is ill-suited to regulate discharges into groundwater, as explained above, but there are numerous federal and state programs that are better tailored to address groundwater pollution. These existing laws and programs render the extension of CWA jurisdiction to hydrologically connected groundwater unnecessary. *See Catskill Mountains*, 846 F.3d at 529 (finding narrower interpretation of CWA reasonable in part because "several alternatives could regulate pollution . . . even in the absence of an NPDES permitting scheme").

A. Other Federal Statutes Provide Alternative Methods of Addressing Groundwater Pollution

There are already federal statutes in place that regulate the migration of pollutants through groundwater. To take one example, the federal government may

file a lawsuit under the Resource Conservation and Recovery Act ("RCRA") against "any person" when there is evidence that any handling or disposal of solid or hazardous waste, past or present, "may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6973(2). Congress designed RCRA to deal with situations in which "regulatory schemes break down or have been circumvented" and "expressly intended that this and other language of the Act [would] close loopholes in environmental protection." *United States v. Waste Indus., Inc.*, 734 F.2d 159, 164-65 (4th Cir. 1984).

Indeed, the EPA has exercised its authority to regulate the disposal of solid waste under the RCRA by promulgating a rule establishing minimum national standards for the disposal of coal combustion residuals ("CCR") generated by electric utilities and independent power producers, like the pollutants at issue in this case. *See* Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015), 2010 WL 2470432 ("*CCR Rule*"); 40 C.F.R. 257.50-257.107. Under this rule, any existing unlined CCR surface impoundment that is contaminating groundwater above a groundwater protection standard established by the EPA must stop receiving CCR and either retrofit or close, except in limited circumstances. 40 C.F.R. § 257.71; *id.* § 257.101. All applicable regulatory requirements apply even to CCR

surface impoundments that do not receive CCR after the effective date of the rule, but still contain water and CCR. *CCR Rule*, 81 Fed. Reg. at 51,802.

In addition, the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") grants federal authority to order removal of pollutants or other remedial action whenever any "hazardous substance is released or there is a substantial threat of such a release into the environment." 42 U.S.C. § 9604(a)(1). Congress defined releases of hazardous substances extremely broadly in CERCLA. *See* 42 U.S.C. § 9601(22) ("The term 'release' means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment"). "Environment" is defined in similarly expansive terms: Unlike the CWA, it includes "navigable waters" *and* "any other surface water, *ground water*, drinking water supply, *land surface*, or subsurface strata, or ambient air within the United States." 42 U.S.C. § 9601(8) (emphasis added). In other words, CERCLA provides direct authority to remediate situations like the one involved in this case, in which CCRs allegedly leached into groundwater, without the need to shoehorn the facts into the comparatively narrow elements of a CWA action.

The existence of these regulatory regimes fatally undermines any contention that the federal government would be powerless to address the migration of pollutants from CCR surface impoundments and similar threats to the environment

without the extension of CWA jurisdiction to hydrologically connected groundwaters.

B. State Law Provides Other Mechanisms to Address Groundwater Pollution

Mechanisms to redress pollution of groundwater are even more abundant at the state level. Under the CWA, States establish total maximum daily loads ("TMDLs") to regulate pollutants in state waters. *See, e.g.*, 33 U.S.C. § 1313(d)(1)(C). The EPA also provides States with information regarding "processes, procedures, and methods to control pollution" to assist the States in fulfilling their responsibility to regulate nonpoint source pollution within their borders. 33 U.S.C. § 1314(f). And the States expressly retain the "right" to expand their NPDES programs or to "adopt or enforce" other environmental standards—including standards governing discharged into groundwater—where they determine that the CWA is insufficient to protect state lands and waters. *See* 33 U.S.C. § 1370.

States have long exercised their power to protect state waters independent of the CWA's basic requirements for NPDES permitting programs. Kentucky law, for example, directly addresses the discharge of pollutants into groundwater, providing that "no person shall, directly or indirectly . . . discharge into any of the waters of the Commonwealth . . . any pollutant, or any substance that shall cause or contribute to the pollution of the waters of the Commonwealth" except as authorized by state regulatory authorities. KRS § 224.70-110. The applicable statutory definition of

"waters" and "waters of the Commonwealth" explicitly includes "underground water." *Id.* § 224.1-010. Kentucky has also created a complex non-NPDES regime designed to protect current and future uses of groundwater, prevent groundwater pollution, and provide remedial measures to address discharges into state groundwater. *See, e.g.*, 401 KAR 5:037 (groundwater protection plans); 401 KAR 100:030 (remediation requirements); 401 KAR Chapter 46 (coal combustion residuals program); 401 KAR Chapter 45 (special waste permits).

Other States in this Circuit enforce similar laws, including—but not limited to—the following:

- Michigan law provides that a "person shall not directly or indirectly discharge into the waters of the state a substance that is or may become injurious" to a broad array of interests, including public health, commercial, industrial and agricultural land uses, and the protection of wild flora and fauna. M.C.L. 324.3109(1). The term "waters of the state" is explicitly defined to include "groundwaters . . . within the jurisdiction of this state." M.C.L. 324.3101(aa).

- Ohio law makes it unlawful for any person to "cause pollution or place or cause to be placed any sewage, sludge, sludge materials, industrial waste, or other wastes in a location where they cause pollution of any waters of the state." R.C. § 6111.04(A)(1); *see also id.* § 6111.01 (defining "waters of the state" to include all "bodies or accumulations of water, surface and underground, natural or artificial, regardless of the depth of the strata in which underground water is located . . . except those private waters that do not combine or effect a junction with natural surface or underground waters").

- Tennessee law renders it "unlawful for any person to discharge any substance into the waters of the state" where such substances qualify as statutorily defined pollutants and the discharge was not "properly authorized" by state authorities. T.C. § 69-3-114(a); *see also id.* § 69-3-

> 103 (defining "pollutant"). the applicable statutory definition of "waters" includes "any and all water, public or private, on or *beneath the surface of the ground*, that are contained within, flow through, or border upon Tennessee." *Id.* § 69-3-103 (emphasis added).

These and other laws provide important regulatory checks on groundwater pollution. There is thus no merit to any claim that rewriting the CWA to cover hydrologically connected groundwaters is necessary to avoid pollution of state groundwater and the nation's waterways. Accordingly, this Court should respect the jurisdictional limitations embodied in the text of the CWA and affirm the district court's decision below.

CONCLUSION

For the foregoing reasons, the Court should affirm the judgment of the district court.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

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Dated: May 4th, 2018

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I certify that on May 4, 2018, I electronically filed this document using the Court's CM/ECF system, which will serve an electronic copy on all registered counsel of record.

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No. 17-1640

IN THE UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

Upstate Forever and Savannah Riverkeeper,
Plaintiffs-Appellants,

v.

Kinder Morgan Energy Partners, L.P. and
Plantation Pipe Line Company, Inc.,
Defendants-Appellees,

On Appeal from the United States District Court for the
District of South Carolina, Anderson Division
Case No. 8:16-cv-04003, Honorable Henry M. Herlong, Jr.

BRIEF OF AMICI CURIAE THE STATE OF WEST VIRGINIA, THE STATE OF SOUTH CAROLINA, NINE OTHER STATES, AND THE GOVERNOR OF MISSISSIPPI SUPPORTING DEFENDANTS-APPELLEES AND AFFIRMANCE

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INTEREST AND IDENTITY OF *AMICI*

The States of West Virginia, South Carolina, Arkansas, Alabama, Indiana, Kansas, Louisiana, Missouri, Oklahoma, Utah, Wisconsin, and the Governor of the State of Mississippi file this brief under Rule 29(a) of the Federal Rules of Appellate Procedure.[1]

Amici States have a significant interest in the outcome of this case, because the result Appellants Upstate Forever and Savannah Riverkeeper seek—an unprecedented and unwarranted expansion of federal jurisdiction and the National Pollutant Discharge Elimination System ("NPDES") permitting regime under the Clean Water Act ("CWA")—would undermine the cooperative federalism structure on which the CWA is premised while introducing significant complexity and costs into the States' water-quality efforts under both the CWA and independent state laws.

Amici States appreciate the importance of protecting state and national waters, and have long exercised their traditional authority to regulate in this sphere. Under the CWA, States retain responsibility and jurisdiction over land and water resource protection, and are often at the tip of the corrective action spear when enforcement of state and federal environmental laws and supervision of cleanup and mitigation efforts is required. *Amici* believe, however, that judicially expanding the scope of

[1] A State may "file an amicus-curiae brief without the consent of the parties or leave of court." Fed. R. App. P. 29(a).

the NPDES regime as Appellants urge would violate the CWA's text and, contrary to Congress's intent, erode the States' role as the principal regulators and protectors of local land and water resources. Moreover, *amici* are concerned that the result of this federal jurisdictional creep will not be more aggressive environmental cleanup actions, but rather an unwarranted expansion of the NPDES program—with its costly and time-consuming requirements—to scores of new lands and water sources that the program was not designed to address. Navigating these complexities will exponentially increase costs and administrative burdens on States and their agencies tasked with implementing state and federal environmental laws without materially improving environmental quality. In turn, these burdens could divert resources from existing state enforcement efforts and emergency clean-up measures, while opening the States to the specter of liability from a plethora of new citizen suits seeking enforcement of these new, atextual duties.

INTRODUCTION

In the CWA, Congress struck a balance between state and federal environmental enforcement in a cooperative effort to protect the nation's waterways. The CWA prohibits discharges from discrete "point sources" like pipelines into waters of the United States, but leaves to the States regulation of other, nonpoint source pollution that affects state waters. The oil leak at issue here occurred on intrastate land, with some pollutants—eventually and indirectly—making their way to waters

of the United States by seeping into the ground and migrating through the groundwater. Under the plain text of the statute, the CWA does not apply.

Nevertheless, Appellants seek an end-run around the statutory text by trying to persuade this Court to adopt what Congress has declined to do—and by advancing an expansive theory of CWA jurisdiction at the same time that the EPA is actively reconsidering expansive jurisdictional theories adopted by the prior administration. Appellants' "hydrological connection" theory is unsupported by the text and would lead to limitless expansion of federal jurisdiction, effectively erasing the distinctions between state and federal authority that are baked into the CWA's very structure.

Further, expanding the CWA's scope as Appellants urge would introduce unwarranted complications and complexities as States try to administer a behemoth of new regulatory duties. The uncertainties endemic to this approach would make it impossible for States to regulate with certainty in these new areas, and could drain resources from other environmental and water-quality programs that play a vital role in protecting the nation's natural resources. Finally, there is no need for this dramatic expansion of CWA jurisdiction, because both the federal government and the States already have broad and sufficient authority to remedy accidental spills like this, as well as other threats to groundwater and intrastate resources.

This Court should not open the way for countless citizen suits, like this one, that will do nothing more than second-guess States' environmental remedial efforts

while multiplying administrative burdens for the States, compounding uncertainties for regulated entities in an already complex area, and rendering the States less equipped to enforce existing environmental laws.

ARGUMENT

I. The Hydrological Connection Theory Of CWA Jurisdiction Violates The CWA's Text And Principles Of Cooperative Federalism.

A. In the CWA, Congress granted limited authority to federal agencies to regulate the discharge of pollutants into "navigable waters," or "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). Specifically, the CWA makes unlawful "the discharge of any pollutant" without an NPDES permit. 33 U.S.C. § 1311(a). Under the CWA, pollution either emanates from a "point source" to navigable waters, in which case an NPDES permit is required, or is non-point source pollution, which requires no permit. *See* 33 U.S.C. § 1362(12) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source"). A "point source," in turn, is defined as "any discernible, confined and discrete conveyance," and includes (but is not limited to) pipes, ditches, channels, tunnels, and similar conduits. 33 U.S.C. § 1362(14). While the CWA also prohibits indirect discharges into navigable waters, those discharges must proceed from one distinct point source (*i.e.*, a pipe) into another (*i.e.*, a drainage ditch), which is designed or intended to flow into navigable waters. *See*, *e.g.*, *Rapanos v. United States*, 547 U.S. 715, 743 (2006) (plurality opinion) (collecting authorities).

Appellants brought this challenge under the CWA's citizen-suit provision, which allows individuals to bring a lawsuit against any person for designated CWA violations, including violations of NPDES permitting standards. 33 U.S.C. § 1365(a)(1). Appellants allege that petroleum and other pollutants released at the spill site constituted an unlawful point source discharge; even though the oil leaked into the ground, not into navigable waters, Appellants argue it is enough that some pollutants eventually made their way to navigable waters through the groundwater. Appellants do not suggest that groundwater itself constitutes navigable waters. *See* Appellants Br. 18-19. Nor could they: "It is basic science that ground water is widely diffused by saturation within the crevices of underground rocks and soil," and "[a]bsent exceptional proof of something akin to a mythical Styx-like subterranean river," "passive migration of pollutants" through groundwater is not discharge from a point source. *26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth.*, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017).

Instead, Appellants argue that the distance between the spill site and the nearest navigable waters does not take this case outside the CWA's purview because the groundwater is purportedly "hydrologically connected" to waters of the United States. Either, the argument goes, the flows, seeps, and fissures through which

groundwater migrates are *themselves* point sources, or the CWA should be interpreted to include groundwater that is connected to navigable waters in the sense that the groundwater eventually flows into them.

Amici States agree with and incorporate by reference Kinder Morgan's legal arguments showing that the CWA cannot support either interpretation. Appellees Br. 31-45; *see also, e.g.*, *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994) ("The possibility of a hydrological connection" is not "a sufficient ground of regulation."). As the district court correctly concluded, either prong of the hydrological connection theory would run counter to the text of the CWA and undermine the purposes and structure of the statute.

Essentially, Appellants are asking this Court for an end-run on the jurisdictional limits embedded in the CWA's text. Appellants (at 21-22) take cover in a position that the EPA has advanced in recent years, most prominently in an amicus brief in May 2016 in a still-pending Ninth Circuit case, in which it argued that the CWA requires regulation of groundwater with a direct hydrological connection to navigable waters. *See* Dkt. No. 40, Case No. 15-17447, *Hawaii Wildlife Fund et al. v. Cnty. Of Maui* (9th Cir. 2016). This litigation position, however, has never been subjected to rigorous notice-and-comment review, and thus, is owed no deference. *See Christensen v. Harris Cty*, 529 U.S. 576, 587 (2000).

Moreover, the EPA has recently made clear that it intends to engage in rule-making that suggests that the current administration would reconsider that position. *See* 82 Fed. Reg. 34,899 (July 27, 2017). The EPA's proposed rule expressly recognizes the need to balance the CWA's goals to "restore and maintain" integrity of the nation's waters with the need to "recognize, preserve, and protect the primary responsibilities and right of States to prevent, reduce, and eliminate pollution." *Id.* at 34,901 (citing 33 U.S.C. § 101(a)-(b)). It also announced the EPA's intention to "conduct a separate notice and comment rulemaking that will consider developing a new definition of 'waters of the United States' taking into consideration the principles that Justice Scalia outlined in the *Rapanos* plurality opinion," *id.* at 34,902—that is, that navigable waters under the CWA include only "relatively permanent, standing or continuously flowing bodies of water" that are connected to traditional navigable waters and wetlands with a "continuous surface connection" to such waters. *Rapanos*, 547 U.S. at 739, 742 (opinion of Scalia, J.). This proposed rulemaking signals the EPA's intent to leave no room for a theory that the definition of "waters of the United States" or the related definition of "point source" could encompass groundwater with a mere hydrological connection to navigable waters.

Further, the hydrological connection approach is an infinitely elastic theory that would lead to regulating any land capable of absorbing water—essentially, any land within a State. Groundwater naturally migrates downhill, but that is hardly the

same thing as traveling through a "confined and discrete conveyance" akin to a pipe, tunnel, or aqueduct. And because it is more likely than not that groundwater will, at some point, connect with navigable waters, reading a hydrological connection gloss onto the CWA could lead to a limitless expansion of federal power by requiring NPDES permits wherever groundwater eventually connects with navigable waters. In *Rapanos*, a plurality of the Supreme Court emphasized that the "plain language of the [CWA] simply does not authorize [a] 'Land is Waters' approach to federal jurisdiction." 547 U.S. at 734 (opinion of Scalia, J.). And, while *amici* States do not agree with his approach, Justice Kennedy in his concurring opinion underscored that waters adjacent to navigable waters may fall under the CWA only where there is a "significant nexus" between them. *Id.* at 767 (Kennedy, J., concurring in the judgment). *Both* approaches are adamant that there is a meaningful statutory distinction between waters that are—and are not—subject to the CWA. *See, e.g., id.* ("Absent a significant nexus, jurisdiction under the Act is lacking."). Appellants' approach would all-but erase that distinction.

B. More fundamentally, the hydrological connection theory would expand federal authority at the expense of the States' traditional power to regulate state waters, in ways that the text of the CWA does not support and Congress did not intend.

The Tenth Amendment reserves all powers not delegated to the United States by the Constitution to "the States respectively, or to the people." U.S. Const. amend.

X. State authority to regulate and manage local lands and waters is a core sovereign interest; indeed, it "is perhaps the quintessential state activity." *FERC v. Mississippi*, 456 U.S. 742, 767 n.30 (1982). Consistent with this principle, Congress enacted the CWA with respect for States' inherent powers over local lands and water resources by limiting the Act's scope to "waters of the United States." *See* 33 U.S.C. § 1362(7), (12). Congress also expressly stated its purpose to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution . . . of land and water resources." 33 U.S.C. § 1251(b). This delineation of responsibilities between the States and the federal government is a classic exercise in cooperative federalism: The federal government relies on experts at the state level to make the primary judgments about how best to ensure local water quality and to monitor compliance with those requirements.

The Supreme Court has similarly recognized that the States' "traditional and primary power of land and water use" requires a precise reading of the CWA: To expand the scope of the Act beyond its textual limits would "alter[] the federal-state framework by permitting federal encroachment upon a traditional state power" and raise "significant constitutional questions" about the validity of the CWA. *Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 172-74 (2001). Indeed, Justice Scalia's plurality opinion in *Rapanos* rejected an expansive reading of the CWA that would have authorized the federal government "to function

as a *de facto* regulator of immense stretches of intrastate land," because such "an unprecedented intrusion into traditional state authority" requires a "clear and manifest statement from Congress." *Rapanos*, 547 U.S. at 738 (opinion of Scalia, J.) (citation omitted). The phrase, "waters of the United States" "hardly qualifies." *Id.*

Even the EPA has recognized that safeguarding state authority to manage lands and waters is one of its primary goals in administering the CWA: The EPA emphasized that the CWA "commands the [EPA] to pursue two policy goals simultaneously: (a) To restore and maintain the nation's waters; and (b) *to preserve the States' primary responsibility and right to prevent, reduce, and eliminate pollution.*" 82 Fed. Reg. at 34900 (emphasis added).

The position Appellants advocate would fundamentally alter this cooperative federalism regime. Instead of relying on States to regulate groundwater and nonpoint source pollution, the hydrological connection approach would dramatically expand the scope of the NPDES permitting regime and the States' obligations under it. Respecting the balance of roles and policy goals that Congress chose in the CWA is the best way to ensure strong environmental-protection programs at both the state and federal levels. *See, e.g.*, *Catskill Mountains Ch. of Trout Unlimited, Inc. v. EPA*, 846 F.3d 492, 514 (2d Cir. 2017) (the CWA "balances a welter of . . . goals, establishing

a complicated scheme of federal regulation employing both federal and state implementation and supplemental state regulation. In this regard, the Act largely preserves states' traditional authority over water allocation and use . . . ." (citations omitted)).

II. The Hydrological Connection Theory Would Be Unworkable In Practice And Would Put An Untenable Strain On State Resources.

There is good reason not to upset the CWA's careful balance between state and federal powers: Extending the NPDES program to include discharges of pollutants to soils that are merely "hydrologically connected" to navigable waters would entail a myriad of practical difficulties; require States to take on significant new regulatory costs at the expense of existing, better tailored environmental-protection programs; and further multiply the confusion that has long plagued CWA enforcement for regulators and citizens alike.

A. State NPDES programs do not currently offer permits for nonpoint source pollution, nor are these programs designed to do so. Expanding CWA liability to groundwater and nonpoint source pollution would accordingly require a dramatic expansion of state NPDES programs beyond discharges from discrete conveyances, to the entire network of underground capillaries that ultimately lead to navigable waters—or else put States at risk of having the EPA revoke their authority to issue NPDES permits altogether. *See* 33 U.S.C. § 1342(c)(3). The problem, however, is that States cannot complete that new NPDES permitting task with any certainty, and certainly not without considerable, unjustifiable cost.

NPDES permits issued by authorized state agencies contain precise discharge limits from specific point sources into covered waters. Compliance with the terms of a permit becomes the prerequisite for avoiding liability. *See*, *e.g.*, 33 U.S.C. §§ 1311(a), 1342. Yet the degree of precision necessary to draft and comply with permits would be near-impossible to replicate in the context of groundwater. It is one thing, for example, to issue a meaningful permit regulating discharges from a pipe into navigable waters, but how would a state agency issue a permit for a "flow[]," a "seep[]," or a "fissure[]," as Appellants' theory would require? *See* Appellants Br. 7. Or as an oil plume migrates through state lands, would a permit need to be constantly amended? Where would the monitoring outfalls be placed along the groundwater's route to ensure compliance, and how many would be required to account for the full depth and breadth of seepage as pollutants move through the ground?

Groundwater may or may not seep through many feet of soil—and take multiple directions—before ultimately reaching surface water, and the direction and speed of flow depends on geography and gravity, not design. These factors would make it extremely challenging to draft a permit with precise discharge parameters, much less to monitor compliance. At a minimum, States could be required (at great cost) to undertake significant environmental impact studies into the many newly covered sources of pollution in an attempt to develop data sufficient to regulate with

any kind of precision, coherence, and scientific integrity under the strictures of the NPDES program.

The implications of Appellants' theory could also radiate far beyond the parties in this appeal to encompass many new sources of nonpoint source pollution that have never been considered covered by the CWA—and States would likely be required to permit and monitor all of them.

For example, personal septic tanks typically discharge pollutants into groundwater, but their owners have not historically had to apply for NPDES permits. If this Court sides with Appellants, however, the States could be required to issue permits (and individual homeowners required to apply for them) wherever the groundwater surrounding a septic tank is hydrologically connected to navigable waters. The potential scale of these new burdens is massive: The EPA estimates that 25% of American homes use septic systems that discharge more than 4 billion gallons of wastewater into the soil every day.[2] And the concern that septic tanks could become a new source for CWA litigation is not mere speculation, as the EPA has already received complaints arguing that States should be required to include septic tanks in their NPDES programs.[3]

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[2] *See* Envtl. Prot. Agency, *A Homeowner's Guide to Septic Systems* 5 (2005), *available at* https://www3.epa.gov/npdes/pubs/homeowner_guide_long.pdf.

[3] Envtl. Prot. Agency, *Initial Results of a Review of the National Pollutant Discharge Elimination System Program in the State of Minnesota*, at 5 (May 2013),

Similarly, owners of large parking lots could find themselves the subject of CWA citizen suits, because storm water mixes with petroleum products from cars parked on the pavement, and then the runoff makes its way into ditches and surrounding soil before seeping into the groundwater. So too for government agencies and municipalities that own stretches of roads. Just as with personal septic tanks, storm water runoff has also attracted attention as a potential source of NPDES liability under the CWA.[4] Adding the imprimatur of this Court to Appellants' theory could open the door to numerous citizen lawsuits. The same analysis could apply to untold other sources of potential liability—accident sites when a ruptured fuel tank causes a leak into groundwater, irrigation systems, underground storage tanks that spring a leak, sites undergoing state voluntary cleanup programs, and more.

B. The struggle to regulate this dramatically expanded realm of CWA permitting could place an untenable strain on the resources States devote to environ-

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available at https://www.epa.gov/sites/production/files/2017-04/documents/mn_petition_report_may-03-2013updated.pdf (alleging in part that Minnesota failed to establish and enforce an effective NPDES permitting program for over 55,000 septic systems).

[4] *See* Petition, Am. Rivers et al., Petition for a Determination that Stormwater Discharges from Commercial, Industrial, and Institutional Sites Contribute to Water Quality Standards Violation and Require Clean Water Act Permits (July 10, 2013), *available at* https://www.clf.org/wp-content/uploads/2013/07/RDA-Petition-WQS-Violations-REGION-I-FINAL-7-10-13.pdf.

mental protection. All told, the time and costs for States to administer NPDES permitting regimes and otherwise satisfy the requirements of the CWA already require an estimated $69 million in annual labor costs, and 1.6 million hours a year. *See* EPA ICR Supporting Statement, Information Collection Request for National Pollutant Discharge Elimination System (NPDES) Program (Renewal), OMB Control No. 2040-0004, EPA ICR No. 0229.21 at 17 tbl. 12.1 (Dec. 2015).

Further, even before managing the hundreds or thousands of new permitting applications States are likely to receive, States might be required to establish water quality standards ("WQS") for groundwater throughout a State based on its hydrological connection to navigable waters. Currently, States are required to establish WQS for each body of water that falls under the definition of "waters of the United States." *See* 33 U.S.C. §§ 1311(b)(1)(C), 1313(e)(3)(A); 40 C.F.R. §§ 130.3, 131.3(i), 131.4(a). Yet if a hydrological connection is enough to trigger CWA liability for discharges into groundwater, States may be required to expand their WQS programs as well, studying those "waters" to determine whether current standards should apply, or issuing new WQS altogether. *See* 33 U.S.C. § 1313(c)(4). States then have a continuing duty to revise their WQS as environmental conditions change, 33 U.S.C. § 1313(c)(3), and must submit biennial water quality reports to the EPA, 33 U.S.C. § 1315(b)(1)(A)-(B). If these duties were expanded to

potentially all of a State's groundwater, state compliance burdens would raise exponentially.

At bottom, States would have to devote astronomical resources from already scarce budgets to administer an accurate and timely NPDES permitting regime over all discharges into groundwater with a hydrological connection to navigable waters. This would not only be expensive, but it could also divert resources away from other state programs that, as discussed below, already protect state waters from groundwater and nonpoint source pollution. *See infra* Part III.B.

C. Finally, the difficulties of administering a hydrological connection theory of CWA jurisdiction would dramatically increase compliance costs for parties who seek to take steps to protect themselves from liability, and further complicate an already thorny and uncertain area of the law.

Unlike for discharges into a ditch, tunnel, or similarly discrete conveyance that leads to navigable waters, regulated parties do not have direct control over where, how long, and how far a discharge into groundwater may disperse. It would thus be extremely difficult for covered entities to take precautions to ensure that they meet prescribed NPDES permitting requirements for groundwater discharges. Appellants' theory could put States in the untenable position of administering an unwieldy and time-consuming permitting program that may prove challenging for even the most diligent parties to satisfy.

Given that essentially any groundwater may, eventually, make its way to navigable waters, individuals and companies may find it prudent to seek NPDES permits for essentially every discharge to state lands. This case illustrates the difficulties of such a proposition. Would the owners or operators of an oil pipeline be required to seek a permit everywhere the pipe runs, across county and often state lines, to protect against a potential mountain of citizen suits and the specter of the CWA's steep per-day penalties—up to $52,414, *see* 82 Fed. Reg. 3633, 3636 (Jan. 15, 2017)—in the event of a leak or other accidental discharge?

The Supreme Court recently emphasized how "arduous, expensive, and long" the process for obtaining permits for discharges into navigable waters can be. *U.S. Army Corps of Engineers v. Hawkes Co.*, 136 S. Ct. 1807, 1815 (2016). The process to obtain state permits for even straightforward point source discharges can already take several months and cost over $20,000.[5] Permits issued by the Army Corps of Engineers for more complex regimes—which may be more akin to the type of new regulated sources that could be swept in by Appellants' theory—can be greater still. There, the process to obtain an "individual" permit can take "788 days and

[5] *See, e.g.*, W. Va. Dep't. of Envtl. Prot., *National Pollutant Discharge Elimination System (NPDES) Individual Permits* (Sep. 7, 2017), http://www.dep.wv.gov/wwe/permit/individual/pages/default.aspx (explaining that individual NPDES permits can take up to six months and cost up to $15,000); Va. Dep't. of Envtl. Quality, *VPDES Permits, Fees, and Regulations* (Sep. 9, 2017), http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx (explaining that state permits can cost up to $24,000).

$271,596," and even "more readily available 'general' permits," on average, take "313 days and $28,915 to complete." *Id.* at 1812. Here, where individuals and businesses may be required to seek permits for discharges into even indisputably non-navigable groundwater, these costs could skyrocket.

More generally, members of the Supreme Court have repeatedly raised the alarm about the uncertainty that has become endemic to CWA litigation. Already, the "systemic consequences" of the statute can be "crushing" "to landowners for even inadvertent violations." *Hawkes*, 136 S. Ct. at 1816 (Kennedy, J., concurring). And as Justice Alito explained, the CWA's reach is "notoriously unclear," where "[a]ny piece of land that is wet at least part of the year is in danger of being classified [as navigable waters]." *Sackett v. EPA*, 566 U.S. 120, 132 (2012) (Alito, J., concurring). Adopting a hydrological connection theory would go further still, making it likely that planned or accidental discharges onto any piece of land could trigger liability under the CWA.

III. Extending The CWA's Scope Is Unnecessary To Redress Groundwater Or Nonpoint Source Pollution And To Hold Negligent Actors Accountable.

Beyond the heavy costs of expanding the NPDES permitting regime to include discharges into groundwater that ultimately make their way to navigable waters, this Court should reject Appellants' position because there is no need to take this atextual leap. The NPDES structure is ill-suited to regulate discharges into groundwater, as

explained above, but numerous federal and state programs already exist that are better tailored to manage groundwater and nonpoint source pollution. State and federal regulators thus already have sufficient alternate means to ensure cleanup of spills and to hold negligent companies accountable for their actions. These existing laws and programs make Appellants' proposed jurisdictional creep—at the expense of the States' traditional and deeply entrenched authority to regulate ground waters—more unwarranted still. *See Catskill Mountains*, 846 F.3d at 529 (finding narrower interpretation of CWA reasonable in part because "several alternatives could regulate pollution . . . even in the absence of an NPDES permitting scheme").

A. On the federal side, the CWA is hardly the only statute to address accidental oil leaks and other groundwater pollution. The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), for example, grants federal authority to order removal of pollutants or other remedial action whenever any "hazardous substance is released or there is a substantial threat of such a release into the environment." *See* 42 U.S.C. § 9604(a)(1). Congress defined releases of hazardous substances extremely broadly in CERCLA. *See* 42 U.S.C. § 9601(22) ("The term 'release' means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment . . . ."). "Environment" is a similarly expansive term: Unlike in the CWA, it includes "navigable waters" *and* "any other surface water, *ground water,* drinking

water supply, *land surface,* or subsurface strata, or ambient air within the United States." 42 U.S.C. § 9601(8) (emphases added). In other words, CERCLA provides direct authority to mediate situations like these—an oil leak that was plugged before any pollutants that had seeped into the groundwater made their water to navigable waters—without the need to shoehorn the facts into the more narrow elements of a CWA action.

In other cases, the federal government may file a lawsuit under the Resource Conservation and Recovery Act ("RCRA") against "any person" when there is evidence that any handling or disposal of solid or hazardous waste, past or present, "may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6973(a). Congress designed RCRA to deal with situations in which environmental "regulatory schemes break down or have been circumvented," and "expressly intended that this and other language of the Act [would] close loopholes in environmental protection." *United States v. Waste Indus., Inc.*, 734 F.2d 159, 164-65 (4th Cir. 1984).

Indeed, the CWA itself addresses oil spills in a section separate from the NPDES regime. This section, which defines oil spills to include "leak[s]," 33 U.S.C. § 1321(a)(2), prohibits "discharges of oil or hazardous substances into or upon the navigable waters of the United States, [or] *adjoining shorelines*." 33 U.S.C. § 1321(b)(1) (emphasis added). Thus, unlike for purposes of the NPDES permitting

scheme, Section 1321 is not strictly limited to discharges into navigable waters themselves (*i.e.*, jurisdiction extends to spills on adjoining shorelines)—nor does it require that spills necessarily come from a point source. Congress thus chose to treat oil spills different from other discharges of pollutants into the nation's waters. This deliberate legislative choice undercuts Appellants' position that applying the NPDES provisions to nonpoint source pollution is necessary to close a loophole in the CWA that Congress could not have intended.

To be sure, individual citizens lack the ability to help enforce these statutes—Congress chose not to extend the citizen-suit provision to violations of Section 1321, for example, and gave the EPA full authority to enforce violations instead, *see*, *e.g.*, 33 U.S.C. § 1321(b)(6), (7). But those decisions by Congress reveal a conscious legislative choice that courts are bound to respect. Moreover, the existence of these federal regimes belies any claim that, without the expansive relief Appellants seek here, the federal government would be rendered helpless to address accidental oil leaks and similar threats to the environment.

B. At the state level, mechanisms to redress pollution of groundwater are even more abundant. Under the CWA, States establish total maximum daily loads ("TMDLs") to regulate pollutants in intrastate waters. *See*, *e.g.*, 33 U.S.C. § 1313(d)(1)(C). The EPA also provides States with information regarding "processes, procedures, and methods to control pollution" to help the States fulfill their

responsibility to regulate nonpoint source pollution within their borders. 33 U.S.C. § 1314(f). And the States expressly retain the "right" to expand their NPDES programs or to "adopt or enforce" other environmental standards—including for discharges into groundwater or nonpoint source pollution more generally—where they determine that the CWA is insufficient to protect state lands and waters. *See* 33 U.S.C. § 1370.

States have long exercised their authority to protect intrastate waters independent of the CWA as well. One powerful example of state water-protection laws at work is South Carolina's extensive, ongoing supervision of the very oil leak at issue here. Under the oversight of the South Carolina Department of Health and Environmental Control ("SCDHEC"), remediation efforts (which incorporated public feedback, *see* Appellants Br. 6), resulted in the removal of 209,000 gallons of pollutants from the spill site as of last spring. *See Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, 2017 WL 2266875, at *1 (D.S.C. Apr. 20, 2017).

South Carolina law directly addresses accidental spills like the one here, making polluters liable for money damages in appropriate circumstances and granting SCDHEC broad authority to mandate and oversee remediation efforts.[6] South Carolina law is also clear that the existence of statutory protections for state waters does

[6] *See, e.g.*, S.C. Code § 48-1-90(A)(1) (making it "unlawful for a person, directly or indirectly, to throw, drain, run, *allow to seep*, or otherwise discharge into the environment of the State organic or inorganic matter" without a permit (emphasis

not limit other "rights existing in equity or under the common law or statutory law . . . to abate any pollution." S.C. Code § 48-1-240. Appellants cannot displace South Carolina's judgment regarding the appropriate methods to enforce and monitor ongoing cleanup at the spill site, nor the State's prerogative to protect its natural resources. *Cf. Piney Run Preservation v. Carroll County*, 523 F.3d 453, 459 (4th Cir. 2008) (CWA citizen suit inappropriate in the face of existing agency enforcement action, even where "the agency's prosecution strategy is less aggressive than [the citizen-plaintiff] would like or . . . it did not produce a completely satisfactory result").

Other States in this Circuit enforce similar laws, including—but not limited to—the following:

- In West Virginia, "[i]t is unlawful for any person," without a state permit, to "[a]llow sewage, industrial wastes or other wastes, or the effluent therefrom, produced by or emanating from any point source, to flow into the waters of this state." W. Va. Code Ann. § 22-11-8(b); *see also id.* § 22-11-3(23) (defining "water" to include "all water on or beneath the surface of the ground"). Similarly, the West Virginia Legislature

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added)); *id.* § 48-1-90(B)(1) (making polluters of state waters "liable to the State for the damages" where the discharge "damage[s] or destroy[s]" fish, wildlife, or plant life); S.C. Regs. 61-92 § 280.60 *et seq.* (requirements for "release response and corrective action" for "[o]wners and operators of petroleum or hazardous substance" underground storage tank systems).

requires the state Department of Environmental Protection to "establish maximum contaminant levels permitted for groundwater," which must "recognize *the degree to which groundwater is hydrologically connected with surface water* and other groundwater" and "*provide protection for such surface water* and other groundwater." *Id.* § 22-12-4(b)-(c) (emphases added).

- Maryland law prohibits the "discharge of any pollutant into the waters of this State," and defines "discharge" broadly to include "addition, introduction, leaking, spilling, or emitting of a pollutant," *or* placing "a pollutant in a location where the pollutant is likely to pollute." Md. Code Ann., Envir. §§ 9-101(b), 9-322.
- Virginia makes it "unlawful for any person to" "[d]ischarge into state waters . . . any noxious or deleterious substances," or to "[o]therwise alter the physical, chemical or biological properties of state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses." Va. Code § 62.1-44.5(A)(1), (3); *see also id.* § 62.1-10(a) (defining "water" to include "all waters, on the surface and under the ground").

- In North Carolina, it is unlawful, without a permit, to "[c]ause or permit any waste, directly or indirectly, to be discharged to or in any manner intermixed with the waters of the State in violation of [applicable state] water quality standards." N.C. Gen. Stat. Ann. § 143-215.1(a)(6); *see also id.* § 143-212(6) (defining "waters" to include "any . . . body or accumulation of water, whether surface or underground").

These and other laws provide important regulatory checks on groundwater and nonpoint source pollution. There is thus no weight to Appellants' claim (at 9) that rewriting the CWA is necessary to avoid "rampant pollution" of state groundwater and the nation's waterways.

C. Where, as here, the States have taken up the mantle of protecting groundwater and nonpoint source pollution within their borders, it would be particularly inappropriate to undo the CWA's careful delineation of responsibility between the federal government and the States. Instead of aiding state and federal enforcement, Appellants' hydrological connection theory could interfere with the efficient operation of these and other existing state programs.

As this Court has recognized, "the primary authority for enforcement [under the CWA] rests with the state and federal governments," and citizen suits are "meant to supplement rather than to supplant government action." *Piney Run*, 523 F.3d at

456 (citation omitted). Citizens are accordingly "bar[red]" "from suing if the EPA or the State has already commenced, and is diligently prosecuting, an enforcement action." *Id.* (citation omitted); *see also Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 61 (1987) (holding that allowing citizens to seek penalties under the CWA that the EPA or "state enforcement authorities" "chose to forgo" would impermissibly "curtail[]" CWA enforcement discretion). This Court's concern about citizen suits improperly interfering with state oversight decisions applies with even more force here: There has been no enforcement action under the CWA, but that is because the CWA *does not apply*. Nevertheless, South Carolina is actively overseeing site remediation under the State's laws that *are* relevant. Consistent with the analysis of *Piney Run*, this Court should refuse to supplant South Carolina's ongoing corrective measures with a remedy that Appellants prefer.

That result is also consistent with Congress's judgment that the CWA citizen-suit provision must not be used to interfere with remedial efforts under more directly applicable environmental laws. CERCLA, for example, generally prohibits judicial review of government removal or remedial actions. *See* 42 U.S.C. § 9613(h). Courts have interpreted this "blunt withdrawal of federal jurisdiction," *N. Shore Gas Co. v. EPA*, 930 F.2d 1239, 1244 (7th Cir. 1991), to include citizen-suit provisions in non-CERCLA environmental laws, like the CWA. *See McClellan Ecological Seepage Situation v. Perry*, 47 F.3d 325, 331 (9th Cir. 1995) (holding that citizen-plaintiff's

"claims pertaining to discharge via seepage and pipes into [surface waters]" are "excluded from federal court jurisdiction" where any remedy would affect CERCLA remediation measures). Just as the CWA citizen-suit provision may not be contorted into a tool to delay, interfere with, or overlap with remediation efforts under CERCLA, the same concerns support the conclusion that it should it be used to second-guess and divert resources from a State's efforts to remediate groundwater or nonpoint source pollution.

In short, even if there were any basis in the text of the CWA to support Appellants' direct hydrological connection theory—and there is not—expanding the scope of the CWA would not meaningfully advance the States' and federal government's interests in protecting water sources and holding polluters accountable for their actions. The CWA's cooperative federalism structure, expressly reserving to the States their traditional authority to protect state waters, should continue running its course.

CONCLUSION

The judgment of the District Court should be affirmed.

Respectfully submitted,

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September 8, 2017

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I certify that on September 8, 2017, the foregoing document was served on counsel of record for all parties through the CM/ECF system. One paper copy of this brief will be sent to the Clerk of Court via Federal Express.

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UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

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No. 17-6155

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

TENNESSEE CLEAN WATER NETWORK;
TENNESSEE SCENIC RIVERS ASSOCIATION,
Plaintiffs-Appellees,

v.

TENNESSEE VALLEY AUTHORITY,
Defendant-Appellant.

On Appeal from the United States District Court
for the Middle District of Tennessee, Nashville Division
Case No. 3:15-cv-00424

BRIEF OF THE STATE OF ALABAMA, THE STATE OF KENTUCKY, FIFTEEN OTHER STATES, AND THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AS *AMICI CURIAE* IN IN SUPPORT OF APPELLANT TENNESSEE VALLEY AUTHORITY

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INTEREST OF *AMICUS CURIAE*

The States of Alabama, Kentucky, Arkansas, Georgia, Indiana, Kansas, Louisiana, Missouri, Montana, Nebraska, Oklahoma, South Carolina, Texas, Utah, West Virginia, Wisconsin, Wyoming, and the Mississippi Department of Environmental Quality file this brief under Rule 29(a) of the Federal Rules of Appellate Procedure.[1]

The *amici* States have a substantial interest in this case because the lower court's decision creates an unprecedented extension of federal jurisdiction under the Clean Water Act ("CWA") and the National Pollutant Discharge Elimination System ("NPDES"), expanding federal regulation to those waters historically regulated by the States. That result is contrary to both the text and the cooperative federalism scheme expressed in the CWA, and erodes the States' role as principal regulators and protectors of groundwater and land resources. Moreover, the lower court's expansion of federal jurisdiction to "hydrologically-connected" groundwater will increase administrative and legal costs to the States and their environmental protection agencies without materially improving environmental quality.

In addition, certain *amici* States' interest extends beyond legal and jurisdictional disputes. The lower court's remedy, ordering closure of the Gallatin

[1] A State "may file an amicus-curiae brief without consent of the parties or leave of court." Fed. R. App. P. 29(a).

ash ponds by excavation and removal, would cost approximately $1.8 billion to 4.0 billion. As TVA will pass this cost on to its captive utility customers, such a costly remedy will have an unanticipated, immediate, and profound impact on utility ratepayers. If this Court upholds the lower court's remedy, and closure-by-removal is subsequently applied throughout the Sixth Circuit, the resulting costs to utility customers would be astronomical, costing in the tens-of-billions of dollars. Ratepayers in states outside of the Sixth Circuit who receive wholesale utility service from TVA, like Mississippi, Georgia, and Alabama, would suffer the same negative consequences if the legal arguments and remedies the lower court adopted are accepted by this Court.

SUMMARY OF ARGUMENT

The CWA strikes a balance between state and federal environmental enforcement in a cooperative scheme designed to protect the nation's waters. The CWA prohibits discharges of pollutants from "point sources," like pipelines, into waters of the United States. Congress expressly left regulation of groundwater pollution to the States. The pollution at issue here occurred on intrastate land, with some pollutants—eventually and indirectly—making their way to waters of the United States by seeping into the ground from coal ash ponds and migrating through the groundwater. The CWA does not apply to this form of groundwater pollution.

Nevertheless, the district court adopted a "hydrological connection" theory, which has the effect of end-running the jurisdictional limitations embodied in the CWA. The lower court's adoption of this theory effectively erases the distinction between state and federal authority, which is incorporated into the CWA's very structure. Moreover, the lower court's decision creates unnecessary complexities and administrative costs to States attempting to navigate new and unanticipated regulatory duties imposed upon them under an atextual theory, rather than clear text approved by representatives of the States in Congress.

Indeed, the lower court's decision creates additional, unanticipated costs for TVA's utility customers both in and out of the Sixth Circuit. Notably, while monopoly-status utilities pass on environmental compliance costs to captive customers, those costs are typically associated with legal and regulatory policy initiatives enacted by elected officials or their delegates. Despite this fact, the lower court mandated – in a proceeding with limited evidence and stakeholder participation – a remedy of "closure by excavation and removal," which will cost billions that will ultimately be passed on to captive customers in states both within the Sixth Circuit and elsewhere. Application of such a remedy to the dozens of coal ash ponds in the Sixth Circuit in subsequent litigation would add to already mounting costs and could effectively mean hundreds-of-thousands of customers being unable

to afford electricity. This Court should avoid such unintended, costly results and reverse the lower court's flawed decision.

ARGUMENT

I. The Hydrological Connection Theory of CWA Jurisdiction Is Inconsistent with the Text of The CWA and Cooperative Federalism Principles.

This Court should reject a flawed hydrological connection theory of CWA jurisdiction that is contradictory to the text of the statute and the cooperative federalism principles embodied in its structure. The CWA generally prohibits "the discharge of any pollutant" from a "point source" to "navigable waters," without an NPDES permit. *See* 33 U.S.C. §§ 1311(a); 1342; 1362(12). However, the Act's express language does not include groundwater within federal jurisdiction – a limitation confirmed by the Act's legislative history, wherein Congress explicitly determined that regulation of ground water be left to the States. Indeed, numerous courts have confirmed that the theory adopted by the lower court is unworkable, finding that hydrologically connected groundwater is neither a "point source" nor a "navigable water" under the text of the Act. *See e.g.*, *Kentucky Waterways Alliance, et al. v. Kentucky Utilities*, Civ. Action No. 5: 17-292-DCR, 2017 WL 6628917, (E.D. Ky. Dec. 28, 2017).

Management of local lands and waters "is perhaps the quintessential state activity." *FERC v. Mississippi*, 456 U.S. 742, 767, n. 20 (1982). To secure the reserved power of the States over local land and water resources, the Supreme Court has required a clear statement of congressional intent to interfere with the States' "traditional and primary power of land and water use" when assessing the validity of expansive interpretations of the CWA. *Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs*, 531 U.S. 159, 174 (2001) (hereinafter "*SWANCC*"). But there is no clear statement of Congressional intent to subject regulated parties for groundwater discharges present in the text of the CWA. Instead, Congress chose to leave regulation of groundwater, including groundwater that is "hydrologically connected" to "navigable waters" within the purview and jurisdiction of the States. As a result, the lower court erred when it adopted the hydrological connection theory of CWA jurisdiction.

It is beyond dispute that groundwater does not in itself constitute "navigable waters" and the District Court's opinion below does not purport to hold otherwise. The CWA's definition of navigable waters—"waters of the United States, including the territorial seas"—excludes groundwater. 33 U.S.C. § 1362(7). Federal regulations likewise exclude groundwater from navigable waters. 40 C.F.R. §§ 122.2, 230.3(o); 33 C.F.R. § 328.3(a). *See also* 79 FR 22188, 22218 (Apr. 21, 2014)

("The agencies have never interpreted 'waters of the United States' to include groundwater").

And the CWA defines the term "discharge of any pollutant" as "any addition of any pollutant *to* navigable waters *from* any point source." 33 U.S.C. § 1362(12) (emphasis added). The addition of a pollutant to *groundwater* from a point source is not enough; Congress repeatedly rejected proposed bills adding that language. *See infra* pp. 8-9.

A discharge that migrates through groundwater from a point source to navigable water is not an addition of a pollutant *to* navigable waters *from* a point source. It is an addition of a pollutant *to* groundwater *from* a point source. Thus, the addition of pollutants to groundwater does not constitute an "addition of any pollutant to navigable waters from any point source," as the District Court's hydrological connection theory requires. 33 U.S.C. § 1362(12). The possibility of a "hydrological connection" between groundwater and navigable waters is not "a sufficient ground of regulation." *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965 (7th Cir. 1994) ("the statute Congress enacted excludes *some* waters, and ground waters are a logical candidate.") (emphasis in original).

Nor does groundwater itself constitute a "point source." Under the CWA, a "point source" is "any discernible, confined and discrete conveyance," which includes (but is not limited to) "any pipe, ditch, channel, tunnel, conduit, well,

discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). But groundwater is neither discernable, confined, nor discrete. "It is basic science that ground water is widely diffused by saturation within the crevices of underground rocks and soil," and "[a]bsent exceptional proof of something akin to a mythical Styx-like subterranean river," "passive migration of pollutants" through groundwater is not a discharge from a point source. *26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth.*, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017).

Moreover, while the CWA does prohibit indirect discharges into navigable waters, those discharges must proceed from one distinct point source (*e.g.* a pipe) into another (*e.g.* a drainage ditch), which is designed or intended to channel water into navigable waters. *See, e.g.*, *Rapanos v. United States*, 547 U.S. 715, 743 (2006) (plurality opinion). Given the ubiquitous presence of groundwater in State lands, the lower court's expansive reading of the CWA would authorize the federal government "to function as a *de facto* regulator of immense stretches of intrastate land." *Id.* at 738 (plurality opinion) (citation omitted). Such "an unprecedented intrusion into traditional state authority" requires a "clear and manifest statement from Congress." *Id.* "The phrase 'waters of the United States' hardly qualifies." *Id.* As a result, migration of pollutants through groundwater is not covered by the

CWA's prohibition on indirect discharges because groundwater does not constitute a "point source" within the meaning of the statute.

Extending the reach of the CWA to encompass hydrologically connected groundwater would be facially inconsistent with the cooperative federalism structure embodied in the CWA. The EPA has emphasized that the CWA "commands the [EPA] to pursue two policy goals simultaneously: (a) To restore and maintain the nation's waters; and (b) *to preserve the States' primary responsibility and right to prevent, reduce, and eliminate pollution*." 82 Fed. Reg. at 34900 (emphasis added). As one court stated: "Congress did not intend for the CWA to extend federal regulatory authority over groundwater, regardless of whether that ground water is eventually or somehow 'hydrologically connected' to navigable surface waters." *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, 25 F. Supp. 3d 798, 810 (E.D.N.C. 2014). Instead, Congress determined that regulation of groundwater pollution be left to the states. *See Exxon Corp. v. Train*, 554 F.2d 1310, 1325-29 (5th Cir. 1977).

The CWA's legislative history further confirms that Congress extensively considered whether to extend CWA jurisdiction to groundwater and chose not to. *Id.* Although the Senate Committee on Public Works expressly recognized "the essential link between ground and surface waters and the artificial nature of any distinction," it expressly rejected, after "heated debate," an amendment that would

have extended the CWA to groundwater. *Id.* at 1325, 27-29 (*quoting* S. Rep. No. 414, 92d Cong., 1st Sess. 73 (1971)). Instead, Congress determined that regulation of groundwater be left to the States. *Id.* at 1325-29; *see also Kelley ex rel. Mich. v. United States*, 618 F. Supp. 1103, 1107 (W.D. Mich. 1985)). Respecting the balance of roles and policy goals that Congress adopted in the CWA is the best way to ensure the existence of strong environmental protection programs at both the State and federal levels. For these reasons, this Court should reverse the lower court's decision.

II. The Hydrological Connection Theory Dramatically Increases State Regulatory and Compliance Costs and Creates New, Unanticipated Costs for Regulated Parties.

This Court should not adopt an atextual theory of federal CWA jurisdiction that is certain to drastically increase the cost of States' administration, regulation, enforcement of the NPDES program as well as the costs of citizen and business compliance with the CWA and NPDES program. Initially, expanding CWA liability to groundwater would immediately force States to undergo massive expansion of NPDES programs beyond discharges from "discrete conveyances" to the entire network of underground capillaries that ultimately lead to "navigable waters," or else risk losing their authority to issue NPDES permits altogether. *See* 33 U.S.C. § 1342(c)(3). Next, expanding the NPDES permitting regime would strap the States' environmental protection resource. Finally, the hydrological connection theory

would dramatically increase the number of regulated individuals and business and their CWA and NPDES compliance costs.

Simply put, the adoption of the hydrological connection theory would cause a radical and impracticable expansion of States' NPDES permitting programs. NPDES permits issued by authorized state agencies contain precise discharge limits from specific point sources into covered water. Compliance with the terms of a permit is the prerequisite for avoiding liability. *See, e.g.*, 33 U.S.C. §§ 1311(a), 1342. But the degree of precision necessary to draft permits with clear compliance requirements would be nearly impossible to replicate with respect to groundwater discharges. States would be forced to issue permits for any flows, seeps, or fissures, including those that are hidden and malleable. The trajectory and speed of groundwater flow depends on geography and gravity, not design. These factors would make it extremely difficult to draft a permit with precise discharge parameters or monitor compliance or seepage.

The struggle to regulate this radically expanded realm of CWA permitting would place an untenable strain on the environmental protection resources of the States. At present, the time and costs for States to administer NPDES permitting programs and otherwise satisfy the requirements of the CWA already require an estimated $83 million in annual labor costs and 1.8 million hours per year. *See* EPA ICR Supporting Statement, Information Collection Request for National Pollutant

Discharge Elimination System (NPDES) Program (Renewal), OMB Control No. 2040-0004, EPA ICR No. 0229.22 at 23 tbl. 12.1 (Sept. 2017).

In addition to the hundreds or thousands of new permitting applications, States would, at a minimum, be forced to undertake significant environmental impact studies of the many newly covered sources of pollution in order to develop data sufficient to regulate with any degree of precision, coherence, and conformity with established scientific principles. States would also necessarily be required to expand the extent and applicability of their respective water quality standards ("WQS") to cover groundwater. *See* 33 U.S.C. §§ 1311(b)(1)(C), 1313(e)(3)(A); 40 C.F.R. §§ 130.3, 131.3(i), and 131.4(a). Such a result would expand States' duties to revise WQS or require them to issue altogether new WQS. *See* 33 U.S.C. §§ 1313(c)(3); 1315(b)(1)(A)-(B). Moreover, States could not simply decline to undertake these burdensome costs. Instead, if a State chose not to extend its permitting programs to include the addition of pollutants to "groundwater," it would immediately risk EPA revocation of its authority to issue NPDES permits altogether. *See* 33 U.S.C. § 1342(c)(3). Ultimately, this theory of CWA jurisdiction would require States to devote astronomical resources from already strained budgets.

Finally, the hydrological connection theory would dramatically increase the number of regulated parties and their compliance costs. The "systemic consequences" of the CWA can be "crushing" "to landowners for even inadvertent

violations." *Hawkes*, 136 S.Ct. at 1816 (Kennedy, J., concurring). For example, owners of large parking lots could find themselves subject to CWA citizen suits as storm water runoff mixes with petroleum products discharged by cars parked on pavement, and may make its way into groundwater and eventually "navigable water." The same logic extends to runoff from state, county, and municipal roads and highways. As all groundwater may eventually migrate to navigable waters, individuals and companies will likely find it prudent to seek NPDES permits for essentially every discharge that might find its way to groundwater, resulting in the imposition of immense compliance costs on regulated parties. As the Supreme Court has recently emphasized, the NPDES permitting process is "arduous, expensive, and long." *U.S. Army Corps of Engineers v. Hawkes Co.*, 136 S.Ct. 1807, 1815 (2016). In sum, the lower court's adoption of the hydrological connection theory would cause CWA and NPDES compliance costs to skyrocket for both individuals and businesses. As a result, this Court should reverse the lower court's decision.

III. Extending the CWA's Scope Is Unnecessary.

This Court should not adopt an unnecessary, atextual theory of federal CWA jurisdiction in light of other state and federal laws that provide adequate, alternative methods for addressing groundwater pollution. The NPDES structure is ill-suited to regulate discharges into groundwater, as explained above, but there are numerous federal and state programs that are better tailored to address groundwater pollution.

These existing laws and programs render the extension of CWA jurisdiction to hydrologically connected groundwater unnecessary. *See Catskill Mountains v. Ch. of Trout Unlimited, Inc. v. EPA*, 846 F.3d 492, 529 (2d Cir. 2017) (finding narrower interpretation of CWA reasonable in part because "several alternatives could regulate pollution . . . even in the absence of an NPDES permitting scheme").

Several other federal statutes provide the federal government authority to regulate the migration of pollutants through groundwater. For example, the Resource Conservation and Recovery Act ("RCRA") provides the government the power to bring suits and criminal actions against persons who dispose of solid or hazardous waste, past or present, which "may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6973(2). Indeed, the EPA has exercised its authority under RCRA to regulate the disposal of solid waste by promulgating a rule establishing minimum national standards for the disposal of coal combustion residuals ("CCR") generated by electric utilities and independent power producers, like the pollutants at issue in this case. *See* Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015), 2010 WL 2470432 ("*CCR Rule*"); 40 C.F.R. 257.50-257.107. Under the Rule, any existing unlined CCR surface impoundment that is contaminating groundwater above a groundwater protection

standard established by the EPA must stop receiving CCR and either retrofit or close, except in limited circumstances. 40 C.F.R. § 257.71; *id.* § 257.101.

In addition, The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") grants federal authority to order removal of pollutants or other remedial action whenever any "hazardous substance is released or there is a substantial threat of such a release into the environment." 42 U.S.C. § 9604(a)(1). Unlike the CWA, CERCLA provides authority to remediate "release of pollution" into "environment," expressly including the "navigable waters" and "any other surface water, ground water, drinking water supply, land surface, or subsurface strata, or ambient air within the United States." 42 U.S.C. § 9601(8) (emphasis added). Had Congress intended the CWA to include ground water it would have explicitly said so, as it did under CERCLA.

Moreover, States have long exercised their power to protect intrastate waters and groundwater independent of the CWA NPDES permitting program. Tennessee law, for example, directly addresses the discharge of pollutants into groundwater by rendering it "unlawful for any person to discharge any substance into the waters of the state" where such substances qualify as statutorily defined pollutants and the discharge was not "properly authorized" by state authorities. T.C. § 69-3-114(a); T.C. § 69-3-103 (defining "pollutant"). This prohibition clearly encompasses the discharge of pollutants into groundwater, because the applicable statutory definition

of "waters" includes "any and all water, public or private, on or *beneath the surface of the ground*, that are contained within, flow through, or border upon Tennessee." T.C. § 69-3-103 (emphasis added). Other States in this Circuit enforce similar laws, including—but not limited to—the following:

- Kentucky law provides that "no person shall, directly or indirectly . . . discharge into any of the waters of the Commonwealth . . . any pollutant, or any substance that shall cause or contribute to the pollution of the waters of the Commonwealth" except as authorized by state regulatory authorities." KRS § 224.70-110; KRS § 224.1-010 (defining "waters" and "waters of the Commonwealth" to include "underground water").

- Michigan law provides that a "person shall not directly or indirectly discharge into the waters of the state a substance that is or may become injurious" to a broad array of interests, including public health, commercial, industrial and agricultural land uses, and the protection of wild flora and fauna. M.C.L. 324.3109(1). The term "waters of the state" is explicitly defined to include "groundwaters . . . within the jurisdiction of this state." M.C.L. 324.3101(aa).

- Ohio law makes it unlawful for any person to "cause pollution or place or cause to be placed any sewage, sludge, sludge materials, industrial waste, or other wastes in a location where they cause pollution of any waters of the state." R.C. § 6111.04(A)(1); R.C. § 6111.01 (defining "waters of the state" to include all "bodies or accumulations of water, surface and underground, natural or artificial, regardless of the depth of the strata in which underground water is located . . . except those private waters that do not combine or effect a junction with natural surface or underground waters").

In sum, state and federal laws already provide important regulatory checks on groundwater pollution. At best, the hydrologically connected groundwater theory is an expensive, atextual, redundancy. As a result, this Court should respect the

jurisdictional limitations embodied in the text of the CWA and reverse the lower court's decision.

IV. The Lower Court's Order Would Impose Substantial Costs on Utility Customers

A. The Impact to Customers Is Immediate and Profound.

Just like any other utility with regulated rates, the TVA generally passes its costs on to consumers.[2] While the specific type of costs that utilities experience may vary, the broad categories of costs the TVA incurs are typical of the industry, and include "[o]peration, maintenance and administration of the utilities' power system; taxes or in lieu of tax payments; and, capital costs such as debt service payments."[3]

Over the past few decades, utilities have spent an increasing amount of capital on environmental compliance. For instance, "[f]rom the 1970s to 2017, TVA spent approximately $6.7 billion on controls to reduce emissions from its coal-fired power plants."[4] The bulk of environmental compliance costs are attributable to government mandates and sweeping regulatory changes, such as the implementation of the Clean

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[2] The TVA board has some discretion in determining when costs are recovered through rates, but generally, the TVA sets its rates at levels that will recover its costs. TVA 10-K For the fiscal year ended Sep. 30, 2017 ("TVA 2017 10-K"), at 11-12, accessible here <https://www.sec.gov/Archives/edgar/data/1376986/000137698617000031/tve-09302017x10k.htm>.

[3] *Id.*

[4] *Id. at* 32-33.

Water Act and Clean Air Act, or standards for Sulfur Dioxide or Nitrogen Oxides. For example, in 2011 the TVA initiated a project at the Gallatin Plant to install a dry flue gas desulfurization control ("dry FGD") to the tune of $730M, wherein, "[t]he Project allowed TVA to reduce the plant's sulfur dioxide and nitrous oxide emissions into the air."[5] When a utility spends significant sums for the purpose of regulatory compliance, the expenses are typically passed on to consumers. When provided with two reasonable options like in this matter — deciding between whether to close-by-removal or close-in-place a coal ash pond — a utility's decision will generally be reflected on customers' bills for decades to come.

The remedy provided by the lower court much more expensive than the alternative remedy. The TVA's preferred option of addressing the future of the Gallatin ash ponds—and an option specifically authorized by the EPA's CCR rule—is a process referred to as closure-in-place. The estimated cost of closure-in-place, as provided to TDEC, is $230 million.[6] This is in stark contrast to the remedy ordered by the lower court (and advanced by the Appellees) of the "excavation and offsite relocation of CCR Material," costing approximately $2 billion.[7] Should this remedy

[5] Trial Tr. (Vol. 4), RE 237, PageID#9513.
[6] Trial Tr. (Vol. 4), RE 237, PageID#9520.
[7] *Id.*

be upheld, the cost to TVA's customers for this project alone will likely be nearer to $4 billion when considering the cost of debt.[8]

B. If this Remedy in this Case Is Upheld and Applied to Additional TVA Sites, the Cost will be Unduly Burdensome to Customers.

If the hydrological connection theory becomes binding in this Circuit, these costs will dramatically increase. Additional citizen suits will almost certainly follow, likely resulting in closure-by-removal of most, if not all, of the coal ash ponds operated by the TVA. The ratepayer impact of this broad reading and implementation of the CWA, together with the burdensome remedy and subsequent application to other impoundments, would lead to unaffordable bills for many TVA customers. For instance, the cost estimation information provided by the Part II EIS programmatic review, an environmental impact and cost study conducted for the TVA, of ten (10) other wet ash-handling facilities at six (6) additional TVA fossil fuel sites, suggests that if those facilities were closed-by-removal, rather than closed-in-place, the *net* difference in cost would be roughly $2.7 billion, before considering financing costs.[9]

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[8] Calculated assuming a 30-year amortization period and a debt rate of 4.75%, which is conservative compared to the TVA's 2017 blended interest rate of 5.11%, TVA 2017 10-K, at 61. 30 years was used as the amortization period as it is generally the ordinary length of time in which large, long-term debts are borrowed and to reflect the anticipated length of ash pond closure-by-removal for Gallatin (24 years), *See* Proposed Compliance Timetable, RE268, PageID#10883.

[9] To simplify, the amounts used were those provided for the closure-by-removal (truck) option in the Part II-Programmatic Reviews.

Coupled with the *net* difference between the costs of the two options at the Gallatin facility, and including financing costs, the estimated cost to TVA customers if the utility is forced to close-by-removal fourteen (14) of its twenty-two (22) total coal ash facilities is more than $8,500,000,000. This estimate does not include the eight (8) ash impoundments that do not have Part II EIS reviews or are part of this litigation.[10] If the other eight (8) ash impoundments are considered, the *net* cost to TVA customer for the closure-by-removal remedy vs. closure-in-place is likely in excess of $10,000,000,000. Importantly, the TVA currently has outstanding debt in excess of $20 billion, while the TVA Act only authorizes the TVA to issue bonds in an amount not to exceed $30 billion at any time.[11] Similar citizen suits and the imposition of same remedy as the underlying matter could ultimately devastate TVA's financial position, putting the future of millions of American's energy supply at risk.

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[10] Page 6 of Part I-Programmatic NEPA Review, available at <https://www.tva.com/file_source/TVA/Site%20Content/Environment/Environmental%20Stewardship/Environmental%20Reviews/Closure%20of%20Coal%20Combustion%20Residual%20Impoundments/Final%20EIS%20Part%20I.pdf>.

[11] *See* TVA 2017 10-K, at 112-113; *See also* TVA Act, at 20, available at <https://www.tva.com/file_source/TVA/Site%20Content/About%20TVA/TVA_Act.pdf>

In 2016, Kentucky customers represented approximately 6.5% of the total kWh's sold by TVA.[12] Thus, it is reasonable to assume that Kentucky customers would be liable for approximately 6.5% of the $8,500,000,000 net cost associated with the closure-by-removal remedy (rather than closure-in-place) for fourteen (14) of TVA's ash impoundments – or $550,000,000. Assuming those costs are recovered on a levelized basis over 30 years[13], the cost of this *single issue* will lead to residential customers in Kentucky paying $5,000,000 more a year.[14] This increase to Kentucky customers provides them no corresponding benefit. These customers do not live in a State where any of the fourteen (14) referenced impoundments are located, while those in Kentucky who live near the Cumberland River are hundreds-of-miles upstream from the Gallatin plant. Any perceived safety or environmental benefits that may be claimed by the Appellees as a result of the ordered remedy will be of little assistance to those 200,000 Kentucky households that will see their bills rise more than necessary than if the TVA closes-in-place its ash ponds. When considering the effect on customers of closing-by-removal *all* TVA ash

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[12] TVA at a glance website and TVA in Kentucky website, 2016 figures, available at <https://www.tva.com/About-TVA/TVA-at-a-Glance> and <https://www.tva.com/About-TVA/TVA-in-Kentucky>.

[13] *See* footnote 9 stating that the assumed amortization period is 30 years.

[14] $ 8.5 billion*6.5%=$552,500,000

$ 552,500,000/30 years= $18,416,667

$ 18,416,667*.2745 (% of total 2016 Ky. kilowatt-hours represented by residential customers)= $5,055,375

impoundments, as opposed to closure-in-place, the remedy ordered by the lower court appears to be even more unreasonable.

If similar citizen suits, demanding the same draconian remedy for every impoundment, are applied across the Sixth Circuit additional consumers will suffer. Kentucky, like the others states in the Sixth Circuit, has dozens of ash impoundments. If the lower court's interpretation of law and the applied remedy are upheld in this matter, similar citizen suits will undoubtedly follow. Due to the rate-regulated nature of most States' utilities, the consequence of these suits and subsequent mandated remedy of closure-by-removal, will without question lead to increased rates for consumer. For legal precedent based on limited evidence to mandate that utilities close-by-removal all ash impoundments, regardless of whether that method is the most reasonable, will ultimately lead to unaffordable and burdensome utility rates. Using the estimated size of the ash impoundments in Kentucky, and extrapolating the cost estimated in TVA's programmatic reviews, the costs that will be passed onto customers within the Sixth Circuit alone will be tens-of-billions of dollars. Along with the inappropriate interpretation of the CWA, the remedy the lower court ordered is an unreasonable application of the CWA to these facts, and the precedent it sets for the rest of the States within the Circuit is untenable for customers. Reasonable minds can differ among stakeholders as to the most prudent long-term plans for these impoundments, and under cooperative federalism

every stakeholder has an opportunity in the process to voice those concerns. If upheld, customers across the Circuit will be paying for the preference of those citizens who have strong opinions regarding environmental issues – not what the most reasonable outcome should be.

Consumers in Mississippi, Georgia and Alabama all receive service from, and pay rates to TVA, although they are located outside of the Sixth Circuit. As a consequence of this matter, and any others where TVA may be *forced* to close its ash impoundments by removal under an unreasonable application of the CWA, customers in those States will pay their portion of the costs, just like residents of the Sixth Circuit States. These States are not within the footprint of the Sixth Circuit, but those consumers will nevertheless be burdened with any negative consequences of the district court's decision. In fact, the Fifth Circuit, in which Mississippi is located, has already rejected similar arguments under the CWA as those before us.[15] Thus, although the federal courts in their State and Circuit have rejected the legal arguments made by Appellees here, consumers may nevertheless pay for a contradictory decision from a different Circuit.

[15] *See Rice v. Harken Exploration Co.*, 250 F.3d 264 (5th Cir. 2001).

CONCLUSION

For the foregoing reasons, the Court should reverse the judgment of the District Court.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

1. This document complies with the length limit of Fed. R. App. P. 29(a)(5) because, excluding the parts of the document exempted by Fed. R. App. P. 32(f) and Fed. R. App. P. 27(a)(2)(B), this document contains 5015 words.

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Dated: February 6, 2018

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CERTIFICATE OF SERVICE

I certify that on February 6, 2018, I electronically filed this document using the Court's CM/ECF system, which will serve an electronic copy on all registered counsel of record.

/s/ Eric M. Palmer
Eric M. Palmer
Ala. Assistant Solicitor General

No. 17-6155

IN THE UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

TENNESSEE CLEAN WATER NETWORK;
TENNESSEE SCENIC RIVERS ASSOCIATION,

Plaintiffs-Appellees,

v.

TENNESSEE VALLEY AUTHORITY,

Defendant-Appellant.

On Appeal from the United States District Court for the
Middle District of Tennessee, Nashville Division
No. 3:15-cv-00424

BRIEF OF THE STATE OF TENNESSEE AS *AMICUS CURIAE* IN SUPPORT OF PLAINTIFFS-APPELLEES

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INTEREST OF *AMICUS CURIAE*

The State of Tennessee submits this brief under Fed. R. App. P. 29(a)(2) as *amicus curiae* in support of the Plaintiffs-Appellees, Tennessee Clean Water Network and Tennessee Scenic Rivers Association. The people of Tennessee have a right to unpolluted waters, and the State of Tennessee has a statutory obligation "to take all prudent steps to secure, protect, and preserve this right." Tenn. Code Ann. § 69-3-102(a). Since this case involves rulings of the district court that the Defendant-Appellee, Tennessee Valley Authority, violated the Clean Water Act by discharging pollutants from its plant near Gallatin, Tennessee, into Tennessee's Cumberland River, the State of Tennessee has an obvious interest in the outcome of this appeal. With respect to the issues raised that relate to Tennessee's regulation of the Defendant's Gallatin plant,[1] the State has a particular interest in ensuring that this Court has an accurate understanding of how the Tennessee Department of Environment and Conservation (TDEC) interprets and implements both its federally authorized National Pollutant Discharge Elimination System (NPDES) permitting program and its solid-waste-management program.

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[1] *See* Br. Defendant-Appellant, 2 (Issue 2); Br. Plaintiffs-Appellees, 2 (Issues 3 and 4).

With respect to the issues raised regarding the relief awarded by the district court,[2] the State also has a specific interest in the remedy ordered by the lower court for closure of the Defendant's wastewater-treatment impoundments. The district court's remedy—that the coal-ash waste located on two sites at the Defendant's Gallatin plant must be excavated and relocated—is consistent with the conclusion TDEC has independently reached as a result of the environmental investigation and evaluation conducted as part of its related state-court enforcement action against the Defendant.[3]

STATEMENT OF THE CASE

The complaint alleged that the Defendant is in violation of the Clean Water Act because there are unauthorized wastewater discharges at its Gallatin facility resulting from leakage directly to surface waters of the United States, and through leakage to groundwater that is hydrologically connected to these surface waters. (Compl., RE 1, Page ID # 1, 38-46.) The complaint also alleged that these

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[2] *See* Br. Defendant-Appellant, 2 (Issue 3); Br. Plaintiffs-Appellees, 2 (Issue 5). The State takes no position with regard to the remaining issues presented.

[3] *See State of Tenn., et al. v. Tenn. Valley Auth.*, No. 15-0023-IV (Davidson Cnty. Chanc. Ct.) (filed Jan. 7, 2015, and alleging violations of the Tennessee Solid Waste Disposal Act, the Tennessee Water Quality Control Act, and the NPDES permit at the Defendant's Gallatin plant). The Defendant subsequently removed the case to federal court, *see State of Tenn. et al. v. Tenn. Valley Auth.*, No. 3:17-cv-01139 (M.D. Tenn.). The State's motion to remand is currently under advisement.

unauthorized discharges violate certain conditions of the Defendant's NPDES permit. (Compl., RE 1, Page ID # 47-52.)

The district court entered judgment in favor of the Plaintiffs, ruling that there are discharges of wastewater from two sites at the Defendant's facility (the "Non-Registered Site" and "Ash Pond Complex") through leakage to surface waters, and through leakage to groundwater that is hydrologically connected to surface water, and that these discharges are not authorized by the Defendant's NPDES permit. (Order, RE 259, Page ID # 10543; Findings of Fact & Conclusions of Law, RE 258, Page ID # 10519-32.) The district court also ruled that these unauthorized discharges violate the "removed substances" provision of the Defendant's NPDES permit, which the court construed as addressing the integrity of the wastewater-treatment-and-control system, and the permit condition prohibiting discharges from the system at other than permitted discharge locations. (FF&CL, RE 258, Page ID # 10532-34.)

To remedy the ongoing Clean Water Act violations caused by these unauthorized discharges, the district court granted the Plaintiffs' request for injunctive relief and ordered the Defendant to excavate the coal-ash and relocate it to a lined facility. (Order, RE 259, Page ID # 10543.) Because of the costs associated with the injunctive remedy, the court did not assess civil penalties against the Defendant for the violations. (Order, RE 259, Page ID # 10543.)

SUMMARY OF THE ARGUMENT

The rulings of the district court regarding the NPDES permit issued by Tennessee for the Defendant's Ash Pond Complex comport with how TDEC interprets and implements its NPDES permitting program and its solid-waste-management program. While the court reached a number of specific conclusions, it essentially ruled that the discharges of pollutants for which the Defendant was ultimately held liable had not been authorized, either expressly or impliedly, by the NPDES permit.

Tennessee is authorized by the federal Environmental Protection Agency (EPA) to issue NPDES permits. TDEC operates the NPDES permitting program under the authority of the Tennessee Water Quality Control Act (TWQCA) and issues NPDES permits for discharges of treated wastewater to the surface waters of the state. TDEC does not authorize discharges to groundwater through NPDES permits, but instead regulates groundwater under the Tennessee Solid Waste Disposal Act (SWDA), as well as its general authority under the TWQCA.

When a coal-ash wastewater-treatment impoundment ceases operation, it is no longer regulated by TDEC's NPDES permitting program, and its closure is regulated as solid-waste disposal under the SWDA. A coal-ash wastewater-treatment impoundment that ceased operation before the enactment of either the

Clean Water Act or TWQCA's permitting requirements is referred to as a Non-Registered Site. These locations are also regulated under the SWDA.

The remedy ordered by the district court comports with TDEC's own corrective-action determination for the two sites at the Defendant's Gallatin facility: excavation and relocation of the coal-ash waste to an expansion of an existing landfill on the Defendant's Gallatin site. This determination was the result of an intensive investigation and evaluation conducted as part of a related state-court enforcement action against the Defendant. Consistent with state solid-waste-management regulations, this investigation and evaluation included an economic analysis, evaluating the potential costs of various remedial options. TDEC thus determined that excavation and relocation on-site was necessary, and that a closure-in-place remedy would be ineffective, based on TDEC's consideration of both environmental protection and the potential economic impact to Tennessee ratepayers.

ARGUMENT

I. THE RULINGS OF THE DISTRICT COURT COMPORT WITH THE WAY IN WHICH TENNESSEE IMPLEMENTS ITS NPDES PERMITTING PROGRAM AND ITS SOLID-WASTE- MANAGEMENT PROGRAM.

The Clean Water Act (CWA), 33 U.S.C. §§ 1251-1387, prohibits the "discharge of any pollutant" into the waters of the United States except "as in compliance with [the CWA]." 33 U.S.C. § 1311(a); *Friends of the Earth v. Gaston*

Copper Recycling Corp., 204 F.3d 149, 151 (4th Cir. 2000) (recognizing § 1311(a) as "the centerpiece of the Clean Water Act"). As the Fourth Circuit recognized in *Piney Run Pres. Ass'n v. County Comm'rs of Carroll County*, 268 F.3d 255 (4th Cir. 2001), "[t]he primary exception to the blanket liability imposed by the CWA is the NPDES permitting system." *Piney Run*, 268 F.3d at 265 (citing *Natural Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369, 1374 (D.C. Cir. 1977)). NPDES permits address water pollution by regulating point sources that discharge pollutants into the waters of the United States.

The CWA expressly requires all entities that discharge pollutants into the navigable waters of the United States to obtain an NPDES permit from the EPA in accordance with standards set by the Administrator of the agency. 33 U.S.C. § 1342(a). NPDES permits "contain limits on what [the permittee] can discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not hurt water quality or [public] health."[4] The EPA, however, may

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[4] Environmental Protection Agency, *NPDES Permit Basics*, https://www.epa.gov/npdes/npdes-permit-basics (last visited Feb. 16, 2018). The Court may properly take judicial notice of the information on this official government website. *See* Fed. R. Evid. 201(b); *Denius v. Dunlap*, 330 F.3d 919, 926-27 (7th Cir. 2003); *see also United States v. BioPort Corp.*, 270 F. Supp. 2d 968, 972 (W.D. Mich. 2003) ("Public records and government documents are generally considered not to be subject to reasonable dispute . . . include[ing] public records and government documents available from reliable sources on the Internet."), *aff'd* 388 F.3d 209 (6th Cir. 2004).

authorize a state to issue NPDES permits in its place if the state permitting program is at least equal to that under the CWA.[5] 33 U.S.C. § 1342(b). Since 1977, the EPA has authorized Tennessee, through its Department of Environment and Conservation, to issue NPDES permits under the provisions of the Tennessee Water Quality Control Act. 51 Fed. Reg. 32834 (Sept. 16, 1986); 46 Fed. Reg. 51644 (Oct. 21, 1981). Indeed, the TWQCA was adopted, in part, "to enable the state to qualify for full participation in the national pollutant discharge elimination system (NPDES) established under § 402 of the [CWA]." Tenn. Code Ann. § 69-3-102(c).

An NPDES permit "is akin to any agency regulation or rule, which a court would normally interpret." *California Pub. Interest Grp. v. Shell Oil Co.*, 840 F. Supp. 712, 716 (N.D. Cal. 1993). Because NPDES permits are similar to agency regulations, courts often defer to an agency's reasonable construction of the permit. *Id.* at 716; *see Ritter v. Cecil Cnty. Office of Hous. & Cmty. Dev.*, 33 F.3d 323, 327-28 (4th Cir. 1994) (recognizing that "it is appropriate for [the court] to show some deference to a state agency interpreting regulations under the authority of a federally created program"); *Sierra Club v. Louisville Gas & Electric Co.*, No. 3:14-cv-391-

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[5] EPA's authorization of a state permitting program affirms that the state program meets the requirements of the CWA. A discharge permit issued by an authorized state therefore also meets the requirements for an EPA-issued discharge permit under the CWA, so the state permittee need not also obtain the federal permit.

DJH, 2015 WL 5105216, at *4 (W.D. Ky. Aug. 31, 2015) (recognizing an NPDES permit as a form of regulation and that agencies are entitled to deference in interpretations of their own regulations); *Pub. Interest Research Grp. of New Jersey v. Yates*, 790 F. Supp. 511, 514 (D.N.J. 1991) (deferring to agency's interpretation to clarify ambiguity in NPDES permit because the court "should give considerable deference to the judgment of the enforcing agency").

Tennessee's NPDES Permitting Program

TDEC's Division of Water Resources (the Division) issues NPDES permits in Tennessee. *See* Tenn. Comp. R. & Regs. 0400-40-05-.02(63) (defining "permit" as "an authorization, license, or equivalent control document issued by the Division of Water Resources which implements the requirements of the TWQCA"). To obtain a permit, the candidate first submits a complete permit application to the Division. The application must include both general identifying information and specific wastewater-discharge information, including information concerning "flows, source of pollution and treatment technologies, production and improvements to reduce pollutants in the discharge, intake and effluent characteristics, potential discharges not covered by the [permittee's wastewater discharge] analysis, and biological toxicity testing data."[6] After receiving a

[6] Tennessee Department of Environment and Conservation, *NPDES Permits*, https://www.tn.gov/environment/permit-permits/water-permits1/npdes-

complete application, the Division prepares a draft permit based on the information contained in the application. The draft permit then goes through a public-notice-and-comment period, and thereafter a final permit decision is made.

TDEC rules also require that a fact sheet—a "permit rationale"—be made available to the public during the permitting process. Tenn. Comp. R. & Regs. 0400-40-05-.06(2). These documents contain supporting information, such as calculations and explanations of specific effluent limitations and the factual basis for preparing the permit. Tenn. Comp. R. & Regs. 0400-40-05-.02(72); 0400-40-05-.06(3). These materials may also contain comments received during a permit's public-notice-and-comment period. TDEC attempts to answer all questions and comments as they are received, as required by TDEC's public-participation rules. *See* Tenn. Comp. R. & Regs. 0400-40-05-.06.

Once issued, the NPDES permit is the only document that authorizes the discharge of pollutants to surface waters through identified discharge locations (outfalls). Neither a permit rationale nor any other supporting documentation authorizes any activity. Nor are these supporting documents themselves enforceable. Only an issued NPDES permit contains the requirements, limitations,

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permits1/national-pollutant-discharge-elimination-system--npdes--permit.html (last visited Feb. 17, 2018).

and conditions deemed necessary for a subject facility to discharge into a receiving stream or body of water. The NPDES permit identifies on its face the authorized discharger, the authorized discharges, including effluent content and outfall, the authorized facility, and the receiving stream.[7] Any discharge not identified as authorized by the permit is, accordingly, unauthorized. Tenn. Comp. R. & Regs. 0400-40-05-.01; 0400-40-05-.07(2)(a).[8]

The TWQCA's NPDES permitting process is modeled on the CWA's; therefore, TDEC's NPDES permitting program likewise focuses on discharges to surface water. In TDEC's view, NPDES permits do not authorize discharges of wastewater to groundwater; consequently, TDEC does not seek to regulate groundwater through its NPDES permitting program.

Tennessee's Solid-Waste-Management Program

TDEC regulates groundwater under the Tennessee Solid Waste Disposal Act, as well as its general authority under the TWQCA. The SWDA provides that a solid-waste disposal facility must be "capable of containing the disposed wastes, so that groundwater protection standards are not exceeded." Tenn. Code Ann. § 68-211-

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[7] *See, e.g.*, Compl., Ex. 2, Permit No. TN0005428, RE 1-2, Page ID # 58.

[8] *See also* Compl., Ex. 2, RE 1-2, Page ID # 78 (providing that "[a]ll discharges shall be consistent with the terms and conditions of this permit").

105(g)(2). "Solid waste" is comprehensively defined under the SWDA and includes "byproducts, scrap, ash, sludge, and all discharged material including solid . . . [or] semisolid . . . material resulting from industrial . . . operations." Tenn. Code Ann. § 68-211-103(8)(A).

"Solid waste disposal" is defined as "the process of permanently or indefinitely placing, confining, compacting, or covering solid waste." Tenn. Code Ann. § 68-211-103(9). It is a violation of the SWDA to "[p]lace or deposit any solid waste into the waters of the state except in a manner approved by TDEC or the Tennessee board of water quality, oil and gas." Tenn. Code Ann. § 68-211-104(1). The SWDA's implementing rules and regulations specifically contain provisions concerning groundwater-monitoring requirements and corrective-action requirements if groundwater protection standards are violated. Tenn. Comp. R. & Regs. 0400-11-01-.04(7).

But for an exception, a coal-ash wastewater-treatment impoundment, like the Defendant's Ash Pond Complex at its Gallatin plant, would be considered a "solid waste disposal" facility and therefore subject to regulation under the SWDA. Excepted from the definition of "solid waste," though, are "solid or dissolved materials in . . . industrial discharges that are point sources subject to [NPDES permits]." Tenn. Code Ann. § 68-211-103(8)(B)(i). A facility or system that is regulated through TDEC's NPDES permitting program, therefore, is temporarily

exempted from regulation under the SWDA. Because leakage from an NPDES-permitted impoundment that causes exceedances of groundwater protection standards is exempted from SWDA regulation, TDEC addresses it through TWQCA enforcement. But once the facility or system, or part of a system, ceases to function as part of a wastewater-treatment process, it no longer qualifies for an NPDES permit and is again subject to TDEC's regulatory authority under the SWDA.[9]

A coal-ash wastewater-treatment impoundment that ceased operation before the enactment of either the CWA or TWQCA's permitting requirements, like the one at Defendant's Gallatin plant, is referred to by TDEC as a Non-Registered Site or NRS. These locations are not currently, nor have they ever been, subject to NPDES permitting. TDEC regulates these NRS locations under the SWDA.[10] Tenn. Code Ann. § 68-211-102(3). It does so not by regulatory choice, but in compliance with the plain language and limitations of its statutory authority.

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[9] *See* Tenn. Code Ann. § 68-211-106(j) (making provision for TDEC to approve "the disposal of coal ash" generated from what were "wastewater treatment units" by means other than in a permitted, lined facility (such as closure-in-place) so long as groundwater protection standards are not exceeded).

[10] NRS locations are subject to the SWDA because they are solid-waste disposal sites, but because these facilities existed before TDEC had established a solid-waste disposal regulatory program, NRS locations do not have solid-waste disposal permits.

The District Court's Rulings

The district court's rulings in this case regarding the NPDES permit issued to the Defendant comport with how TDEC interprets and implements its NPDES permitting program and its solid-waste-management program. The district court essentially ruled that the discharges of pollutants for which the Defendant was ultimately held liable had not been authorized, either expressly or impliedly, by the NPDES permit. Specifically, the court concluded that the Defendant's NPDES permit authorized discharges only from the Ash Pond Complex and not from the Non-Registered Site. (FF&CL, RE 258, Page ID # 10520.) The district court also concluded that the NPDES permit authorized discharges of coal-ash wastewater from only one outfall at the Ash Pond Complex and that nothing in the permit expressly authorized the discharge of pollutants from leaks in that complex. (FF&CL, RE 258, Page ID ## 10428, 10531.) The district court further concluded that the Defendant had failed to establish that "leaks of the types demonstrated by Plaintiffs" (i.e., "groundwater leaks" in the floors of the unlined ponds of the complex[11]) had been considered and authorized under the permit.[12] (FF&CL, RE 258, Page ID # 10532.)

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[11] FF&CL, RE 258, Page ID ## 10522, 10528.

[12] The court determined that when TDEC issued the NPDES permit, it was aware that the unlined ponds of the complex would continue to experience "some ongoing

II. THE REMEDY ORDERED BY THE DISTRICT COURT COMPORTS WITH TENNESSEE'S OWN CORRECTIVE-ACTION DETERMINATION.

The remedy ordered by the district court—excavation and relocation to a lined facility of the coal-ash waste at the Non-Registered Site and Ash Pond Complex—comports with the corrective-action determination that TDEC has independently reached: excavation and removal of the coal-ash waste to a lined expansion of an existing landfill on the Defendant's Gallatin site. Like the district court, TDEC has determined that a closure-in-place remedy would be an ineffective corrective-action for the Gallatin facility. Excavation and on-site relocation, however, is a remedy that is both environmentally protective and economically feasible, both for the Defendant and for the citizens of Tennessee.

TDEC has reached its determination as the result of a lengthy and involved investigation and evaluation conducted as part of the related state-court enforcement action against the Defendant, *State of Tenn. et al. v. Tenn. Valley Auth.*, No. 15-0023-IV (Davidson Cnty. Chanc. Ct.). TDEC initially reviewed more than 100,000 pages of information regarding the historic construction and operation of the Gallatin facility. It also reviewed limited historic groundwater-monitoring data and participated in some groundwater-sampling events at the Gallatin plant. But faced

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seepage *through its dikes*." FF&CL, RE 258, Page ID # 10532 (emphasis added). *See also* FF&CL, RE 258, Page ID # 10530 ("TDEC . . . anticipated only seeps so minor that they would be difficult to quantify or measure empirically.").

with insufficient information concerning the current hydrology and geology of the site, including the potential for releases of coal-ash material to the surface and/or groundwater, TDEC concluded that additional investigation was necessary. TDEC and the Defendant therefore agreed to a process for an extensive environmental investigation to inform TDEC's selection of the appropriate closure remedy for the two sites at Defendant's Gallatin facility.

That agreement is set forth in an agreed temporary injunction entered in the state-court enforcement action. (Agreed Temporary Inj., RE 42-2, Page ID# 1467-75.) It generated the development of a comprehensive, highly detailed, approximately 3,000-page Environmental Investigation Plan (EIP).[13] The Defendant, with TDEC oversight, has implemented the EIP over a nearly two-year period, and that implementation has resulted in the Defendant's submission of more than 12 hard-drives' worth of data.[14] TDEC's analysis and evaluation of that site-specific data led TDEC to its corrective-action determination for the Gallatin sites.

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[13] There are numerous references to "the EIP" or "EIP process" in the record. *See, e.g.*, Trial Tr. (Vol. 1), RE 234, Page ID # 8820, 8849-50; Trial Tr. (Vol. 3), RE 236, Page ID # 9202-03, 9208-09, 9352-53, 9399-9405; Trial Tr. (Vol. 4) RE 237, Page ID # 9412-14, 9481-82, 9550-51, 9572. These references generally include, but are not limited to, the EIP document itself, actual investigation activities, and the data gathered through the investigation activities.

[14] The district court properly limited discussion of the EIP in the federal case, as it is part of the State's enforcement action; therefore, the State will not discuss the specifics of the gathered information. The State acknowledges that the Defendant

In reaching its determination, TDEC thoroughly considered all corrective-action options, including those advanced by the parties in this case.[15] Consideration of the various options involved not only an examination of the data generated through the ongoing environmental investigation and whether a proposed remedy would likely result in effective environmental remediation, but also a detailed analysis exploring the potential associated costs of a remedy and the resulting possible impacts to Tennessee ratepayers.[16] TDEC's approach is consistent with the SWDA's implementing regulation entitled "Assessment of Corrective Measures," which specifically requires that the evaluation of "potential remedies" include consideration of "[t]he cost of remedy implementation." Tenn. Comp. R. & Regs.

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will have an opportunity in the state-court action to challenge TDEC's corrective-action determination.

[15] TDEC had not yet made its corrective-action determination under the Agreed Temporary Injunction when the district court entered its judgment on August 4, 2017. But on June 6, 2017, the district court sought an update on the status of the state-court litigation, Order, RE 250, Page ID # 10249-50, and documents filed in response may have informed the court of the direction in which TDEC was leaning. *See* Redline of Draft Notice of Compliance, RE 251-11, Page ID ## 10332-33 (filed as an attachment to Defendant's Notice of Compliance, RE 251, Page ID # 10251).

[16] TDEC's economic-impact analysis included examination of financial information that included the Defendant's historic and announced rate increases, its public regulatory filings with the Securities and Exchange Commission, and publicly available information regarding costs to customers from previous enforcement actions involving the Defendant.

0400-11-01-.04(7)(a)7.(iii)(III). TDEC has concluded from its evaluation that the costs of a closure-in-place remedy have the potential to be significantly higher than the costs projected at trial.[17] The State recognizes that the costs of an excavation-and-removal remedy will no doubt be "substantial." (Order, RE 259, Page ID # 10543.) But TDEC has also concluded that if the coal-ash waste is removed and relocated to an expansion of the existing, permitted landfill at the Defendant's Gallatin facility, those costs will be significantly lower than those projected at trial, which were based on *off*-site relocation.[18]

The State of Tennessee is equally concerned with protecting the public and protecting the environment. As Tennessee's environmental regulatory authority, TDEC is charged with representing the citizens of Tennessee, so it has responsibility to consider both environmental and economic concerns in making its regulatory decisions. The corrective-action determination it has reached with respect to the sites at Defendant's Gallatin plant represents a proper balancing of those interests.

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[17] *See* Testimony of John Kammeyer, RE 237, Page ID # 9520 (relating that "TVA's current estimated cost for closure in place at Gallatin is 230 million").

[18] *See* Testimony of John Kammeyer, RE 237, Page ID # 9520 (relating that "TVA's estimated cost for the excavation and offsite relocation of CCR [coal-ash] material . . . is approximately 2 billion").

The State supports the remedy ordered by the district court in this case, as it comports with TDEC's own determination.

CONCLUSION

For the reasons stated, the judgment of the district court should be affirmed.

Respectfully submitted,

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Attorney General & Reporter

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Solicitor General

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Environmental Division

Dated: March 22, 2018

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CERTIFICATE OF COMPLIANCE

1. This document complies with the length limited of Fed. R. App. P. 29(a)(5) because, excluding the parts of the document exempted by Fed. R. App. P. 32(f) and Fed. R. App. P. 27(a)(2)(B), this document contains 3,869 words.
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Dated: March 22, 2018

s/Emily B. Vann
EMILY B. VANN
Assistant Attorney General
Counsel for Amicus Curiae State of Tennessee

CERTIFICATE OF SERVICE

I hereby certify that on March 22, 2018, a true and correct copy of the foregoing Brief of the State of Tennessee as *Amicus Curiae* in Support of Plaintiffs-Appellees was filed with the Clerk of the United States Court of Appeals for the Sixth Circuit via the Court's CM/ECF system, which will serve an electronic copy on all counsel of record who are registered CM/ECF users.

s/Emily B. Vann
EMILY B. VANN
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Message

From: Aspatore, Amanda [AAspatore@nma.org]
Sent: 3/7/2018 11:39:24 PM
To: Goodin, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3eac342f280a4b9db4079c81f66d1913-JGoodin]; Ross, David P [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=119cd8b52dd14305a84863124ad6d8a6-Ross, David]
Subject: Thank You

Dave and John –

Thank you both so much for meeting with me last week. I really appreciate your taking the time to talk with me about issues important to the mining industry, and I look forward to participating in further stakeholder engagement as the Office of Water moves forward on its initiatives. I hope that you are both having a good evening!

Sincerely,
Amanda

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Message

From: Bond, Alexander [ABond@eei.org]
Sent: 4/18/2018 5:11:25 PM
To: Ross, David P [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=119cd8b52dd14305a84863124ad6d8a6-Ross, David]; Leopold, Matt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4e5cdf09a3924dada6d322c6794cc4fa-Leopold, Ma]
CC: Veney, Carla [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c354b58bf2b1464d8afac7bbd2a7a88c-CVeney]; Mills, Derek [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0b8b3681245c47d18908fd79db50a843-Mills, Dere]; Penman, Crystal [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=93662678a6fd4d4695c3df22cd95935a-Penman, Crystal]
Subject: Direct hydrological connection meeting request

David & Matt –

Hope all is well with both of you—and, Matt, I hope your travel home last week went smoothly. We were hoping to find some small window of time on both (or at least one of) your schedules in the next few weeks to discuss the direct hydrological connection set of issues—hopefully before May 10 given travel schedules of some of our internal folks. Our intent is to focus discussion on some of the substantive issues, but also some strategic options that may be available, knowing that the issue is moving on both the judicial and regulatory fronts. Any availability would be wonderful, and we know that you are both extremely busy at the moment, so we are more than happy to be flexible.

Thank you so much!

Alex

--
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