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Balancing a Watershed Approach to Stormwater Management

Sean Bothwell & Kaitlyn Kalua***

Introduction: Impacts of Industrial Stormwater Pollution

Stormwater, the runoff from rain and snowmelt that fails to absorb into soil or plants, often mobilizes pollutants from yards, streets, industrial facilities, construction sites, and other developed sites into waterways and the ocean.¹ Material on industrial sites and facilities often remain uncovered and exposed to the outdoors, allowing rain to pick up a variety of pollutants ranging from bacteria, metals, oil and grease, and other organic materials. This runoff transports contaminants into nearby rivers, lakes, coastal waters, or municipal storm sewer systems, degrading water quality and harming both the environment and public health.²

In California, over half of the state's lakes, bays, wetlands, and estuaries are too polluted to swim, drink, or fish.³ A range of metals—from copper, lead, selenium, mercury, and organic compounds regularly used in industrial processes—consistently exceed water quality criteria in areas of California and contribute to this pollution.⁴ Meanwhile, low income communities throughout California suffer disproportionately from toxic pollution caused by industrial operations—such as scrap metal yards,

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1. 40 C.F.R. §122.26(b)(13) (1983); STATE WATER RES. CONTROL BD., STRATEGY TO OPTIMIZE RES. MGMT. OF STORMWATER 3 (2018), <https://perma.cc/L9NK-4SGY>.

2. SARAH CHIANG ET AL., INDUSTRIAL STORMWATER REGULATORY COMPLIANCE IN LOS ANGELES COUNTY 5–7 (2016), <https://perma.cc/D3J3-B7ZC>.

3. See STATE WATER RES. CONTROL BD., 2014 AND 2016 CAL. INTEGRATED REPORT CLEAN WATER ACT SECTIONS 303(D) AND 305(B) (2017), <https://perma.cc/M5WX-LNPD>.

4. See, e.g., Ken Farfsing and Richard Watson, *Stormwater Funding Options: Providing Sustainable Water Quality Funding in Los Angeles County*, CAL. CONTRACT CITIES ASS'N AND LOS ANGELES CTY. DIV. LEAGUE OF CAL. CITIES (May 21, 2014), <https://perma.cc/YTE4-FZDK>.

landfills, waste transfer stations, cement processors, and auto-dismantlers—due to the proximity of neighborhoods to these industrial sites. The regular discharge of toxic metals, bacteria, plastics, and trash into local waterways affects the health of aquatic ecosystems and makes nearby rivers and beaches unsafe to use and enjoy.⁵

There are approximately 10,000 industrial stormwater dischargers in California, including oil refineries, landfills, manufacturing plants, auto yards, and scrap metal recyclers.⁶ These industrial facilities discharge highly hazardous chemicals (such as dioxins and PCBs), heavy metals (such as mercury and copper), oil and grease, and bacteria into California waters.⁷ The impact to our water supplies, ecosystems, and human health from industrial polluted runoff is pervasive. As a result, myriad waters in the state are so polluted by industrial stormwater discharges that they are no longer safe to use and have been designated as “impaired.”⁸

Proper management, treatment, and capture of stormwater, however, can: 1) improve water quality; 2) benefit aquatic ecosystems; 3) increase water supplies through groundwater infiltration; 4) manage flood control; and 5) protect public health.⁹

This article explores and analyzes the balancing act by the State Water Board to incentivize stormwater capture while protecting water quality in its adoption of the latest Amendment to the Industrial Stormwater Permit in 2018. Section I reviews the framework for regulating stormwater under the Clean Water Act and the role of the State Water Board in implementing this framework. Section II evaluates the changing regulatory landscape within California that led to the State Water Board’s use of alternative compliance to incentivize stormwater capture. Section III examines the adequacy of the State Water Board’s 2018 Industrial General Permit as a mechanism for capturing stormwater while fulfilling the agency’s obligation to protect water quality standards. Finally, Section IV concludes, albeit not without critique, that with the adoption of enforceable numeric standards under the new Industrial General Permit, California leads the way in regulating industrial stormwater runoff nationwide.

5. See generally CHIANG ET AL., *supra* note 2.

6. See CAL. STATE WATER RESOURCES CONTROL BOARD, NPDES GENERAL PERMIT FACT SHEET FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES, NPDES No. CAS000001 1, 12 (June 2015), <https://perma.cc/D4N5-LNWX> [hereinafter “FACTSHEET”]; see e.g., S.B. 205, 2019 Leg., Reg. Sess. (Cal. 2019) (Bill Analysis), available at <https://perma.cc/ZFP6-PJFF>.

7. See e.g., OFF. OF WATER, INDUSTRIAL STORMWATER FACT SHEET SERIES, U.S. ENVTL. PROTECTION AGENCY 1, 2 (Dec. 2006), <https://perma.cc/6HXU-F3T9>.

8. CAL. STATE WATER RESOURCES CONTROL BOARD, *supra* note 6, at Appendix 3.

9. *Id.* at 4.

I. Regulating Industrial Stormwater Pollution under the Clean Water Act

In acknowledgement of the “accelerating environmental degradation of rivers, lakes, and streams,”¹⁰ the United States Congress enacted the Clean Water Act in 1972 to restore and maintain the chemical, physical, and biological integrity of the waters of the United States.¹¹ The Clean Water Act established the goal of eliminating the discharge of pollutants to waters of the United States,¹² and prohibits “the discharge of any pollutant by any person” into the waters of the United States without a permit issued under the National Pollutant Discharge Elimination System (NPDES).¹³

The Clean Water Act distinguishes two different standards for discharges under NPDES permits: industrial discharges and municipal discharges.¹⁴ With respect to industrial stormwater discharges, NPDES permits must contain technology-based effluent limitations or more stringent water quality based effluent limitations set forth in the Clean Water Act.¹⁵ Whereas municipal stormwater discharges are regulated by permits to meet water quality standards without specific numerical effluent limits and instead impose “controls to reduce the discharge of pollutants to the maximum extent practicable . . .”¹⁶

The State Water Resources Control Board (State Water Board) has delegated authority to implement the NPDES permit program in California consistent with the Clean Water Act.¹⁷ Specifically, the Porter-Cologne Water Quality Control Act (Porter-Cologne),¹⁸ enacted three years prior to the federal Clean Water Act, designates the State and nine Regional Water Quality Control Boards (Regional Water Boards) as “the principal state

10. Nat. Res. Def. Council, Inc. v. Costle, 568 F.2d 1369, 1371 (1977).

11. Clean Water Act, 33 U.S.C. § 1251(a)(1) (2018).

12. *Id.*

13. Clean Water Act, 33 U.S.C. § 1311(a) (2000); National Pollutant Discharge Elimination System, 33 U.S.C. § 1342 (2018).

14. 33 U.S.C. § 1342(p)(3).

15. *See id.* § 1342(p)(3)(A); 33 U.S.C. § 1311(b)(1)(A), (C) (requiring Best Practicable control Technology (“BPT”) or “any more stringent limitation, including those necessary to meet water quality standards”); *Id.* § 1311(b)(2) (requiring Best Available Technology economically achievable (“BAT”) for toxic pollutants and Best Conventional pollutant control Technology (“BCT”) for conventional pollutants).

16. 33 U.S.C. § 1342(p)(3)(B)(iii); *see also* Defenders of Wildlife v. Browner, 191 D.3d 1159, 1165 (1999) (finding that when the two related sections are read together, 33 U.S.C. § 1342(p)(3)(B)(iii) does not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C)).

17. *See* 33 U.S.C. § 1342(b); Cal. Water Code §§ 13370, 13377 (1987).

18. Cal. Water Code § 13000 et seq. (1969).

agencies with primary responsibility for the coordination and control of water quality.”¹⁹ Thus, the State and Regional Water Boards are responsible for regulating discharges into both surface and groundwater that could affect the quality of state waters, or as necessary to prevent nuisance.²⁰

In 2015, the State Water Board issued the current Industrial General Permit that applies to all stormwater discharges requiring a permit, except construction activity.²¹ The Industrial General Permit implements the requirements of the Clean Water Act through both technology-based provisions and water quality-based standards. The Industrial General Permit sets out four basic requirements for permittees: 1) effluent limitations; 2) receiving water limitations; 3) the implementation of a Stormwater Pollution Prevention Plan; and 4) the development of a Monitoring and Reporting Program.²² Strict compliance with water quality standards is required for dischargers of stormwater associated with industrial activity.²³

A. Effluent Limitations

The Clean Water Act requires that discharges from existing facilities must, at a minimum, comply with technology-based effluent limitations (TBELs) based on the technological capability of dischargers to control pollutants in their discharges.²⁴ There are three basic effluent limitations under the Industrial General Permit: those based on “best practicable control technology currently available” (BPT), “best conventional pollutant control technology” (BCT), and “best available technology economically available” (BAT). Discharges must also comply with any more stringent water quality-based limitations necessary to meet water quality standards.²⁵ TBELs may consist of effluent limitations guidelines established by the EPA, or absent effluent limitations guidelines by the EPA, the State Board

19. Water § 13000.

20. *Id.* Porter–Cologne also requires “waste discharge requirements” must mandate compliance with the applicable regional water quality control plan (also known as “basin plans”). *Id.* §§ 13263(a), 13374, 13377.

21. *General Permit for Stormwater Discharges Associated with Industrial Activities, Order NPDES NO. CAS000001*, STATE WATER RES. CONTROL BD. (July 1, 2015) <https://perma.cc/GQ4A-PSKV>.

22. *Cal. Sportfishing Prot. All. v. River City Waste Recyclers*, 205 F. Supp. 3d 1128, 1137–39 (2016).

23. *Defenders of Wildlife*, 191 F. 3d at 1165.

24. 33 U.S.C. § 1311(b)(1)(C).

25. *Id.*

must establish effluent limitations for NPDES permits on a case-by-case basis using staff's best professional judgment.²⁶

The Clean Water Act establishes standards for TBELs based on the type of pollutant or the type of facility/source involved and establishes two levels of pollution control for existing sources. The first level applies to all pollutants and subjects existing sources that discharge pollutants directly to effluent limitations based on the BPT.²⁷ The second level subjects existing sources that discharge conventional pollutants to effluent limitations based on the BCT.²⁸ Also under the second level, other existing sources that discharge toxic pollutants or nonconventional pollutants are subject to effluent limitations based on BAT.²⁹

B. Receiving Water Limitations

The Industrial General Permit requires compliance with receiving water limitations based on water quality standards,³⁰ which are developed to support "the desired condition of a waterway."³¹ Specifically, facilities operating under the Industrial General Permit may "not cause or contribute to a violation of applicable water quality standards through the facility's stormwater discharges."³² Water quality standards include two components: 1) the designated beneficial uses of the water body; and 2) the water quality criteria sufficient to protect those uses.³³ These uses may encompass activities such as recreation and the propagation of aquatic wildlife, while criteria are the numeric or narrative water quality levels necessary to support those designated uses in specific waters.³⁴

In California, the various Regional Water Boards designate beneficial uses of water bodies within their respective jurisdiction.³⁵ Water quality

26. Clean Water Act, 33 U.S.C. § 1314(b)(1)(B) (2018).

27. *Id.*

28. *Id.* § 1314 (b)(4)(A); *see also* 40 C.F.R. § 401.16 (2019) (list of conventional pollutants).

29. 33 U.S.C. § 1311(b)(2)(A); *see also* 40 C.F.R. § 401.15 (2019) (list of toxic pollutants).

30. Water § 13377.

31. *Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992) (citing 33 U.S.C. § 1313 (2000)); *see also* *Cmtys. for a Better Env't v. State Water Res. Control Bd.*, 109 Cal. App. 4th 1089, 1092 (2003).

32. *Cal. Sportfishing Prot. All.*, 205 F. Supp. 3d at 1138 (citing RJN-A-010; RJN-B-023).

33. *Cmtys. for a Better Env't*, 109 Cal. App. 4th at 1092 (citing 33 U.S.C. § 1313(c)(2)(A) (2000); 40 C.F.R. § 131.3(i) (2015)).

34. *Id.*

35. Water § 13241.

criteria, also known as water quality objectives in California, are then established by Regional Water Boards, the State Board, or, in the event the State does not act as required, by the EPA, to protect the designated beneficial uses of a water body.³⁶ Specifically, the California Toxics Rule protects aquatic life-based beneficial uses by creating numeric water quality criteria that apply in all water bodies in California.³⁷ Other water quality criteria are found in the various basin plans adopted by Regional Water Boards throughout the state.³⁸ Total Maximum Daily Loads (TMDLs) serve as an additional regulatory tool that set the maximum allowable amount of a pollutant in a specific watershed to attain water quality standards. A TMDL is defined as the sum of the allowable loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations), plus the contribution from background sources.³⁹ Discharges covered by the Industrial General Permit are considered point source discharges and must comply with effluent limitations set by the waste load allocations of a TMDL.⁴⁰

The development and implementation of best management practices (BMPs) serve as a primary method to reduce or prevent the presences of pollutants in stormwater discharges under the Industrial General Permit.⁴¹ BMPs consist of “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the waters of the United States” and may include “any type of pollution prevention and pollution control measure necessary to achieve compliance with the General Permit.”⁴² If an individual facility’s stormwater discharge “causes or contributes to an exceedance of a water quality standard, that facility must implement additional BMPs or other control measures tailored to attain compliance with the receiving water limitation.”⁴³

36. Clean Water Act, 33 U.S.C. § 1313(a)–(c) (2000); 40 C.F.R. §§ 131.4–131.6 (2000).

37. 65 Fed. Reg. 31,682, 31,701 (May 18, 2000).

38. Cal. Water Code §§ 10533, 13240 (1969) (“Each regional board shall formulate and adopt water quality control plans for all areas within the region.”).

39. 40 C.F.R. § 130.2(i) (1985).

40. See FACTSHEET, *supra* note 6, at 23.

41. Cal. Sportfishing Prot. All., 205 F. Supp. 3d at 1138 (citing RJN-A-010).

42. *Id.*

43. STATE WATER RES. CONTROL BD., ORDER 2014-0057-DWQ 5–6, <https://perma.cc/ZY5Z-HPWY> [hereinafter ORDER 2014-0057-DWQ].

C. Implementation of Stormwater Pollution Prevention Plan (SWPPP): Monitoring and Reporting

The Industrial General Permit requires all facilities under the permit to develop, implement, and retain a site-specific SWPPP to identify sources of pollution and ensure implementation of the facility's BMPs.⁴⁴ The SWPPP requirements include a site map, authorized non-stormwater discharges (NSWDs) at the facility, and an identification and assessment of potential pollutants sources resulting from exposure of industrial activities to stormwater.⁴⁵ A clear description of the implementation of BMPs at the facility are also required in the SWPPP.⁴⁶ Discharging facilities must conduct an annual evaluation to identify areas where the facility contributes pollutants to stormwater discharges, evaluate the adequacy of the SWPPP to reduce or prevent the presence of pollutants (i.e., pollutant loads), and determine whether additional control measures must be applied under the SWPPP.⁴⁷

The 2014 Industrial General Permit requires a sampling of four storm events per year, however, this monitoring method may not meet compliance requirements for facilities that fall under a TMDL.⁴⁸ Due to the "highly variable" nature of stormwater, four samples over the course of a year may not be sufficient to demonstrate compliance with a TMDL and its effluent limit.⁴⁹ An alternative monitoring scheme may be necessary for TMDL-specific permit requirements, and the 2014 Industrial General Permit leaves the coordination of relevant alternative monitoring schemes to the Regional Water Boards.⁵⁰

II. Changing Landscape: California Using Alternative Compliance to Incentivize Stormwater Capture

As California's stormwater program has evolved, we have witnessed an exchange of enforceability, either by citizens or the Boards themselves, for the perceived trade-off of discharger participation. This trend is concerning, as we replace enforceable standards for burdensome reporting, planning, and exemptions.

44. FACTSHEET, *supra* note 6, at 29; *see also Cal. Sportfishing Prot. All.*, 205 F. Supp. 3d at 1138.

45. FACTSHEET, *supra* note 6, at 29.

46. *Id.*

47. *Id.* at 9–10.

48. *Id.* at 24.

49. *Id.*

50. *Id.*

A. Legal Background

There exists a long-standing tension between whether a stormwater permittee must comply with strict water quality limits or whether an iterative BMP is a lawful method for complying with the Clean Water Act. In 1990, municipal permits were issued by the San Francisco Bay Regional Water Board and the Los Angeles Regional Water Board that were appealed due to the lack of numeric limits in the permits. The NGOs that brought the appeals argued that the permits needed to include numeric limits, as the discharges of pollutants must not only be reduced to the maximum extent practicable (MEP), but they must also meet water quality standards. The State Water Board, in hearing these appeals, determined that it was not feasible at the time to develop numeric limits for MS4 permits, and that water quality standards could and should be achieved through the implementation of best management practices (BMPs). Since this ruling, the Regional Water Boards have typically not included numeric limits in stormwater permits. The State Water Board also adopted NPDES General Permits for the Discharge of Storm Water Associated with Industrial Activities and for the Discharge of Storm Water Associated with Construction Activities. Both permits contained language stating that developing numeric limitations were infeasible.

Along with the State Water Board's determinations, a number of rulings from the federal courts regarding the NPDES stormwater program have occurred. One significant decision, *Defenders of Wildlife vs. Browner*, held that MS4 permits need not require strict compliance with water quality standards.⁵¹ Rather, compliance was to be based upon the MEP standard.⁵² However, the California Water Boards could at their option require compliance with standards.⁵³ The State Water Board through the permit and appeals process did require that the discharges from MS4s meet water quality standards but has stated that compliance with numeric standards can be achieved through the implementation of BMPs in an iterative fashion. The *Browner* decision also found that discharges of stormwater associated with industrial activities must be in strict compliance with water quality standards.

B. The 2012 Los Angeles County MS4 Permit

In 2012, the Los Angeles Regional Water Board issued the Los Angeles County MS4 Permit which covers approximately 88,000 catch

51. *Defenders of Wildlife*, 191 F.3d at 1166.

52. *Id.* at 1165.

53. *Id.* at 1166. The State Water Boards have delegated authority to implement the Clean Water Act, as discussed *infra* Section II.

basins, over 3,500 miles of underground pipes, and 500 miles of open channels.⁵⁴ The 2012 Los Angeles Permit was intended to regulate and control about 100 million gallons of dry weather runoff. On a wet weather day, water flow regulated by the 2012 Los Angeles Permit can be as much as 10 billion gallons.⁵⁵

The 2012 Los Angeles Permit regulated the drainage areas of 84 municipal permittees that encompassed more than 3,000 square miles and multiple watersheds.⁵⁶ Under the Permit, permittees were required to comply with water quality-based standards for 33 TMDLs. The Permit also required compliance with receiving water limitations that require permittees to not cause or contribute to water quality exceedances.⁵⁷

In a landmark shift in stormwater permitting, the 2012 Los Angeles Permit allowed permittees to develop watershed management programs (WMPs) and enhanced watershed management plans (EWMPs).⁵⁸ A WMP is a plan that allows permittees to comply with the 2012 Permit on a watershed scale using customized BMPs. An EWMP is a WMP that allows for collaboration with other permittees and partners on multi-beneficial regional projects that retain non-stormwater runoff, and retain stormwater runoff from an 85th percentile, 24-hour storm event.⁵⁹ In exchange for participation in this new WMP/EWMP approach, the Los Angeles MS4 Order authorized the permittees to develop and implement WMP/EWMPs in lieu of requiring compliance with the receiving water limitations provisions.⁶⁰

The 2012 Los Angeles MS4 Order was highly controversial. Permittees and NGOs filed 37 petitions that raised over sixty contentions claiming deficiencies in the Order.⁶¹ Rather than side on the protection of water quality, the State Water Board held that:

While storm water poses an immediate water quality problem, we believe that a rigorous and transparent watershed-based approach that emphasizes low impact development, green

54. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION, ORDER No. R4-2012-0175, 17, <https://perma.cc/7P3M-2YPD>.

55. CITY OF LONG BEACH, MIDTOWN SPECIFIC PLAN DRAFT EIR, 5.7 – 6, <https://perma.cc/V76B-QEFN>.

56. CAL. REG'L WATER QUALITY CONTROL BD. LOS ANGELES REGION, *supra* note 54, at 15.

57. *Id.* at 13.

58. *Id.* at 48.

59. *Id.* at 13.

60. *Final State Water Board Order WQ 2015-0075*, STATE WATER RES. CONTROL BD., 3 (July 1, 2015), <https://perma.cc/A5Z9-6UUK>.

61. *Id.* at 4.

infrastructure, multi-benefit projects, and capture, infiltration, and reuse of storm water is a promising long-term approach to addressing the complex issues involved. We must balance requirements for and enforcement of immediate, but often incomplete, solutions with allowing enough time and leeway for dischargers to invest in infrastructure that will provide for a more reliable trajectory away from storm water-caused pollution and degradation.⁶²

Therefore, the State Water Board found that the Los Angeles Order struck a balance between meeting water quality standards and implementing watershed-based solutions to stormwater.

C. California's Strategy to Optimize Resource Management of Stormwater (STORMS)

In 2013, the State Water Board recognized the need to formulate a long-term vision for the statewide stormwater program. The California Water Action Plan, released in January 2014, further called for multiple benefit stormwater management solutions and efficient permitting for multiple benefit projects.⁶³ In April 2014, the Water Boards responded by forming the "Storm Water Strategic Initiative" (Initiative).⁶⁴ The goal of this effort was to transition the stormwater Program to better address new challenges, including drought and climate change.⁶⁵

The result of the Initiative transformed into California's Strategy to Optimize Resource Management of Stormwater (STORMS). STORMS' mission is to lead the evolution of stormwater management in California by advancing the perspective that stormwater is a valuable resource, supporting policies for collaborative watershed-level stormwater management and pollution prevention, removing obstacles to funding, developing resources, and integrating regulatory and non-regulatory interests. The overarching intent of the statewide stormwater strategy is to establish the value of stormwater as a resource in California and encourage

62. *Final State Water Board Order WQ 2015-0075*, STATE WATER RES. CONTROL Bd., 3 (July 1, 2015), <https://perma.cc/A5Z9-6UUK>.

63. CAL. NATURAL RESOURCES AGENCY, CAL. DEP'T OF FOOD & AGRICULTURE, CAL. ENVTL. PROT. AGENCY, CALIFORNIA WATER ACTION PLAN 4 (2014), <https://perma.cc/DH6S-5FPU>.

64. CAL. WATER BOARDS, *Strategy to Optimize Resource Management of Storm Water*, 8 (Jan. 6, 2016), <https://perma.cc/54NP-G5AD>.

65. CAL. WATER BOARDS, *Proposal to Develop a Storm Water Program Workplan and Implementation Strategy – Including Projects for Immediate Action 5* (June 25, 2015), <https://perma.cc/PU5F-8EQR>.

its application to beneficial uses. The evolution of stormwater management may be accomplished through a watershed-based evaluation of needs and a coordinated implementation strategy.⁶⁶

Two Projects within STORMS were designed to better ensure alternative compliance programs—like the one created in Los Angeles—achieve water quality standards. Project 3a, “Develop Guidance for Alternative Compliance Approaches for Municipal Storm Water Permit Receiving Water Limitations,”⁶⁷ was designed to evaluate current stormwater programs, with particular emphasis on the municipal program, and identify alternative compliance pathways, as well as the appropriate tools and methods applied to assess compliance with these compliance pathways. There was also Project 3b, “Develop Watershed-Based Compliance and Management Guidelines and Tools”⁶⁸ which aims to develop technical and management guidance, including data and modeling needs, for local stormwater programs to demonstrate water quality protection and support watershed-based stormwater management.

Both projects aim to increase consistency among municipal stormwater compliance strategies in permits throughout the state, and improve our understanding of watershed tools, assumptions, inputs and outputs, as well as the uncertainty associated with these tools as applied to stormwater management. Finally, both projects aim to improve public perception and confidence in application of watershed management tools in support of water quality improvement.

III. California’s 2018 Industrial General Permit Adequately Balances a Watershed Approach to Capturing Stormwater While Protecting Water Quality Standards

Last year, the State Water Board adopted its Revised 2018 Industrial General Permit.⁶⁹ While not perfect, the revised permit makes substantial progress toward requiring permittees to put BMPs into the ground that will improve water quality while incentivizing integrated water management.

66. CAL. WATER BOARDS, *supra* note 64, at 6.

67. *Id.* at Appendix A.

68. *Id.*

69. STATE WATER RES. CONTROL BD, *Industrial General Permit 2014-0057-DWQ*, <https://perma.cc/VE3B-953U>.

A. Industrial General Permit Background

The State Water Board adopted the first NPDES permit for the discharge of stormwater associated with industrial activity in 1991.⁷⁰ In 1997, the State Board re-issued the 1991 Permit.⁷¹ The State Water Board began the process for re-issuing the 1997 Permit in the early 2000s. In 2004, the State Water Board released a draft General Industrial Stormwater Permit that was met with significant opposition from NGOs due to the absence of numeric limits.⁷² State Water Board staff revised the draft permit to incorporate the benchmarks contained in the U.S. EPA multi-sector general permit.⁷³ This change resulted in strong opposition from the regulated community.⁷⁴ The concerns that were raised by the NGOs and the regulated community were similar, though they did not necessarily agree on the best way to address them. Both believed that permitting had become overly complex, and that it is extremely difficult, if not impossible to objectively determine if a facility, operation, or municipality is in compliance with its permit requirements.⁷⁵ The NGOs argued that requiring stormwater permittees to comply with numeric effluent limits would result in an easier way to measure compliance. The regulated community agreed, to a degree, but they argued that it is not simply a matter of selecting a number that is suitable for a POTW or industrial waste discharge.

70. STATE WATER RES. CONTROL BD, General Industrial Storm Water Permit (December 18, 1991), <https://perma.cc/92XU-UKTZ>.

71. *See generally* Water Quality Order No. 97-03-DWQ, <https://perma.cc/54GG-CYUW>.

72. Storm Water Panel Recommendations to the California State Water Resources Control Board, The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 19, 2006) at p. 2, <https://perma.cc/3LT6-FWM6>.

73. *Id.*

74. *See, e.g.*, CALIFORNIA STORMWATER QUALITY ASSOCIATION, Comment Letter (February 18, 2005) at p. 3, <https://perma.cc/CZ8N-W6PE>; STATE OF CALIFORNIA AUTO DISMANTLERS ASSOCIATION, Comment Letter (February 3, 2005) at p. 3, <https://perma.cc/Q64L-7QYV>; LEAGUE OF CALIFORNIA CITIES, Comment Letter (February 2, 2005) at p. 2, <https://perma.cc/5CA3-F7Q4>.

75. *See e.g.*, LEAGUE OF CALIFORNIA CITIES, Comment Letter (February 2, 2005) at p. 2, <https://perma.cc/5CA3-F7Q4> (referencing “ambiguous” requirements); LAWYERS FOR CLEAN WATER, Comment Letter (February 17, 2005) at p. 3, <https://perma.cc/BY4R-L2JA>.

Additional drafts of the revised permit were circulated in 2011,⁷⁶ 2012,⁷⁷ 2013,⁷⁸ and 2014.⁷⁹ On April 1, 2014, the State Board re-issued the 1997 Permit when it adopted the 2014 Permit. The 2014 Permit states that it becomes effective on July 1, 2015.⁸⁰

The 2014 Industrial General Permit did not contain Numeric Effluent Limitations (NELS). Instead, the State Water Board included two types of numeric action limits (NALs), including an annual NAL and an instantaneous maximum NAL.⁸¹ An annual NAL exceedance occurs when the average of all sampling results within a reporting year for a single parameter (except pH) exceeds the applicable annual NAL. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the applicable instantaneous maximum NAL value. Instantaneous maximum NALs are only for pH, Total Suspended Solids (TSS), and Oil and Grease (O&G).⁸²

The 2014 Industrial General Permit also did not contain effluent limitations consistent with applicable TMDLs. There are 36 TMDLs adopted by EPA and/or the State of California that the State Board identified in the 2014 Permit as applicable to industrial stormwater dischargers.⁸³ Of the 36 TMDLs, 20 have both WLAs specific to industrial stormwater discharges and either are effective immediately (*i.e.*, provide no extension for industrial stormwater point sources to be required to comply with the WLAs), or had a compliance deadline that passed prior to adoption of the 2014 Permit.⁸⁴

76. STATE WATER RES. CONTROL BD., National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Associated with Industrial Activities (January 28, 2011) *available at* <https://perma.cc/GXQ2-36MN>.

77. STATE WATER RES. CONTROL BD., National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Associated with Industrial Activities (July 16, 2012) *available at* <https://perma.cc/F4A3-KDXN>.

78. STATE WATER RES. CONTROL BD., National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Associated with Industrial Activities (July 19, 2013) *available at* <https://perma.cc/W6XF-D55F>.

79. STATE WATER RES. CONTROL BD., National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Associated with Industrial Activities (February 19, 2014) *available at* <https://perma.cc/BRB9-RUPP>.

80. STATE WATER RES. CONTROL BD., National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Associated with Industrial Activities (April 1, 2014) *available at* <https://perma.cc/Z3LE-V3AR>.

81. *Id.*

82. *Id.*

83. *See* ORDER 2014-0057-DWQ (Finding 38 and Attachment E), <https://perma.cc/42MM-ZR2U>.

84. *Id.*

Under California law, each Regional Water Board is required to formulate and adopt “water quality control plans,” commonly known as “Basin Plans,” for all hydrologic areas within their region.⁸⁵ A water quality control plan “consists of a designation or establishment for the waters within a specified area” of all of the following: “(1) Beneficial uses to be protected; (2) Water quality objectives; [and] (3) A program of implementation needed for achieving water quality objectives.”⁸⁶ The program of implementation for achieving water quality objectives must include a “description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private,” a “time schedule for the actions to be taken,” and a “description of surveillance to be undertaken to determine compliance with objectives.”⁸⁷ Since TMDLs interpret or refine existing water quality objectives, they are required to include a program of implementation.⁸⁸

Once a TMDL and WLAs have been developed for an impaired water body, NPDES permits that authorize discharges to that impaired water body must contain effluent limitations that are consistent with the assumptions and requirements of the available WLAs for the discharge.⁸⁹ This requirement applies in the stormwater permitting context as in any other NPDES permitting context.⁹⁰ The NPDES permitting authority’s duty is executed by incorporating into the NPDES permit “effluent limits and conditions consistent with the requirements and assumptions of the WLAs in the TMDL.”⁹¹

85. Water § 13240.

86. *Id.* § 13050(j).

87. Water § 13242.

88. See Memorandum from William R. Attwater, Chief Counsel, State Water Resources Control Board, to Gerard J. Thibeault, Executive Officer, Santa Ana Regional Water Quality Control Board (March 1, 1999).

89. 40 C.F.R. § 122.44(d)(1)(vii)(B) (“when developing water quality-based effluent limits . . . the permitting authority *shall ensure* that effluent limits . . . are consistent with the assumptions and requirements of any available wasteload allocation for the discharge”) (emphasis added); see also *Cmtys. for a Better Env’t.*, 109 Cal. App. 4th at 1096.

90. See Memorandum from James A. Hanlon and Denise Keehner, U.S. EPA, to Water Management Division Directors, Regions 1–10, *Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs* (November 12, 2010) (“EPA Hanlon Memo”) at 3 (the permitting authority’s duty to ensure an NPDES permit is consistent with existing TMDLs arises whenever “the State or EPA has established a TMDL for an impaired water that includes WLAs for stormwater discharges.”).

91. EPA Hanlon Memo at 3.

In adopting the 2014 Permit, the State Board did not ensure that the 2014 Permit's effluent limitations and conditions were consistent with the assumptions and requirements of available WLAs of existing TMDLs. Instead, the State Water Board decided to delay any potential incorporation of TMDL-specific effluent limitations into the 2014 Permit by more than two years from the date of the 2014 Permit adoption.

B. The 2018 Revised Industrial General Permit

The State Water Board adopted the latest Amendment to the Industrial General Permit on November 6, 2018 to incorporate TMDL-specific effluent limitations into the 2014 Permit.⁹² The State Water Board made July 1, 2020, the Effective Date of the Amendment to allow facilities regulated by the permit 18 months to initiate BMPs and request compliance schedules, as necessary, to meet the numeric effluent limitation requirements for individual watersheds.

The Amended Industrial General Permit contains two major new components. First, the State Water Board included Waste Load Allocations with TMDL-specific Numeric Action Levels (TNALs) and Numeric Effluent Limitations (NELs). Permittees that are defined as Responsible Dischargers to the TMDLs are required to comply with the new TMDL-specific discharge requirements.

Second, the Amended Industrial General Permit provides a statewide alternative compliance option that grants compliance with receiving water limitations in exchange for implementation of on-site or regional stormwater capture best management practices. The on-site alternative compliance options allow for the capture and use of stormwater up to and including the 85th percentile 24-hour daily storm volume. Alternatively, an Industrial Stormwater Permittee can participate in agreements with local jurisdictions or other private entities to capture and use up to and including the 85th percentile 24-hour daily storm volume.⁹³

C. Analysis

The Amended Industrial General Permit is a success in two ways. First, the State Water Board has developed numeric water quality standards to set clear targets for the amount of metals, bacteria, and other harmful pollutants industrial facilities may allow to run off their property and into our waterways. Numeric standards not only provide permittees with a clear understanding of whether they comply with the law, but numeric standards

92. National Pollutant Discharge Elimination System (NPDES) Order WQ 20XX-XXXX-DWQ Amending General Permit for Storm Water Discharges Associated with Industrial Activities (November 6, 2018) *available at* <https://perma.cc/U8GW-BEBH>.

93. FACTSHEET, *supra* note 6, at 36.

are the most effective way to reduce dangerous pollution in our rivers, streams, and waterways. Numeric standards are like speed limits. Consider if the speed limit was “drive the best you can,” would you drive the appropriate speed? Would the police officer clearly know whether you were following the law? The answer is likely “no” in both instances. But a numeric speed limit (e.g., “45 mph”) allows the driver to know the target speed and the police officer to know when the law is being violated. The same is true for numeric water quality standards—they provide permittees a clear target and allow the state to know when the law has been broken.

Second, the State Water Board is offering an innovative solution for permittees to meet the standard. The new Industrial General Permit incentivizes permittees to capture a quantity of stormwater running off their site. Rather than allowing that water to flow into ditches and storm drains, it instead filters into the ground through special basins, helping to refill the aquifers we rely on for drinking water, and promote the objectives of the State Water Board’s STORMS program.⁹⁴

The new Industrial General Permit is not perfect. The new compliance option to capture and infiltrate stormwater does not completely ensure enough pollutants are captured to clean up unsafe waterways. Specifically, there is a concern that facilities like waste haulers, wastewater facilities, and livestock operations will continue to allow high levels of bacteria to run off and make California swimmers sick. The new Permit also shields permittees, who decide to capture their stormwater runoff but still violate water quality standards from enforcement. Without enforcement, California will lack the deterrence necessary to ensure all industrial facilities are doing their part to reduce dangerous pollution.

Despite the imperfections of the Industrial General Permit, it represents significant progress toward reducing industrial pollution and increasing sustainable water supplies. By incentivizing stormwater capture, the Industrial General Permit continues an evolution towards harnessing rainwater rather than funneling it out to sea as quickly as possible. As climate change intensifies California droughts, this evolution cannot come soon enough. California has waited over a decade to begin healing our waterways from industrial stormwater pollution. With the adoption of this new Industrial General Permit in November 2018, the State Water Board has taken a significant step to achieve actual improvements in water quality statewide.

94. *See supra*, Section II.C.

IV. Conclusion: California Trailblazes the Regulation of Industrial Stormwater Pollution with the 2018 Industrial General Permit.

With the adoption of the Amended Industrial General Permit in November of 2018, California approved the first-in-the-nation general industrial stormwater permit incorporating TMDL-related NELs.⁹⁵

These new standards set clear targets for the harmful pollutants that runoff industrial sites and facilities, essentially serving as “speed limits” for the regulated community. For example, under the prior regime of narrative effluent limits, neither the permittee or the Regional Water Boards could clearly tell whether a specific permittee or facility was in compliance with the Industrial General Permit. Numeric effluent limits set a clear target and can expressly indicate whether water quality standards are violated—like a speed limit on a highway that lets both drivers and highway patrol know whether the law has been broken.

Prior to the integration of numeric standards in the new Industrial General Permit, third party environmental lawsuits—often known as “citizen lawsuits” brought under the citizen suit provision of the Clean Water Act⁹⁶—would bring individual industrial facilities under a numeric standard to ensure industrial contaminants remained onsite and did not runoff during a rain storm. For example, Orange County Coastkeeper has predominantly used the numeric standards of the California Toxics Rule in each of its consent decrees against violators to ensure a consistent and achievable standard with a “clear path” to compliance.⁹⁷ After a number of years and a number of iterations of the statewide Industrial General Permit, California now has clear, enforceable water quality standards for industrial facilities based on the NELs established by specific watershed-based TMDLs.

The evolution of the Industrial General Permit, however, is ongoing. The TMDLs incorporated into the general permit target metals associated with industrial facilities, while bacteria contamination from industrial facilities—particularly waste haulers and composting sites—is a continuing concern. The new and innovative compliance option to capture stormwater does not completely ensure all pollutants are retained onsite. Meanwhile, the new Industrial General Permit shields permittees who pursue the new compliance option, but still violate water quality standards, from enforcement. Despite these imperfections, California has trailblazed the

95. Maureen Gorsen, *California Adopts First-in-Nation Stormwater Permit Incorporating TMDLs*, ALSTON & BIRD ENV'T, LAND DEV. & CLIMATE CHANGE BLOG (Nov. 7, 2018), <https://perma.cc/6S7J-FD47>.

96. Clean Water Act, 33 U.S.C. § 1365 (2018).

97. State Water Resources Control Board Hearing, Testimony by Garry Brown (March 29, 2011) at 20.

regulation of industrial stormwater pollution with its adoption of clear, enforceable numeric standards that will ultimately lead to safer, swimmable waters for California's rivers and coastal beaches.