

Lawyer Insights

December 17, 2018

Expert Analysis: Spotlight On Produced Water Management Options Intensifies

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Published in Law360



With produced water volumes on the rise as a result of the growth in oil and natural gas production including water-intensive drilling techniques, stakeholders and regulatory agencies have been increasingly focusing more attention on the development of alternatives for produced water management. Produced water, the characteristics of which may vary depending on the nature of the formation, direction of oil and gas extraction, and additive use, has long been commonly disposed of through underground injection and traditionally been viewed as a waste rather than a resource or commodity. The reuse of produced water for enhanced oil recovery has also commonly occurred and over the past several years, as water recycling technologies have advanced, produced water reuse and recycling operations have substantially expanded. Even so, practical and logistical challenges remain for produced water management including those arising from the quantity and quality of the produced water as well as transportation and storage issues. With various areas of the country experiencing water scarcity concerns or limitations on injection capacity due to pressure or seismicity issues, stakeholders have expressed interest in not only expanding produced water management options, but also allowing produced water to be returned to the hydrologic cycle.

The U.S. Environmental Protection Agency is now evaluating whether to move forward with development of federal regulations allowing broader discharge of produced water to surface waters. As part of the final 2016 Effluent Guidelines Program Plan issued in April 2018, the EPA announced that it would be initiating a study of the management of oil and gas extraction wastewater from onshore facilities.¹ While the EPA study is not expressly limited to the review of any specific effluent limitation guidelines, or ELGs, for onshore facilities, the two ELGs governing the discharge of oil and gas extraction wastewaters, particularly as these relate to onshore discharges of produced water, are a focal point of the review: (1) the oil and gas extraction effluent guidelines at 40 C.F.R. Part 435 (Oil and Gas Extraction Point Source Category) and (2) the centralized waste treatment effluent guidelines at 40 C.F.R. Part 437 (Centralized Waste Treatment Point Source Category).

As background, the oil and gas extraction effluent guidelines including a zero-discharge limitation for onshore discharges from oil and gas extraction facilities were first promulgated decades ago.² Except in limited circumstances (e.g., discharges of produced water for beneficial use in agricultural or wildlife propagation west of the 98th meridian), such discharges directly to surface waters are generally prohibited.³ A prohibition on the discharge of pollutants from onshore unconventional oil and gas, or UOG, extraction facilities to publicly owned water treatment works, or POTWs, stemming from concerns regarding potential constituents present in wastewater from the Marcellus Shale region, was adopted in

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2016.⁴ After becoming aware that its initial understanding that all facilities that would be subject to the rule were meeting zero-discharge requirements was not correct and a rule challenge, the EPA subsequently added a three-year compliance extension for certain existing facilities lawfully discharging to POTWs. The EPA is currently gathering information from affected companies to determine whether any additional action is appropriate.⁵

The effluent guidelines governing centralized waste treatment, or CWT, facilities were first promulgated in 2000.⁶ CWT facilities may accept for treatment, a variety of wastes and wastewaters including oil and gas extraction wastewaters for discharge either directly to waters of the U.S. or indirectly via POTWs. Specifically, a CWT facility is defined as any facility that treats any hazardous or nonhazardous industrial wastes, hazardous or nonhazardous industrial wastewater, and/or used material received from off-site. In addition, a CWT facility can include both a facility that treats waste exclusively from off-site and a facility that treats waste generated on-site as well as offsite.⁷ While it is common for a CWT facility to receive wastes from many sources, it is also the case that a CWT facility may accept wastes from only a single ELG category. The EPA has noted that since the CWT effluent limitation guidelines were not developed specifically for wastes from oil and gas extraction, the technology basis and effluent limitations may not adequately control those wastewaters and furthermore, that permitting and control authorities have not authorized facilities treating oil and gas extraction wastewater in a consistent manner.⁸ Notwithstanding recent attempts by the EPA to obtain a better understanding of how CWT facilities are being used and ELGs are being implemented, the types of wastewaters being accepted and the basis for National Pollutant Discharge Elimination System, or NPDES, permits issued to these facilities have not yet been fully confirmed.

As part of the EPA study, the EPA has been holding in-person meetings with interested stakeholders including state regulatory agencies and members of industry, academia, tribes and nongovernmental organizations. In October of this year, the EPA held a public meeting to report on the results of the input it has received to date and to take additional input from stakeholders on providing new approaches for produced water management.⁹ The EPA's information collection efforts are important to develop an accurate factual record particularly in light of the EPA's recent experience with the 2016 rule-making adding the prohibition on discharge of pollutants from onshore unconventional extraction facilities to POTWs.

Prior to any regulatory action based on the EPA study, a broad spectrum of issues will need to be fully evaluated. Various stakeholders have commented on the benefits of maximizing management options noting that allowing for a broader discharge of produced water to surface waters would add water to the hydrologic cycle, potentially lower demand for freshwater in oil and gas activities, and address injection capacity issues. In addition, it has been suggested that the EPA consider establishing a federal regulatory framework for produced water consistent with the manner in which it regulates effluent from the other industries (i.e., effluent criteria that would allow environmentally protective discharges). At the same time, stakeholders cautioned the EPA to avoid jeopardizing currently authorized discharges west of the 98th meridian. Some commenters emphasized that while providing an appropriate regulatory framework at the federal level was important, regional differences should be recognized and that, if not currently in place for the discharge of oil and gas extraction wastewater, delegation of the NPDES program to the states may provide for a more streamlined permitting process. Others expressed concerns regarding variability and lack of knowledge regarding produced water characteristics noting that much data is proprietary. Concerns were also expressed regarding the need to develop adequate treatment technologies and to

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address solid waste management issues associated with residuals as well as potential impacts to water quality. The EPA has also been requested to clarify the applicability of CWT effluent guidelines to

facilities that treat oil and gas extraction wastewaters.¹⁰ A white paper on these issues is expected to be issued by the EPA in the first quarter of 2019. It is anticipated that the EPA will make a decision on what, if any, regulatory changes it will initiate by the summer of 2019.

In the meantime, on Nov. 9, 2019, pursuant to a memorandum of understanding entered into earlier this year, the EPA and the state of New Mexico, released for public input a draft white paper outlining opportunities to streamline existing federal and state regulatory frameworks and facilitate produced water management in New Mexico (draft EPA/New Mexico white Paper).¹¹ The draft EPA/New Mexico white paper begins by highlighting that 95 percent of the state is currently in a drought and identifies, among other things, the need to continue to explore incentives to encourage reuse of produced water and develop a better understanding of the composition of produced water as well as treatment effectiveness for produced water in New Mexico. While the EPA and New Mexico anticipate finalizing the draft white paper by the end of the year, it is expected that before New Mexico can comprehensively address opportunities to improve the regulatory framework at the state level, the EPA's path forward will need to be ascertained.

The constructive resolution of the issues being considered as part of these initiatives and developments is of vital importance not only to the oil and gas industry, but also to water users and managers.

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Notes

¹ See Final 2017 Effluent Guidelines Program Plan (April 2018) at https://www.epa.gov/sites/production/files/2018-05/documents/final-2016-eg-plan_april-2018.pdf.

² See 44 Fed.Reg. 22,069 (April 13, 1979).

³ See 40 CFR Part 435.

⁴ See 44 Fed.Reg. 418450 (June 28, 2016). See also Technical Development Document for the Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Point Source Category (June 2016) at https://www.epa.gov/sites/production/files/2016-06/documents/uog_oil-and-gasextraction_tdd_2016.pdf.

⁵ See 81 Fed.Reg. 88126 (Dec. 7, 2016) (describing the basis for the compliance extension). See also *Pa. Grade Crude Oil Coal. v. EPA*, No. 16-4064 (3d. Cir. filed Nov. 7, 2016). The EPA requested, and was granted, a voluntary remand without vacatur and remains subject to the court's continuing jurisdiction to allow the agency to consider additional information relevant to the 2016 rule-making and take any follow up action. Based on the EPA's latest status report filing, the EPA is currently analyzing additional information it has obtained from eight companies.

⁶ See 65 Fed.Reg. 81242 (Dec. 22, 2000).

⁷ 40 C.F.R. § 437.2(c).

⁸ See Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes (May 2018) at https://www.epa.gov/sites/production/files/2018-05/documents/cwt-study_may-2018.pdf.

⁹ See EPA's Oct. 8, 2018, Public Meeting Presentation at <https://www.epa.gov/eg/oil-and-gasextraction-wastewater-management-study-documents>.

¹⁰ See Docket EPA HQ-061-2018-0618 at <https://www.regulations.gov/docket?D=EPA-HQ-OW2018-0618>.

¹¹ See Oil and Natural Gas Produced Water Governance in the State of New Mexico-Draft White Paper (Nov. 9, 2018) at <http://www.emnrd.state.nm.us/wastewater/index.html>.

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