

Dr. Dennis Lee Forsgren, Jr.,
Deputy Assistant Administrator
Office of Water
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

September 21, 2017

Dear Dr. Forsgren,

Thank you for the attention you and your team gave to the issue of the 2016 effluent limitation guidelines (ELGs) on unconventional oil and gas wastewater (“2016 ELGs for UOG wastewater”) during the Environmental Protection Agency (EPA) Office of Water Stakeholder Coffee on June 28, 2017, and in several follow-up conversations. The undersigned trades, including the American Petroleum Institute (“API”), the Independent Petroleum Association of America (“IPAA”), and the American Exploration and Production Council (“AXPC”), share the administration’s objective of sound environmental regulation. However, we believe that the 2016 effluent limitation guidelines (ELGs) for unconventional oil and gas (UOG) wastewater (1) rely on an improper definition of ‘unconventional’ that continues to cause harm to conventional operators in Pennsylvania, (2) were established through a flawed procedure, and (3) remain environmentally unsound because they discourage the development of more technologically advanced treatment technologies. We request that this situation be remedied through revision of the definition of unconventional wastewater and the establishment of appropriate pretreatment standards.

In addition, we support the petition which the Pennsylvania Grade Crude Coalition (PGCC) recently submitted to EPA, asking EPA to reconsider the 2016 ELGs for UOG Wastewater so that it may be based upon accurate information. We reiterate PGCC’s request for EPA to issue an administrative stay for the rule, or otherwise suspend its enforcement for certain operators while appropriate pretreatment standards are developed.¹

While it is true that only the Pennsylvania Grade Crude Coalition is currently involved with litigation with EPA concerning the 2016 ELGs, the multiple oil and natural gas trades included as signatories to this letter submitted voluminous comments to multiple agency dockets concerning the ELG for UOG wastewater and reiterated in the regulatory reform priorities submitted in May, 2017. These are attached in chronological order. Additionally, a publicly

¹ See Attachment 12, Pennsylvania Grade Crude Coalition, 2017.

owned treatment works (POTW) (the Gulf Coast Authority) has also come forward to indicate that they could be harmed by the rule (see Attachment 10).

I. Background Concerning the Undersigned Trades

Together, the signatories to this letter represent the vast majority of the U.S. oil and natural gas industry, ranging from large producers to independents.

API is the only national trade association representing all facets of the oil and natural gas industry, which supports 9.8 million U.S. jobs and 8 percent of the U.S. economy. API's more than 625 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms. Our members provide most of the nation's energy and are backed by a growing grassroots movement of more than 40 million Americans. API members are subject to effluent limitation guidelines, including those in the Petroleum Refining, Centralized Waste Treatment, and Oil and Gas Extraction Point Source categories.

IPAA represents the thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, that will most directly be impacted by the federal regulatory policies. Independent producers develop about 95 percent of American oil and natural gas wells, produce 54 percent of American oil, and produce 85 percent of American natural gas. Historically, independent producers have invested over 150 percent of their cash flow back into American oil and natural gas development to find and produce more American energy. The IPAA is dedicated to ensuring a strong, viable American oil and natural gas industry, recognizing that an adequate and secure supply of energy is essential to the national economy.

AXPC is a national trade association representing 33 of America's largest and most active independent natural gas and crude oil exploration and production companies. The AXPC's members are "independent" in that their operations are limited to the exploration for and production of natural gas and crude oil. Moreover, its members operate autonomously, unlike their fully integrated counterparts, which operate in different segments of the energy industry, such as refining and marketing. The AXPC's members are leaders in developing and applying the innovative and advanced technologies necessary to explore for and produce natural gas and crude oil that allows our nation to add reasonably priced domestic energy reserves in environmentally responsible ways.

II. Summary of Concerns with the 2016 ELG for UOG Wastewater

Our concerns with the 2016 ELG for UOG wastewater are as follows:

- When finalizing the 2016 ELGs for UOG wastewater, EPA modified and broadened the definition of 'unconventional' beyond that which was submitted for public comment, rejecting or ignoring API's comments that predicted negative consequences for industry.

- This federal rule rested on extremely limited analysis – relying on circular logic finalized during highly coincidental EPA political timeframes.
- When foreseeable consequences came to light, EPA chose to “solve” the problem with a compliance extension deadline for sources that existed prior to the final rule rather than institute an actual pretreatment standard.

Although the current consequences may be limited to traditional operations in Pennsylvania and a particularly innovative political subdivision in Texas, the development of the direct final rule runs contrary to both the Administrative Procedure Act and the procedural requirements concerning the ELGs. We believe that the precedent set by the circular logic involved should be a concern to every industry governed by ELGs.

These concerns are described below in more detail.

A. EPA’s definition of ‘unconventional’ broadened substantially from the time it was proposed to finalization of the ELG for UOG wastewater.

When finalizing the June 2016 ELGs for UOG wastewater, EPA relied on a definition of unconventional that had not been submitted for public comment. Therefore, the stakeholder community could not prevent the unintended consequences. We understand that certain entities within EPA may be describing this differently. For example, during the June 2017 Office of Water Stakeholder Coffee, one of EPA’s staff inquired whether the problem occurred because a small group of operators failed to read the draft rule. This is simply untrue.

EPA’s definition of “unconventional” changed substantially and in a predictably problematic way between publication of the 2015 proposed ELG for UOG wastewater and finalization of the 2016 ELG for UOG wastewater. The 2015 Proposed ELG for UOG wastewater defined “unconventional oil and gas” as “crude oil and natural gas produced by a well drilled into a low porosity, low permeability formation (including, but not limited to, shale gas, shale oil, tight gas, tight oil.”² This definition does not include conventional formations. The final 2016 ELG for UOG wastewater broadened that definition by removing “low porosity, low permeability” - defining UOG as “crude oil and natural gas produced by a well drilled into a shale and/or tight formation.”³

API’s 2015 comments urged EPA to establish an ELG based on the characteristics of the water, rather than its formation of origin. In fact, API’s comments noted that EPA’s proposed definition of “unconventional oil and gas (UOG)” “would likely create a number of unintended consequences for industry, including overly broad categorization of “unconventional” wells....[additional obligations]...and uncertainty” concerning applicability (see Attachment 1).

EPA has not yet fully explained how expanding its definition of UOG would help contain an overly broad characterization of unconventional wells and provide the industry

² See 80 Fed. Reg. 18577 (April 7, 2015) at 18579

³ 81 Fed. Reg. 41845 (June 28, 2016).

with further certainty. In fact, it seems that EPA themselves may not have fully reflected upon it, given that the only additional “help” in the preamble appeared to be a reference on Federal Register page 41851 to the Technical Development Document (dated June 2016, and posted at or around the same time as the final rule). Pages 14-19 of the Technical Development Document, largely point to Appendix F (specifically Tables F-3 and F-4, EPA classifies formations as “shale” or “tight” based on a similar listing in an U.S. Energy Information Administration document (Table 9.3 of the Assumptions to the 2014 Annual Energy Outlook).⁴ To our knowledge, this is the first time EPA classifications have been used for federal regulatory purposes.

Certainly the tables upon which EPA’s new definition of ‘unconventional’ relied had not been vetted with individual state definitions. The referenced tables listed the Devonian, Clinton-Medina, & Tuscarora formations as unconventional – despite the fact that those formations had been developed for decades in Pennsylvania by “conventional” wells. For example, in PA, any shale formation above the Elk Sandstone and any tight formation other than shale (such as the Devonian, Clinton-Medina, & Tuscarora), are defined as Conventional, and there are tens of thousands of those “shallow” vertical wells in PA, which are apparently now being defined by EPA as “Unconventional” for this rule and therefore (or at least presumably) subject to the POTW prohibition.

Under these circumstances, it is perhaps not surprising that EPA’s new ill-conceived definition led to unintended consequences; however, the problems became first evident in Pennsylvania – reportedly the main source for EPA’s limited and largely regional data set, and a state where EPA indicated they had conducted extensive outreach.

According to the Pennsylvania Grade Crude Coalition in Attachment 11, “The newly established state discharge standards require oil and gas wastewater to be distilled into a stream of pure water for discharge...[requiring] a minimum capital investment of \$10 million to set up a wastewater distillation unit at each water treatment facility. In addition to paying for the unit and hiring special manpower to operate it, the costs take the wastewater disposal price from a current \$.08 to over \$.20 per gallon, more than \$.12 or 150% price increase. Moreover, while these new regulations define the distillate discharge, they provide no feasible means to allow disposal of the crystallized salts and, in fact, prevent their discharge into existing landfill.” They pointed out that the associated upgrades at the Waste Treatment Corporation in Warren, Pennsylvania encouraged some operators who could not afford the additional charges to curtail production. It is therefore important that the remaining centralized treatment facilities in Franklin, Josephine, Creekside, Ridgeway, Brockway, and Reynoldsville should continue to be allowed to serve oil and gas operators.

Unfortunately, when these problems came to light, rather than addressing the actual problem within the ELG, EPA included in the preliminary 2016 ELG program plan what it described as a first-time request concerning the use of POTWs to treat conventional wastewater. Months later, EPA initiated a mere compliance extension through a direct final rulemaking applicable only to existing dischargers. These efforts did nothing to address the fundamental flaws in the rule.

⁴ See, e.g., https://www.epa.gov/sites/production/files/2016-06/documents/uog_oil-and-gas-extraction_tdd_2016.pdf

B. The 2016 ELGs for UOG wastewater rested on multiple analytical deficiencies.

Each of these arguments is outlined in great detail in API's comments to the 2015 proposal, and was largely unaddressed in the final rule.

1. First, the 2016 ELGs used **disposal** technology rather than **discharge** technology as the baseline for its technological analysis of pollutant reduction technology.

Although EPA disagreed, we believe this was impermissible. Disposal technology and the availability of underground injection control wells should not be used to justify a non-consumptive water treatment option. As such, we believe that the 2016 ELGs inhibit rather than promote the development of additional on-site water treatment technologies and more technologically sophisticated POTWs.

API also cited in our 2015 comments a 2014 report in which the Artemis Project ("Artemis") noted that development of water treatment technologies had traditionally been deterred by the stationary nature and expense of large water treatment facilities – but observed the Pennsylvania Marcellus shale was contributing to smaller, mobile water treatment options thanks to the type of fiercely competitive niche market that helped shrink and improve cell phones. Artemis predicted that small-scale, onsite solutions developed in the Marcellus could be adapted for other industries.⁵

EPA's analysis for the rulemaking failed to include at least one POTW, which later submitted comments to the record stating that the 2016 ELGs pose an unnecessary burden on their expansion. The Gulf Coast Authority (GCA), which owns and operates "industrial" POTWs in Texas, submitted to EPA Docket EPA-HQ-OA-2017-0190 in May 2017 a letter outlining concerns similar to those expressed by industry. GCA requested that EPA modify the 2016 ELGs to exempt POTWs whose equipment is designed to treat unconventional oil and natural gas wastewater. Their letter stated that it is an unnecessary regulatory and economic burden on local governments to prohibit them from designing and building plants to treat UOG wastewater merely because the treatment plants would be publicly owned, and by definition, POTWs. This letter is also included. Trade association conversations with both the GCA and the Pennsylvania Grade Crude Coalition revealed that each party was unaware of the harm suffered by the other until summer, 2017.

2. Second, the 2016 ELGs used a temporary moratorium on POTW use as the baseline from which the Agency concluded there are no costs or impacts attributable to the rule.

EPA was able to conclude that this would not significantly increase industry costs only because a temporary and voluntary moratorium was in place pending the development of pre-treatment standards. In 2011, the Pennsylvania Department of Environmental Protection ("PDEP") asked all companies to voluntarily refrain from sending shale wastewater to POTWs.

⁵ See The Artemis Project, *Building Momentum for Advanced Water Treatment Solutions: The Marcellus Effect*, 2014.

Industry complied, in part because EPA had indicated that pre-treatment standards would be under development. From a policy perspective, it is problematic that EPA would use a voluntary moratorium as the basis for a zero-cost-analysis to justify a future ban – and this may deter other industries from similar agreements in the future.

3. Third, EPA’s pass-through analysis a) did not identify any specific pollutant of concern, b) did not effectively analyze the concentration of those pollutants in UOG wastewater, and c) did not evaluate the likelihood that those specific pollutants would pass-through POTWs to waters of the United States.

Without adequate scientific justification, EPA apparently based its rule on the presumption that pollutants in UOG wastewater would “pass-through” the POTW. EPA however did not identify any specific pollutants in the proposed rule. It seemingly declared UOG wastewater to be a pollutant. In the final rule, EPA clarified that the pollutant of concern was “total dissolved solids” (TDS). TDS, however, is not a pollutant – it is a bulk parameter that is used as a surrogate to measure the constituent “dissolved solids” in TDS. Authority exists for the proposition that EPA cannot regulate discharges of a surrogate without establishing the relationship for the pollutant and the surrogate. EPA did not conduct such analysis. “Pass-through” is measured relative to a water quality standard for the pollutant. Pass-through cannot be demonstrated simply because some pollutant in the POTW’s influent is also present in the POTW’s effluent – it must be present above some permissible level.

Table 1: Summarizing Deficiencies in EPA’s Approach to Pass-Through and Interference (extracted from p. 19 of API’s July 2015 Comments to the Proposed Rule)

Essential Prong of Pass-Through and Interference Analysis	Problematic Aspects of EPA’s Analysis
(1) identify pollutants of concern	<ul style="list-style-type: none"> • EPA’s analysis did not identify any specific pollutants of concern, instead determining that the produced water itself was the pollutant of concern regardless of its actual constituents and their concentrations. This sweeping definition oversteps EPA’s statutory authority by effectively precluding access to Congressionally mandated removal credits and making it impossible for states to implement a different, equally stringent standard as allowed per the CWA.
(2) evaluate the presence and concentration of those pollutants of concern in the industry’s effluent	<ul style="list-style-type: none"> • EPA did not identify the presence of pollutants of concern in industry’s effluent • EPA’s analysis discussed various types of pollutants found in produced water but never characterized the pollutants in the produced water. • In fact, EPA’s own analysis revealed that the constituents of produced water were far too variable to universally characterize.

<p>(3) evaluate the likelihood that these pollutants of concern could cause the POTW to exceed its NPDES permit limits</p>	<ul style="list-style-type: none"> • This was missing from EPA’s analysis because EPA never identified the pollutant(s) of concern. • EPA discussed the potential for TDS to pass through a POTW but TDS is a bulk parameter - not a pollutant. • EPA was also unable to identify an applicable limit for TDS from which it could evaluate pass-through potential
<p>(4) if pass-through or interference are expected to occur, compare the removal capability of the discharging industry to the removal capability of a “well-operated POTW.”</p>	<ul style="list-style-type: none"> • EPA began, rather than ended its analysis, with removal efficacy in a way that would obviate differences between pretreatment standards and the NPDES program. • EPA essentially circumvented the pass-through analysis by citing to industry’s ability to meet zero-discharge requirements under the NPDES program • In doing so, EPA ignored that its technological comparisons must be made between “discharging” industries and POTWs “performing secondary treatment” – not to disposal options.

C. The 2016 ELGs demonstrate limited internal coordination and potential political motivations.

Different offices of EPA reached different conclusions over how future regulation of produced waters should be addressed, suggesting a lack of internal coordination despite data-sharing among offices:

- ***The highly coincidental timing of activities for the Draft Assessment on the Potential Impacts to Drinking Water Resources from Hydraulic Fracturing Activities (“Draft Assessment”) and the 2016 ELGs may suggest a political connection.*** In addition to the 2016 ELG for UOG wastewater being open for comment during the release of the Draft Assessment, the pre-publication version of the study was released on June 13 – one day prior to the June 14 and June 15 public meeting of the Science Advisory Board regarding the Draft Assessment. The Direct Final Rule for the 2016 ELGs was published in the Federal Register on December 12, 2016 – and EPA’s final assessment on the Impacts to Drinking Water Resources from Hydraulic Fracturing Activities was publicly released only one day later on December 13. Certainly EPA is a large organization with many concurrent efforts; however, it seems highly coincidental that key events in these two efforts would consistently align so closely – and yet one office would suggest a holistic approach while another rushed forward with a limited, largely regional data set.
- ***In light of the timing mentioned above, it is surprising that the Office of Research would recommend a holistic approach while the Office of Water was moving quickly to finalize fragmented regulations relying on a limited and largely regional data set.*** On June 4 2015, EPA’s Office of Research released its Draft Assessment, which recommended that EPA should take a more holistic approach to the management of produced water. Although EPA’s Office of Water could have easily heeded that recommendation and halted the comment period on ELGs for UOG

wastewater until more data was available from its Centralized Waste Treatment (“CWT”) Facility study. Industry recommended this approach, certain that the CWT study would provide more expansive data for produced water characterization. Additionally, with the voluntary moratorium on sending UOG wastewater to POTWs, there would seem to have been no additional risk with delay – particularly since EPA itself used the aforementioned moratorium to justify its zero cost analysis. Instead, EPA proceeded with the comment period.

- ***The CWT study first initiated in the fall of 2014 has – according to information provided by EPA at the June 2017 Office of Water Stakeholder Coffee – gathered financial and operational information from only nine (9) CWT facilities and wastewater characterization information from only two (2) facilities.*** This is a sharp contrast to other efforts. For example, in December 1, 2015, Oklahoma’s Governor Mary Fallin announced the formation of a fact-finding group to look at ways water produced in oil and natural gas operations may be recycled or reused. In April 2017, that group published a 266 page report in which characterized Oklahoma produced water and its potential uses, as well as provided an action plan.⁶ Similarly, in December 2015, the National Academies of Sciences, Engineering, and Medicine launched a roundtable focused on unconventional hydrocarbon development. They held a workshop on produced water in May 2016 and released its proceedings (including example characterizations of produced water) in 2017.⁷ The Groundwater Protection Council, a group of state groundwater regulators, completed its produced water report between 2014 to publication in 2015.⁸

D. From an environmental perspective, science-based pretreatment standards are preferable to bans.

We believe that appropriately established numeric ELGs are preferable to bans from an environmental perspective because actual discharge standards permit the safe return of usable water to the water cycle.

Recognizing the importance of EPA’s responsibilities to the environment, we respectfully note the following two points:

- ***The 2016 ELGs provided no additional clean water benefits.*** The permits associated with POTWs had previously prohibited them from accepting waters which cannot be treated to within their discharge limits, and would continue that prohibition in the absence of the 2016 ELG.
- ***The 2016 ELGs may in fact have unintended environmental consequences.*** Permanently removing one of the few discharge options by which industry can return

⁶ See: <https://www.owrb.ok.gov/2060/pwwg.php>

⁷ See: <https://www.nap.edu/catalog/24620/flowback-and-produced-waters-opportunities-and-challenges-for-innovation-proceedings>

⁸ See: http://www.gwpc.org/sites/default/files/Produced%20Water%20Report%202014-GWPC_0.pdf

water to the hydrologic cycle based only on today's technology is environmentally unsound – particularly when the aforementioned permit restrictions already apply.

E. Industry has shared their concerns with EPA in a multitude of ways since the Proposed Rule was issued in 2015.

A listing and links for the various comments we have submitted to EPA on this issue since 2015 are attached for your convenience, as summarized in the table below:

Table 2: List of Attached Previously Submitted Comments and Associated Page Numbers

Timeframe	Commenting Trades	Attachment and Page Number
July 2015	<ul style="list-style-type: none"> API filed comments to the proposed ELG, noting deficiencies in its analysis and predicting unintended consequences. 	Attachment 1 Page 12
	<ul style="list-style-type: none"> IPAA filed comments to the proposed ELGs. 	Attachment 2 Page 55
	<ul style="list-style-type: none"> AXPC filed comments to the proposed ELGs. 	Attachment 3 Page 68
July 2016	<ul style="list-style-type: none"> API specifically addressed the potential for unintended regulatory consequences of the recently released ELGs in our comments to the 2016 Preliminary Effluent Guidelines Program Plan 	Attachment 4 Page 75
October 2016	<ul style="list-style-type: none"> API filed comments to the Proposed Direct final rulemaking, noting with disappointment that compliance deadline extensions are in fact second best alternatives to following appropriate procedures and fulfilling information collection activities during the initial rulemaking process 	Attachment 5 Page 86
March 2017	<ul style="list-style-type: none"> IPAA included the ELGs for UOG wastewater as part of its regulatory reform submittal regarding rules inhibiting domestic manufacturing 	Attachment 6 Page 90
May 2017	<ul style="list-style-type: none"> API specifically included the ELGs as part of its regulatory reform submittal to EPA 	Attachment 7 Page 108
	<ul style="list-style-type: none"> IPAA specifically included the ELGs as part of its regulatory reform submittal to EPA 	Attachment 8 Page 143
	<ul style="list-style-type: none"> AXPC specifically included the ELGs as part of its regulatory reform submittal to EPA 	Attachment 9 Page 179
	<ul style="list-style-type: none"> The Gulf Coast Authority (GCA) submitted as part of their regulatory reform letter to EPA a request to 	Attachment 10 Page 194

	modify the 2016 ELGs to exempt POTWs whose equipment is designed to treat unconventional oil and natural gas wastewater.	
July 2017	<ul style="list-style-type: none"> The Pennsylvania Grade Crude Coalition submitted various documents to EPA, including but not limited to the attached documentation of impacts and costs. They were not asked to be a signatory to this letter to avoid a conflict with their pending litigation. 	Attachment 11 Page 198
August 2017	<ul style="list-style-type: none"> The Pennsylvania Grade Crude Coalition submitted a petition to EPA requesting reconsideration of the 2016 ELGs for UOG Wastewater. 	Attachment 12 Page 201

III. Conclusion


We reiterate our concerns about the environmental value of this rule in light of the pre-existing permit requirements with which POTWs must comply, and also note the above outlined definitional, analytical, and procedural concerns. The totality of these circumstances is significant: 1) cursory analysis failing to identify a pollutant of concern and relying on non-discharge technology; 2) a cost assessment relying on an interim temporary ban and the temporary economics of disposal, and 3) a timeline closely mirroring key events in EPA’s Draft Assessment of Potential Drinking Water Impacts from Hydraulic Fracturing Activities. Together, these led to a definition of ‘unconventional’ that 1) had previously been used only in statistical contexts; 2) was contrary to advice from the impacted industry and 3) conflicted with definitions of ‘conventional’ in the very region where the majority of EPA’s data originated.

We hope that you will address these by 1) reexamining and properly limiting the definition of unconventional wastewater 2) establishing actual numeric pre-treatment standards for unconventional wastewater and 3) carefully reviewing any release of the pending Centralized Waste Treatment (CWT) study for the same types of definitional, analytical, and procedural concerns outlined in this letter.

We hope that you will not hesitate to contact us with any questions concerning this letter, and look forward to working with you to resolve this important issue.

Sincerely,

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