There's Something in the Water: Toxic Exposure Liability of Public Water Suppliers in the Face of Near-Universal PFAS Exposure

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I. INTRODUCTION

PFAS, or per- and polyfluoroalkyl substances, are a class of synthetic organic compounds that have historically been used in a wide variety of commercial and industrial applications worldwide.[1] Production of PFAS in the United States began in the 1940's with the use of polytetrafluoroethylene (PTFE) in non-stick coatings such as Teflon.[2] In the decades that followed, PFAS manufacturers began using two of the most ubiquitous PFAS compounds – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS)[3] – in a number of products such as stain- and water-resistant coatings, firefighting foam, food packaging, carpeting, and textiles,[4] as well as in the construction, electronics, and aerospace industries.[5]

Awareness of the potential health risks associated with PFAS exposure began in the 1970s when several studies detected PFAS in blood samples taken from workers exposed to the compounds on the job.[6] Additional

1. ELENA H. HUMPHREYS & MARY TIEMANN, CONG. RESEARCH. SERV., R.45793, PFAS AND DRINKING WATER: SELECTED EPA AND CONGRESSIONAL ACTIONS 2 (2019).

2. Interstate Tech. & Regulatory Council, History and Use of. Per- and Polyfluroalkyl Substances (PFAS), PFAS FACT SHEET 2 (2020), http://pfas-1.itrcweb.org/fact_sheet_page/PFAS_Fact_Sheet_History_Use_April2020.pdf [https://perma.cc/9n28-8CFB] [hereinafter ITRC FACT SHEET].

3. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, U.S. DEPT. OF HEALTH AND HUMAN SERVICES, TOXICOLOGICAL PROFILE FOR PERFLUOROALKYLS: DRAFT FOR PUBLIC COMMENT 538 (June 2018) [hereinafter ATSDR PFAS PROFILE].

4. Kristen M. Rappazzo et al., *Exposure to Perfluorinated Alkyl Substances and Health Outcomes in Children: A Systematic Review of the Epidemiologic Literature*, 14 INT'L J. ENVTL. RES. PUB. HEALTH. 691 (2017) [hereinafter Rappazzo]; ITRC FACT SHEET, *supra* note 2, at 1.

5. ITRC FACT SHEET, *supra* note 2, at 1.

6. *Id.* at 2.

studies in the 1990's uncovered detectable levels of PFAS in the blood of the general human population in the United States.[7] In 2019 that 3M, one of the largest American manufacturers of PFOA and PFOS, disclosed it had conducted a study in 2001 which uncovered high levels of these compounds in the U.S. food supply, and that 3M knew "as early as the 1970's that PFAS was accumulating in human blood" and determined that the compounds "should be regarded as toxic."[8]

Between 2000 and 2002, the EPA began encouraging PFAS manufacturers in the United States to voluntarily phase-out production of PFOS.[9] In response to the changing regulatory environment and fearing potential liability, 3M announced in 2000 it would begin to voluntarily phase-out all of its PFOS production in the United States,[10] and pledged to cease using PFOA and PFOS in its products by 2002.[11] After an investigation into the toxicity of PFAS compounds concluded, in part, that PFOA "is a likely human carcinogen,"[12] the EPA initiated the 2010/2015 PFOA Stewardship Program with eight U.S. chemical manufacturers.[13] The manufacturers agreed to voluntarily reduce the emission and production of long-chain PFAS compounds, including PFOA and PFOS, by 95% by 2010 and 100% by 2015.[14] The EPA has since reported that this goal was

7. *Id.*

8. Zoe Schlanger, *3M has long known it was contaminating the US food supply*, QUARTZ (June 13, 2019), https://qz.com/1643554/3m-knew-pfas-was-contaminating-us-food-supply/ [https://perma.cc.XH7T-KZUP].

9. U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH, NATIONAL PRIORITIES: PER- AND POLYFLUOROALKYL SUBSTANCES (last visited Apr. 1, 2020) https://www.epa.gov/research-grants/national-priorities-and-polyfluoroalkyl-substances [https://perma.cc/5A8E-5CZ8] [hereinafter NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH].

10. Alissa Cordner et al., *Guideline levels for PFOA and PFOS in drinking water: the role of scientific uncertainty, risk assessment decisions, and social factors*, 29 INT'L J. EXPOSURE SCI. & ENVTL EPIDEMIOLOGY 157, 158 (2019).

11. Searchlight New Mexico, *Toxic timeline: A brief history of PFAS*, SANTAFENEW MEXICAN.COM (Feb. 21, 2019), https://www.santafenewmexican.com/news/local_news/toxic-timeline-a-brief-history-of-pfas/article_20609664-48c7-574e-a9f7-1fb813e9a13e.html [https://perma.cc/9YRA- MDGF].

12. *Id.*

13. NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH, *supra* note 9.

14. *These Chemicals Are Forever: Water Contamination from PFOA, PFOS, and other PFAS*, FOOD & WATER WATCH (Feb. 6, 2019), *https*://www.foodandwaterwatch.org/insight/these-chemicals-are-forever-water-contamination-pfoa-pfos-and-other-pfas [https://perma.cc/C33B-564W] [hereinafter FOOD & WATER WATCH]; NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH, *supra* note 9.

met[15] and PFOA and PFOS are no longer produced in the United States. However, these compounds are still produced internationally, especially in China, and continue to enter the United States via imported goods such as textiles, paper, coatings, and plastics.[16] As of November 2017, increased PFAS use in China and other countries "potentially offset the global reduction [of PFAS production] anticipated with the U.S. phase-out."[17] Until PFAS production is severely reduced or eliminated by the U.S.'s international trading partners Americans will continue to be exposed to these compounds, although at lower levels than those seen in the 20th Century.

California has not experienced the type of willful, large-scale PFAS pollution that states that hosted its manufacture, such as Ohio and West Virginia,[18] have endured. Regardless, the ubiquity of these chemicals in California's food and water supply, combined with a growing awareness of the serious health risks of PFAS exposure, prompted California to become a nationwide leader in PFAS regulation.[19] In 2017, the California Office of Environmental Health Hazard Assessment (OEHHA) "added PFOA and PFOS to the Proposition 65 list of chemicals known to the state to cause reproductive toxicity" without setting a "maximum allowable dose level, below which no Proposition 65 warning is required."[20] California then passed A.B. 756 in July 2019, which empowered the State Water Resources Control Board (SWRCB) to force public water suppliers (PWS) to monitor for PFAS compounds. The SWRCB has since set the strictest monitoring levels for PFOA and PFOS in the nation. With more research being done on the adverse health effects of exposure to these chemicals, there is a growing possibility that PWSs with contaminated water sources may be exposed to toxic tort suits brought by consumers.

The first section of this Article will discuss the physical and environmental properties of PFAS compounds and current research into their toxicity, while the second section will discuss pre-A.B. 756 efforts by the federal government and California to regulate PFAS. The third section will analyze

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15. HUMPHREYS, *supra* note 1, at 15.

16. U.S. Envtl. Prot. Agency, *Basic Information on PFAS* (last visited Apr. 3, 2020), https://www.epa.gov/pfas/basic-information-pfas [https://perma.cc/VA3E-3WAL].

17. ITRC FACT SHEET, *supra* note 2, at 4.

18. Brittany Patterson, *Ohio to Test for Toxic PFAS Chemicals in Drinking Water*, OHIO VALLEY RESOURCE (Sept. 27, 2019), https://ohiovalleyresource.org/2019/09/27/ohio-to-test-for-toxic-pfas-chemicals-in-drinking-water/ [https://perma.cc/G467-7MQM].

19. Jeffrey Dintzer & Clyton Namuo, *New Calif. Law Represents Strategic Shift in PFAS Regulation*, LAW360 (Sept. 18, 2019), https://www.law360.com/articles/1199031/new-calif-law-represents-strategic-shift-in-pfas-regulation [https://perma.cc/567G-KDMQ].

20. Albert Cohen, *California Businesses to Face More PFAS Scrutiny in 2020*, LAW360 (Nov. 25, 2019, 3:42 PM), https://www.law360.com/articles/1223222/california-businesses-to-face-more-pfas-scrutiny-in-2020 [https://perma.cc/JT3A-C5YY].

the provisions of A.B. 756. The fourth section will then apply the landmark toxic tort recovery framework from *Potter v. Firestone Tire & Rubber Co.* to explore the viability of potential toxic tort claims against PWSs, such as negligent infliction of emotional distress and fear of cancer, as well as the defense of sovereign immunity. The fifth section will discuss final thoughts on the viability of implementing A.B. 756.

II. PFAS COMPOUNDS: PROPERTIES, EXPOSURE PATHWAYS, AND HEALTH RISKS

A. Physical and Chemical Properties of PFAS Compounds and Routes of Exposure

Despite the end of their manufacture in the United States, PFOA and PFOS share a number of chemical properties that allow them to continue to pose risks to the health of humans and the environment. PFOA and PFOS "are mobile, persistent, and bioaccumulative, and are not known to degrade in the environment."[21] Long-chain PFAS, which include PFOA and PFOS, are very stable compounds "with long half-lives [that] can be persistent in the environment and humans long after they are phased out."[22] In studies of blood samples taken by the American Red Cross, PFOS was found to have an approximate half-life of four to five years once in a person's bloodstream,[23] while a study of "occupationally exposed workers" found a mean PFOS half-life of 5.4 years.[24] The half-life of PFOA in the human body has been measured between two and four years.[25] Additionally, PFOA and PFOS are highly bioaccumulative, concentrating in the body over time, particularly in the blood, liver, and eggs.[26] As a result, low levels of exposure can result in potentially harmful total PFAS concentration in the human body over a sufficient period of time, and even after regular exposure has ceased.[27]

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21. ITRC FACT SHEET, *supra* note 2, at 1.
22. Rappazzo, *supra* note 4, at 2.
23. Geary W. Olsen et al., *Per- and Polyfluoroalkyl Substances (PFAS) in American Red Cross Adult Blood Donors, 2000–2015*, 157 ENVTL. RES. 87, 90 (2017).
24. U.S. ENVTL. PROT. AGENCY, EPA 822-R-16-004, DRINKING WATER HEALTH ADVISORY FOR PERFLUOROCTANE SULFONATE (PFOS) 27 (2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf [https://perma.cc/R9QX-FWF6] [hereinafter PFOS HEALTH ADVISORY].
25. FOOD & WATER WATCH, *supra* note 14, at 4–5.
26. ATSDR PFAS PROFILE, *supra* note 3, at 556.
27. FOOD & WATER WATCH, *supra* note 14, at 4.

A study conducted by the U.S. National Health and Nutrition Examination Survey (NHANES) between 2015 and 2016 found detectable PFAS concentrations in the blood of over 95% of Americans.[28] The study found average blood levels of PFOA at "1.56 parts per billion, with 95% of the general population at or below 4.17 parts per billion," and PFOS at "4.72 parts per billion, with 95% of the general population at or below 18.3 parts per billion."[29] PFAS have also been found to accumulate at lower levels in breast milk and umbilical cord blood, exposing infants before they are even born.[30] However, overall PFOA and PFOS concentrations in human blood in the U.S. have decreased steadily since the beginning of the 21st century.[31] PFOA concentrations decreased from a mean of 5.21 parts per trillion (ppt) in 1999 with 95% of the population at or below 11.9 ppt, to a mean of 1.56 ppt in 2016 with 95% of the population at or below 4.17 ppt.[32] Similarly, PFOS concentrations decreased from a mean of 30.4 ppt in 1999 with 95% of the population at or below 75.7 ppt, to a mean of 4.72 ppt in 2016 with 95% of the population at or below 18.3 ppt.[33] These decreases are significant and can largely be attributed to the elimination of PFOA and PFOS manufacturing in the U.S.[34] However, the bioaccumulative properties of PFAS, combined with the numerous current pathways for exposure, create a persistent risk to the U.S. population of potentially unhealthy lifetime PFAS concentrations in the body.

In the United States, humans are exposed to PFAS compounds through a number of exposure pathways that make completely avoiding PFAS nearly impossible.[35] Although ingestion of contaminated food and water is the primary source of PFAS exposure for the general population, PFOA

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28. Agency for Toxic Substances and Disease Registry, *An Overview of the Science and Guidance for Clinicians on Per- and Polyfluoroalkyl Substances (PFAS)*, CENTERS FOR DISEASE CONTROL AND PREVENTION 6 (last visited Nov. 28, 2020), https://www.atsdr.cdc.gov/pfas/docs/clinical-guidance-12-20-2019.pdf [https://perma.cc/4NHJ-4K5M] [hereinafter ATSDR Clinician Fact Sheet].

29. *Id.*

30. *Id.* at 4; U.S. ENVTL. PROTECTION AGENCY, EPA 823R18004, EPA'S PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) ACTION PLAN 12 (2019), https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf [https://perma.cc/THT2-4TTK] [hereinafter PFAS ACTION PLAN]; Cordner, *supra* note 10, at 161.

31. CENTERS FOR DISEASE CONTROL AND PREVENTION, U.S. DEP'T OF HEALTH AND HUMAN SERVICES, CS272983-A, FOURTH NATIONAL REPORT ON HUMAN EXPOSURE TO ENVIRONMENTAL RESOURCES, UPDATED TABLES, VOL. 1 (2019) [hereinafter FOURTH NATIONAL REPORT]

32. *Id.* at 405–07.

33. *Id.* at 413–15.

34. ATSDR Clinician Fact Sheet, *supra* note 28, at 6.

35. *See generally* ATSDR Clinician Fact Sheet, *supra* note 28.

and PFOS can enter the body through several alternative pathways.[36] Children and infants are particularly susceptible to exposure from hand-to-mouth transfer from materials treated with PFAS compounds, such as carpets, carpet cleaners, furniture, and other textiles.[37] Individuals can also experience PFAS exposure from the inhalation of dust from carpets, textiles, and soil, or from certain fabric sprays containing these substances,[38] such as Scotchgard.[39]

The most common source of PFOA and PFOS exposure is ingestion of food that has been contaminated from contact with packaging containing PFAS, or which contains PFAS due to biomagnification in the food web[40] and the uptake of PFAS into crops due to contaminated water and soil.[41] The scope of potentially affected food products is broad, encompassing meat, fish, eggs, and many vegetables.[42] Additionally, fetuses can be exposed to PFAS in the womb through umbilical cord blood[43], and infants can be exposed to PFAS through breast milk.[44]

Ingestion of contaminated water is another major exposure pathway for PFAS.[45] Contaminated water enters the body by drinking from public and private water systems contaminated with PFAS, although this method is "typically localized and associated with a release from a specific facility," such as a manufacturer, landfill, or wastewater treatment plant.[46] PFAS compounds are able to migrate from particular disposal or dumping sites into the watershed over a potentially large area due to their high mobility and resistance to breaking down.[47] Drinking wells are particularly susceptible to PFAS contamination from groundwater, especially when situated near

36. *Id.* at 3, 4.
37. *Id.* at 4.
38. *Id.* at 4.
39. Searchlight New Mexico, *supra* note 11.
40. PFOS HEALTH ADVISORY, *supra* note 24, at 26 (discussing predators that consume fish which already contain PFAS in their bodies); ATSDR PFAS PROFILE, *supra* note 3, at 640.
41. *Per- and Polyfluoroalkyl Substances (PFAS) Background*, CALIFORNIA WATER BOARDS, https://www.waterboards.ca.gov/pfas/background.html [https://perma.cc/CT7Q-GBGS] [hereinafter CALIFORNIA WATER BOARDS].
42. *Id.*
43. PFAS ACTION PLAN, *supra* note 30, at 12.
44. CALIFORNIA WATER BOARDS, *supra* note 41.
45. ATSDR Clinician Fact Sheet, *supra* note 28, at 3.
46. PFAS ACTION PLAN, *supra* note 30, at 12.
47. *Basic Information on PFAS*, EPA.GOV, https://www.epa.gov/pfas/basic-information-pfas [https://perma.cc/3KA8-LLNJ] (last visited Nov. 28, 2020).

PFAS use or production sites.[48] In fact, in April 2019, the California Division of Drinking Water ordered airports, landfills, and 600 adjacent water systems (primarily wells operated by PWSs) to test for PFAS contamination.[49] Certain wells tested at over 225 ppt for PFOS and over 120 ppt for PFOA.[50] This type of contamination has also been documented in Ohio and West Virginia, where PFAS released between 1950 and 2002 migrated and contaminated the air, groundwater, and parts of the Ohio River across six water districts.[51] Water contaminated with PFAS can also enter the body by bioaccumulating in crops irrigated with contaminated water sources, including groundwater.[52]

B. Current Scientific Consensus on the Environment and Health Risks of PFAS Exposure

Since the 1970's, there has been a general consensus among stakeholders, producers, and regulatory agencies that exposure to PFOA and PFOS is likely harmful to human health.[53] Research performed by 3M and the U.S. military in the 1970's and 1980's established that PFOA and PFOS were likely toxic to humans and the environment.[54] In 1999, it was revealed that the dumping of PFOA in a landfill in West Virginia ultimately contaminated portions of the Ohio River, exposing nearly 80,000 people and killing dozens of cattle.[55] However, in general, current research into the short- and long-term health risks of PFAS exposure has not established definitive links between the levels of PFOA and PFOS exposure endured by the general U.S. population and particular adverse health conditions.[56] There is some consensus between the CDC, EPA, and various researchers that PFAS exposure above certain maximum levels should be limited and abated due to a perceived likely risk of adverse health effects. However, there is a lack of consensus as to the specific resultant symptoms of this exposure.

The C8 Health Project (the Project) was a landmark epidemiological study conducted in six water districts in West Virginia that had experienced

48. CALIFORNIA WATER BOARDS, *supra* note 41.
49. *Id.*
50. *Drinking Water Resources*, CALIFORNIA WATER BOARDS (last visited Apr. 3, 2020), https://www.waterboards.ca.gov/pfas/drinking_water.html [https://perma.cc/865G-KRE5] [hereinafter *Drinking Water Resources*]. *Id.* at Map 2.
51. ATSDR Clinician Fact Sheet, *supra* note 28, at 8 n.9.
52. PFAS ACTION PLAN, *supra* note 30, at 12; ATSDR Clinician Fact Sheet, *supra* note 28, at 7.
53. Searchlight New Mexico, *supra* note 11.
54. *Id.*
55. *Id.*
56. ATSDR Clinician Fact Sheet, *supra* note 28, at 3.

PFOA releases between 1950 and 2002 which had contaminated the air, groundwater, and sections of the Ohio River.[57] The Project studied the long-term health effects of the exposure in over 69,000 persons above age eighteen, nearly all of whom had PFOA blood concentrations nearly 500 percent higher than the national average.[58] The study "found probable links . . . . between elevated PFOA blood levels and high cholesterol (hypercholesteremia), ulcerative colitis, thyroid function, testicular cancer, kidney cancer, preeclampsia, as well as elevated blood pressure during pregnancy."[59]

In 2017, a survey of existing scientific literature regarding the health risks to children of PFAS returned broad but largely inconclusive results, with several notable exceptions.[60] The survey found "evidence for positive associations" between PFAS exposure in childhood, including infancy and in utero, and adverse health effects with regard to dyslipidemia, immune system suppression, renal function, and age of menarche.[61] The studies surveyed offered contradictory associations between PFAS exposure and ADHD, autism, neurological development, cholesterol levels, and higher risk of obesity, Type 2 diabetes, and stroke.[62] Although this survey suggests potentially broad lifetime health consequences for exposure to PFAS compounds during childhood, the authors acknowledge that nearly all of the studies did not control for other environmental factors or underlying health conditions, and thus "it is not possible to determine whether observed health effects are due to PFAS exposure."[63]

57. *Id.*
58. *Id.*
59. *Id.*
60. Rappazzo, *supra* note 4, at 1.
61. *Id.*
62. *Id.* at 3–7.
63. *Id.* at 13–15.

III. REGULATORY EFFORTS BY CALIFORNIA AND THE FEDERAL GOVERNMENT TO MITIGATE PFAS EXPOSURE

The scientific uncertainty as to the specific adverse health effects of PFAS exposure has not stopped regulatory agencies, both in California and at the federal level, from acknowledging a likelihood of harm and taking steps to establish health guidelines for PFOA and PFOS. The OEHHA, the CDC, and the EPA have all made findings on the health effects of PFOA and PFOS exposure, particularly increased cancer risk, and these findings are generally consistent.

A. EPA Regulatory Efforts

The EPA has been involved with PFAS regulation since 2002 when it published its first Significant New Use Rule (SNUR) requiring manufacturers to notify the EPA before any future manufacture or import of any of over 75 PFAS including PFOA and PFOS.[64] In 2006, the EPA began its 2010/2015 PFOA Stewardship Program, which successfully ended the use and emission of PFOA in the United States by the eight largest manufacturers by 2015.[65] The EPA issued two additional SNURs related to PFAS in 2013 and 2015.[66] In addition, in 2012 the Agency listed six PFAS, including PFOA and PFOS, in the third Unregulated Contaminant Monitoring Rule (UCMR) through the Safe Drinking Water Act (SDWA), which required nearly 5,000 PWS serving over 80% of the U.S. population to monitor their water supplies for the listed compounds.[67] Since then, the Agency has been largely focused on facilitating the study of the potential toxicity of these compounds.[68] The Agency has developed a chemical library of PFAS, compiled scientific literature on PFAS toxicity in the HERO database for public use, and developed standards for environmental testing.[69] In 2016 the EPA released a Lifetime Health Advisory (LHA) for PFOA and PFOS which established 70 ppt as the combined "concentration of PFOA and PFOS in drinking water at or below which adverse health effects are not anticipated to occur over a lifetime of exposure."[70] This LHA established a foundational PFOA/PFOS standard that the CDC and California have

64. PFAS ACTION PLAN, *supra* note 30, at 48.
65. *Id.*
66. *Id.*
67. *Id.* at 14.
68. Jon Hurdle & Susan Phillips, *EPA Says It Plans To Limit Toxic PFAS Chemicals, But Not Soon Enough For Critic*s, NPR (Feb. 14, 2019, 3:10 PM), https://www.npr.org/2019/02/14/694660716/epa-says-it-will-regulate-toxic-pfas-chemicals-but-not-soon-enough-for-critics [https://perma.cc/4Q53-CDCC].
69. PFAS ACTION PLAN, *supra* note 30, at 49–50.
70. *Id.* at 49.

come to see as an unofficial ceiling on acceptable human exposure to PFOA and PFOS. Lastly, the EPA announced in its PFAS Action Plan, released February 2019, that it is planning to implement national drinking water standards for PFAS, including PFOA and PFOS, although these are still forthcoming as of the date of this writing.[71]

B. CDC Regulatory Efforts

The CDC issued interim guidance in May 2018 intended to inform physicians and patients about the potential health risks associated with exposure to PFOA and PFOS.[72] The CDC indicated that "based on limited evidence from human studies," exposure to PFOA and PFOS could have an effect on thyroid function, high cholesterol, ulcerative colitis, testicular cancer, kidney cancer, and pregnancy-induced hypertension, elevated liver enzymes, and high uric acid.[73] The guidance further stated that "the correlations showing PFAS as human health risks are building a body of evidence," but that it does not "establish a causal relationship between PFAS exposure and disease."[74] Although those concerned about their own PFAS exposure can have their blood tested, the CDC concluded that such a test "will not provide information to predict a health problem, nor will it provide information for treatment."[75] The CDC acknowledged that currently "there is no established PFAS blood level at which a health effect is expected, nor is there a level that predicts health problems."[76] Even patients showing symptoms potentially related to PFAS exposure cannot receive reliable monitoring care because even though clinicians can provide serum PFAS level tests, results will only prove the PFAS levels in the patient's blood at that time.[77] The test will not indicate "whether a current illness can be attributed to current or past PFAS exposure. Neither will it predict or rule out the development of future health problems related to a known or suspected PFAS exposure."[78]

71. *Id.* at 42.
72. *See generally* ATSDR Clinician Fact Sheet, *supra* note 28.
73. *Id.* at 8–10.
74. *Id*. at 11.
75. *Id.* at 14.
76. *Id.*
77. *Id.*
78. *Id.*

C. California Regulatory Efforts Pre-A.B. 756

In August 2019, the OEHHA issued recommendations to the SWRCB to adjust notification levels for PFOA and PFOS. The OEHHA recognized the health risks posed by these compounds, including increased risk of cancer, and it cited concerns that drinking water has become a major pathway for PFOA and PFOS exposure among the general population due to their persistence, mobility, and "tendency . . . to accumulate in groundwater."[79] In response, the OEHHA established reference levels[80] for cancer effects at 0.1 ppt for PFOA and 0.4 ppt for PFOS, and concluded that these levels should also protect against the noncancer effects of these compounds.[81] However, these concentrations cannot be reliably detected with current technology, so the OEHHA recommended that the SWRCB set notification levels "at the lowest levels at which [PFOA and PFOS] can be reliably detected in drinking water using currently available and appropriate technologies."[82] In August 2019, following OEHHA recommendations, the SWRCB Division of Drinking Water (DDW) set notification levels at 5.1 ppt for PFOA and 6.5 ppt for PFOS,[83] but retained its single health advisory response level[84] for combined concentrations for PFOA and PFOS at 70 ppt.[85] In February 2020, the SWRCB adjusted response levels downward "to 10 ppt for PFOA and 40

79. CALIFORNIA OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT, NOTIFICATION LEVEL RECOMMENDATIONS FOR PERFLUOROOCTANOIC ACID (PFOA) AND PERFLUOROOCTANE SULFONATE (PFOS) (Aug. 23, 2019), https://oehha.ca.gov/water/notification-level/notification-level-recommendations-perfluorooctanoic-acid-pfoa [https://perma.cc/699T-KZLP] [hereinafter OEHHA Notice].

80. OFFICE OF ENVTL. HEALTH HAZARD ASSESSMENT, NOTIFICATION LEVEL RECOMMENDATIONS FOR PERFLUOROOCTANOIC ACID (PFOA) AND PERFLUOROOCTANE SULFONATE (PFOS) IN DRINKING WATER 1 (Aug. 2019), https://oehha.ca.gov/media/downloads/water/chemicals/nl/final-pfoa-pfosnl082119.pdf [https://perma.cc/438V-B384]. (These levels represent concentrations of the chemicals in drinking water that would not pose more than a one in one million cancer risk over a lifetime) [hereinafter OEHHA NOTIFICATION LEVEL RECOMMENDATIONS].

81. *Id.* at 1, 45.

82. *Id.*; OEHHA Notice, *supra* note 79.

83. CALIFORNIA WATER BOARDS, *supra* note 41.

84. CALIFORNIA OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT, NOTIFICATION LEVELS FOR CHEMICALS IN DRINKING WATER, (last visited Oct. 15, 2020), https://oehha.ca.gov/water/notification-levels-chemicals-drinking-water [https://perma.cc/PSM5-WJ4L]. (Response levels are levels of the contaminant at which SWRCB recommends the drinking water system take the affected water source out of service. These levels range from 10 to 100 times the notification level depending on the chemical.) [hereinafter OEHHA NLS FOR CHEMICALS].

85. CALIFORNIA WATER BOARDS, *supra* note 41.

ppt for PFOS."[86] When a PWS detects PFOA and PFOS levels in its water supply above their respective response levels, DDW recommends removing the source from service or providing treatment when possible.[87] There is currently no maximum contaminant level (MCL)[88] for PFOA or PFOS – or any PFAS - in California nor at the federal level.[89]

IV. A.B. 756: CALIFORNIA'S NEW REGULATORY APPROACH TO AGGRESSIVELY MONITORING PFAS CONTAMINATION IN PUBLIC WATER SYSTEMS

In the past two years, California has taken a number of steps to identify and mitigate the threats posed to residents by the presence of PFAS in products, drinking water sources, and the environment. The OEHHA added PFOA and PFOS under Proposition 65 in 2017,[90] while in 2018 the Department of Toxic Substances Control began the process of requiring carpet and rug manufacturers currently using PFASs to explore using safer alternative chemicals in their products.[91] Additionally, the OEHHA, SWRCB, and DDW have worked together since 2018 to study the risks of PFAS exposure and set notification levels for PFOA and PFOS that require PWSs to notify customers when concentrations of these chemicals meet or exceed the levels listed. However, in the summer of 2019, California passed legislation that placed it firmly at the forefront of PFAS regulation among states nationwide.

On July 31, 2019, Governor Gavin Newsom signed into law Assembly Bill 756 (A.B. 756), which was added to the Health and Safety Code as Section 116378[92] and comes into effect on January 2, 2020.[93] With this bill, California became "the first state in the country to require public water

86. Lauren Berg, *Calif. Sets Stricter Oversight Of Two 'Forever Chemicals'*, LAW360 (Feb. 6, 2020, 9:46 PM EST), https://www.law360.com/articles/1241772/calif-sets-stricter-oversight-of-two-forever-chemicals [https://perma.cc/2JCW-WDWR].

87. OEHHA NLS FOR CHEMICALS, *supra* note 84.

88. CAL. HEALTH & SAFETY CODE § 116275 (f) (Deering, Lexis Advance through the 2020 Regular Session).

89. State Water Resources Control Board, Maximum Contaminant Levels and Regulatory Dates For Drinking Water U.S. EPA vs California (Oct. 2018), https://www.Waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/ccr/mcls_epa_vs_dwp.pdf [https://perma.cc/435M-BL9X].

90. CALIFORNIA WATER BOARDS, *supra* note 41.

91. *Id.*

92. A.B. 756, 2019-2020 Assemb., Reg. Sess. (Cal. 2019).

93. Dintzer & Namuo, *supra* note 19.

suppliers [to] notify customers if their water contains . . . PFAS."[94] Under the California Safe Drinking Water Act, the SWRCB is required to administer regulations for providing safe drinking water to the public,[95] and A.B. 756 explicitly grants the SWRCB the authority to order PWSs – either individually or as a group - to monitor for PFAS compounds.[96] With the SWRCB at the helm, A.B. 756 may prove to be the first step in the establishment of statewide standards for PFAS in drinking water, and perhaps even their eventual elimination.

A. The Provisions and Implementation of A.B. 756

Under A.B. 756, the monitoring orders issued by the SWRCB to PWSs will operate in conjunction with the PFOA and PFAS notification and response levels recommended by the OEHHA and adopted by the DDW.[97] Community and non-transient community water systems performing monitoring pursuant to an order under this law will be required to perform certain notification and abatement activities if they detect concentrations of PFOA or PFOS above their respective and combined notification and response levels. If such a water system detects PFOA or PFOS at or above their notification level concentrations of 5.1 ppt or 6.5 ppt, respectively, then the PWS must notify the water system's governing body and the water systems supplied with the affected drinking water within 30 days of the detection,[98] and report the detection in the water system's annual consumer confidence report.[99]

If a PWS under a monitoring order detects PFOA or PFOS at or above their respective response level concentrations, then the PWS must provide notice in its annual consumer confidence report or take the water source out of service.[100] Additionally, when a response level is exceeded, the PWS must either take the water source out of use or provide public notice within 30 days of detection. To satisfy this provision, the community water system must: (1) mail or deliver notice to each billed customer and any service connection to which the PWS supplied water; (2) email notice to each customer; (3) post notice on the system's website; and (4) engage in additional methods to reach customers not likely to be reached, such as publishing notice in a local paper or social media.[101] To provide adequate

94. *Id.*
95. A.B. 756, *supra* note 90.
96. *Id.*
97. *Id.*
98. *Id.*; CAL. HEALTH & SAFETY CODE § 116455 (Deering 2020).
99. Assemb. B. 756, 2019-2020 Leg., Reg. Sess. (Cal. 2019).
100. *Id.*
101. *Id.*

notice, a non-transient water system must: (1) post notice conspicuously throughout the service area, and (2) pursue additional methods of notice, such as publishing notice in a local paper or emailing employees.[102] A.B. 756 also specifies that any notice must: (1) be easily understood; (2) be available in English and Spanish; (3) describe the nature of the detection and those affected; and (4) contain various other details.[103]

B. A.B. 756 is an Aggressive but Balanced Public Health Measure with Potential Liability Consequences for Water Suppliers

A.B. 756 is a balanced first step toward effective statewide monitoring of PFAS contamination of drinking water. It empowers the SWRCB to set baseline standards for PFAS monitoring based on available scientific evidence of risks to human health, including the results of ongoing testing of water sources by the EPA.[104] On the other hand, A.B. 756 provides PWS with confirmed detections flexibility in their response while ensuring that customers are always notified when PFAS levels become a serious concern. In short, A.B. 756 balances concern for the risks of exposure to PFAS with uncertainty about their adverse health effects on exposed populations. However, the creation of drinking water standards for PFAS under A.B. 756 could potentially expose PWSs to liability for fear of exposure claims under California's landmark toxic tort case, *Potter v. Firestone Tire & Rubber Co.*[105]

V. *POTTER V. FIRESTONE TIRE & RUBBER CO.* AND A.B. 756: POTENTIAL TOXIC TORT LIABILITY FOR PUBLIC WATER SUPPLIERS

A. Concerns of Public Water Suppliers in Light of California Toxic Tort Law

The passage of A.B. 756 has been a cause of concern for certain PWSs worried that the law will expose them to toxic tort liability from their customers. Some have suggested that some PWSs in areas with high preexisting concentrations of PFAS, which until now had not been deemed threatening to human health, may have to remove as many as 30% of their

102. *Id.*
103. *Id.*
104. PFAS ACTION PLAN, *supra* note 30, at 14.
105. Potter v. Firestone Tire & Rubber Co., 6 Cal. 4th 965 (1993).

wells from service in order to comply with the new law.[106] In addition, most water systems lack access to the testing methods necessary to detect PFAS at the minute levels set by the SWRCB, with the Orange County Water District recently becoming the first in the state to achieve the necessary certification to test for PFOA and PFOS in drinking water.[107]

The legal theory of concern to PWSs would likely be that the establishment of low notification and response levels for PFOA and PFOS, and the PWSs' inability to properly monitor their water supply, will inevitably lead to failure to detect PFAS as required by the SWRCB. This failure to detect will subsequently lead to a failure to notify customers or shut-off the water source, thus exposing customers to PFOA and/or PFOS at concentrations deemed potentially dangerous by the SWRCB. As a result, affected customers may be able to establish that they have a valid fear of exposure claim due to their ingestion of contaminated drinking water provided by the PWS on the basis that the state's attempts to regulate PFAS makes reliable the underlying scientific evidence, on which the law relies, that these compounds potentially cause cancer, among other adverse health conditions. The question, then, is how valid a concern is this for PWSs once A.B. 756 takes effect?

In California, an individual who has experienced probable or actual exposure to a toxic substance potentially has a cause of action against the responsible parties. California courts in cases of toxic exposure follow the "discovery rule," in which a cause of action for injuries resulting from exposure, or fear of such exposure, accrues when the "plaintiff suspects or should suspect that their injury was caused by wrongdoing, that someone has done something wrong to her."[108] In other words, the discovery rule determines when the statute of limitations for such a cause of action begins to run. Furthermore, a plaintiff does not need to be aware of specific facts required to establish their claim: they only need a reasonable suspicion of wrongdoing.[109] The discovery rule has been enshrined in section 340.8 of the California Civil Procedure Code. This section sets the statute of limitations for civil actions for injury or illness based on exposure to hazardous or toxic materials at not later than two years from the date of injury or when plaintiff becomes aware, or reasonably should have become aware, of the injury or physical cause of the injury or facts sufficient to put a reasonable

106. Dintzer & Namuo, *supra* note 19.

107. *Addressing PFOA/PFOS in Orange County,* ORANGE CTY. WATER DIST. (last visited Apr. 3, 2020), https://www.ocwd.com/what-we-do/water-quality/pfoapfos/ [https://perma.cc/TZ5H-DQZX].

108. Rivas v. Safety-Kleen Corp., 98 Cal. App. 4th 218, 225 (2002) (citing Jolly v. Eli Lilly & Co., 44 Cal. 3d 1103, 1110–11 (1988)).

109. *Id.*

person on notice that the injury was caused in whole or in part by another's wrongful act.[110] So far, research has been unable to draw a conclusive link between specific concentrations and durations of PFAS exposure and particular adverse health conditions.[111] Thus, in the case of an individual attempting to sue for PFAS exposure, the statute of limitations may not toll until more conclusive research is completed and deemed to be within the scope of knowledge of a reasonable person.

B. Potter v. Firestone Tire & Rubber Co.*: The Standard for Toxic Tort Recovery in Groundwater Contamination Cases*

Potter v. Firestone Tire & Rubber Co. established current California common law standards for IIED, NIED, fear of exposure, and medical monitoring claims in cases of actual and suspected toxic exposure.[112] In *Potter,* plaintiffs were exposed to toxins after Firestone improperly dumped toxic waste into a nearby landfill, contaminating the groundwater that fed the plaintiffs' wells. Plaintiffs ultimately won damages for future medical monitoring, with the possibility of damages for IIED on remand, but the most important result was the court's meticulous discussion of the elements of IIED, NIED, fear of cancer, and medical monitoring claims.

1. Fear of Cancer Claims Under Potter

In *Potter*, the court established the "more likely than not" standard for fear of cancer claims. It stated that:

> [G]enerally, in the absence of a present physical injury or illness, recovery of damages for fear of cancer in a negligence action should be allowed only if the plaintiff pleads and proves that the fear stems from a knowledge, corroborated by reliable medical and scientific opinion, that it is more likely than not that the feared cancer will develop in the future due to the toxic exposure.[113]

Thus, in order to receive damages, a plaintiff must: (1) prove actual exposure to a carcinogen or toxic substance; (2) bring suit once they know or should have reasonable suspicion to know of the exposure; and (3) show that based upon reliable medical or scientific opinion, the plaintiff harbors a serious fear that the toxic exposure was of such magnitude and proportion

110. CAL. CIV. PROC. CODE § 340.8 (Deering 2020).
111. ATSDR Clinician Fact Sheet, *supra* note 28, at 14.
112. *See generally* Potter v. Firestone Tire & Rubber Co., 6 Cal. 4th 965 (1993).
113. *Id.* at 974.

as to more likely than not result in the feared cancer.[114] Given the state of current PFAS research, the "more likely than not" standard may preclude nearly all fear of cancer claims that could result from exposure of customers to drinking water containing PFOA or PFOS at or above their notification and response levels. There are currently no studies that indicate that exposure to PFAS at any level is more likely than not to result in any adverse health condition, including cancer.

However, it could be argued that by setting response and notification levels for these compounds to protect public health, California has made it reasonable for an individual to believe that there is reliable scientific or medical opinion that PFAS exposure at or above these levels is more likely than not to result in certain adverse health consequences. Such a claim would likely have the best chance of success if the plaintiff has suffered clear, long-term exposure to PFOA or PFOS due to ingestion of contaminated drinking water after the adoption of their notification and response levels by the SWRCB, similar to the exposure seen in the C8 health study. Many fear of cancer claims brought under this theory would likely fail, however, due to the fact that the conclusions drawn by the SWRCB do not constitute reliable medical or scientific opinion, but are instead policy decisions made by a government agency on the basis of largely inconclusive data.

2. Negligent Infliction of Emotional Distress Under Potter

Plaintiffs may be more successful under a claim for NIED brought against a PWS that inadvertently exposed them to drinking water containing PFAS above the SWRCB levels due to its failure to adequately monitor the drinking water. Per section 3294 of the California Civil Code, the "more likely than not" standard does not apply in a negligence action where the defendant's conduct in causing the exposure amounts to "oppression, fraud, or malice."[115] The *Potter* court found that fear of cancer damages may be recovered "without demonstrating that cancer is probable" where the defendant has acted with "willful and conscious disregard of the rights or safety of others."[116] However, the plaintiff's fear of cancer must still be reasonable and the plaintiff must show that their actual risk of developing the feared cancer is significant, rather than showing that their risk merely increased significantly but developing cancer is otherwise still "a remote possibility.[117]"

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114. *Id.* at 997.
115. CAL. CIV. CODE § 3294 (Deering 2020).
116. *Potter*, 6 Cal. 4th at 998 (quoting Civ. § 3294(c)(1)).
117. *Id.* at 999.

Any NIED claims brought under the exposure scenarios mentioned above will likely fail, however, as it is unclear whether a plaintiff would be able to prove that a PWS caused the exposure through "oppression, fraud, or malice" rather than merely inadvertently allowing it to happen. PFAS compounds enter the environment from many different sources. Unless a plaintiff could prove that the water supplier caused PFAS to enter the drinking water supply, allowing plaintiffs to recover against passive water suppliers would be unreasonable and potentially disastrous for suppliers in areas already contaminated at no fault of the PWS. Similarly, claims for IIED will almost certainly fail given that plaintiffs must prove "extreme and outrageous conduct by the defendant [toward the plaintiff] with the intention of causing, or reckless disregard of the probability of causing, emotional distress."[118] It is challenging to believe that a court would deem failure to adequately monitor a water source for relatively small concentrations of PFAS due to a widespread unavailability of laboratories able to perform the necessary testing to be extreme or outrageous conduct directed at water customers.

3. Medical Monitoring: The Most Likely Potential Claim for PFAS Exposure Under Potter

Under the new PFOA and PFOS notification and response levels, the cause of action with the highest chance of success is a claim for medical monitoring costs. Per *Potter*, a plaintiff may recover medical monitoring costs in a negligence action regarding toxic exposure where they can prove "through reliable medical expert testimony, that the need for future monitoring is a reasonably certain consequence of a plaintiff's toxic exposure and that the recommended monitoring is reasonable."[119] The court identified a number of factors relevant for determining whether such monitoring is reasonable and necessary, such as:

1. the significance and extent of the plaintiff's exposure to chemicals;
2. the toxicity of the chemicals;

118. *Id.* at 1001 (quoting Christensen v. Superior Court, 54 Cal.3d 868, 903 (1991)).
119. *Id.* at 1009.

3. the relative increase in the chance of onset of disease in the exposed plaintiff as a result of the exposure, when compared to
   a. the plaintiff's chances of developing the disease had he or she not been exposed, and
   b. the chances of the members of the public at large of developing the disease;
4. the seriousness of the disease for which the plaintiff is at risk; and
5. the clinical value of early detection and diagnosis.[120]

The court settled on these factors because they provide adequate protection to plaintiffs with a reasonable need for additional, targeted monitoring as a result of a particular exposure event, while being restrictive enough so as not to "open the floodgates of litigation."[121]

Under *Potter*, it is for the trier of fact to decide, on the basis of competent medical testimony, whether and to what extent the particular plaintiff's exposure to toxic chemicals in a given situation justifies future periodic medical monitoring. Toxic exposure plaintiffs may recover "only if the evidence establishes the necessity, as a direct consequence of the exposure in issue, for specific monitoring beyond that which an individual should pursue as a matter of general good sense and foresight."[122] Blood testing for PFAS is not currently routine, and would thus clearly be tied to the specific exposure period at issue in such a case as has been discussed. However, the strength of a plaintiff's case will turn on the reasonability and necessity of the monitoring, as determined by the five factors listed by the *Potter* court. In this light, the cases most likely to succeed will be those which involve: long-term exposure to high concentrations of PFOA and PFOS, a plaintiff whose medical history suggests that their exposure is the sole cause of the feared health condition, and reliable proof that PFAS compounds are highly toxic. PFAS exposure has most reliably been linked to specific health conditions where individuals were exposed to PFAS over several decades and had PFAS blood concentration levels five-times higher than the national average.[123]

120. *Id.*
121. *Id.*
122. *Id.* (quoting Miranda v. Shell Oil Co., 17 Cal.App.4th 1651, 1660 (1993)).
123. ATSDR Clinician Fact Sheet, *supra* note 28, at 3.

4. PWS's Fear of Toxic Exposure Liability is Warranted, but Successful Claims are Unlikely

Although some water suppliers have feared the potential liability they may face as a result of the requirements they will be subjected to under A.B. 756, current California case law will likely preclude most fear of exposure claims that could be brought against PWSs. The only plaintiffs who may succeed in bringing claims for medical monitoring will be those who have suffered high levels of PFAS exposure over a long period of time after their PWS was subjected to the new SWRCB PFAS standards, and who otherwise have no prior medical history that confounds the linking of the PFAS exposure to the development of their feared adverse health condition. However, the discovery rule may prevent the statute of limitations from running in most cases of PFAS exposure because the uncertainty of PFAS effects on health preclude plaintiffs from knowing or reasonably suspecting that any injury has occurred due to the exposure. Until research can show more definitive links between particular concentrations of PFAS over particular periods of time, and specific health conditions that result from such exposure, the potential liability of PWS that recklessly or even negligently expose their customers to PFOA and PFOS above their notification and response levels is unlikely, but still in question.

C. The PWS Trump Card: Sovereign Immunity

Even if a plaintiff is able to satisfy the conditions for a medical monitoring claim as listed above, their claim against a PWS may still be precluded by sovereign immunity. The primary cases dealing with this issue in California are *In re Groundwater Cases*, 154 Cal. App. 4th 659 (2007) and *Hartwell Corp. v. Superior Court*, 27 Cal. 4th 256 (2002). In these related cases, county residents brought claims for damages against defendant water suppliers alleging defendants provided contaminated drinking water to plaintiffs.[124] Plaintiffs claimed that contamination occurred based on their own qualitative standards for what constituted contamination, despite the water suppliers complying with regulatory standards for toxin levels set by the California Department of Health Services (DHS) and Public Utilities Commission (PUC).[125]

124. *In re* Groundwater Cases, 154 Cal. App. 4th 659, 668 (2007).
125. *Id.*

The court found that "[a]n award of damages on the theory that the public utilities provided unhealthy water, even if that water actually met DHS and PUC standards, would interfere with a 'broad and continuing supervisory or regulatory program' of the PUC."[126] However, "damages claims based on the theory that the water failed to meet federal and state drinking water standards were not barred."[127] A PWS can be liable under Section 815.6 of the California Government Code for failure to discharge a statutory duty, but the court found that the general provisions of the federal and state Safe Drinking Water acts "do not create a mandatory duty within the meaning of Gov Code § 815.6."[128] To constitute a violation of DHS water quality standards, plaintiffs would have had to establish violation of PUC or DHS regulations, not merely "demonstrated isolated exceedances of Maximum Contaminant Levels or Action Levels."[129] Exceedances are the beginning, not the end, of the regulatory scheme for water pollution monitoring; exceedances trigger monitoring which is intended to restore compliance.[130] Under *Hartwell*, the water standards to be met are the "numerical standards adopted by the DHS or any predecessor or similar agency, whether state or federal[,] to the extent the numerical standards adopted by such agency were properly incorporated in California's regulatory scheme."[131]

In re Groundwater and *Hartwell* could have implications for PWSs in situations where exposure has occurred because the PWS has failed to comply with an SWRCB monitoring order under A.B. 756. If a plaintiff can show that exposure occurred because the water supplier consistently failed to provide water below the notification and response levels for PFOA and PFOS, the plaintiff's cause of action does not automatically succeed, but the PWS may not enjoy the shield of sovereign immunity under *In re Groundwater* and *Hartwell*. However, merely showing contamination at the notification or response levels may not constitute a breach of mandatory duty under section 815.6 because A.B. 756 does not require closure of water sources even after detection above the response level, and there is currently no maximum contaminant level for PFAS in California that would mandate automatic shutdown of the contaminated water source. These cases may also preclude otherwise successful claims brought under the *Potter* family of cases by providing a PWS with sovereign immunity under section 815.6 for failure to breach a mandatory duty despite providing

126. *Id.*
127. *Id.* at 669.
128. *Id.* at 671.
129. *Id.*
130. *Id.* at 672.
131. *Id.* at 673.

water contaminated with PFAS, so long as the PFAS concentration is within the SWRCB notification and response levels.

VI. A.B. 756 WILL PROVIDE VALUABLE INFORMATION ABOUT PFAS RISKS, BUT ONLY IF THE STATE ASSISTS LOCALITIES IN IMPLEMENTING ITS REQUIREMENTS

California Assembly Bill 756 is a bold regulation that puts California at the forefront of PFAS drinking water regulation nationwide, without subjecting water suppliers to broad fear of exposure liability as feared by some PWSs. A.B. 756 will almost certainly have a disparate impact on water sources in areas that have higher than average preexisting PFAS contamination but are otherwise deemed safe under pre-A.B. 756 water quality standards. There are a number of sites across California that have registered PFAS concentrations that are twenty-to-fifty times the notification and response levels for PFOA and PFOS,[132] and water suppliers in these areas will be forced to fund the establishment of laboratories capable of providing the detection services required by A.B. 756. These disproportionately affected areas include former and current industrial sites, and areas that rely heavily on well water, such as the Central Valley. In order to mitigate this burden and provide water customers with equal access to this important public health information, the state should work on developing a program to fund detection services or the establishment of permanent testing facilities.

Additionally, A.B. 756 could also have unintended consequences. PFAS are ubiquitous in the environment and in the bodies of the general population, so many water sources necessarily must have some level of contamination already. The PFAS notification and response levels are set at such miniscule concentrations that most water suppliers do not currently have the ability to reliably monitor their water supplies as would be required by the SWRCB. Additionally, these low thresholds, combined with the existing prevalence of PFAS compounds in water sources, mean that a large number of water suppliers may be required to notify their consumers of PFAS exposure every year with little ability to minimize the exposure. This could undermine public confidence in water supplies and spur widespread distress over exposure to chemicals with no currently conclusive adverse health effects at the levels experienced by the broad majority of drinking water customers.

132. CALIFORNIA WATER BOARDS, *supra* note 41.

Alternatively, the PFAS exposure notifications by PWSs are analogous to Proposition 65 warnings, which inform consumers of potential carcinogens but are so prevalent that their effectiveness may be largely diluted, defeating the only mandatory consequence for water suppliers for allowing PFAS levels to persist above their notification and response levels.

VII. CONCLUSION

Overall, A.B. 756 is a forward-thinking bill and a good faith effort to keep the general public aware of these potentially dangerous and nearly ubiquitous compounds. Although inconclusive, current research suggests PFAS exposure may have a broad range of harmful health consequences particularly because it bioaccumulates in plants and animals, and largely persists in the environment without breaking down.[133] California has acknowledged that prolonged exposure at or above the response level for PFOA and PFOS may increase one's risk of developing conditions such as developmental disabilities, liver issues, thyroid issues, and certain types of cancer.[134] However, current scientific uncertainty would make "fear of exposure" claims much harder to establish, and potentially limits damages to medical monitoring costs out of the gate, with the potential for future damages if ongoing studies prove that certain conditions are definitively caused by PFAS exposure in a plaintiff's particular circumstances.

A.B. 756 can also be seen as not going far enough to protect consumers. The only mandatory consequence for exceeding the response level, which is the level of PFOA and PFOS that the OEHHA, EPA, and CDC agree could cause adverse health effects in populations with long term exposure, is that a PWS promptly notify its customers. However, the likely strong public backlash for failing to shut off the water source or engage in additional purification efforts, especially in the post-Flint landscape, may be enough of a deterrent to encourage suppliers to mitigate exposure by closing water sources and decontaminating them promptly upon detection, or even proactively. One need only look to the Orange County Water District, where the SWRCB's lowering of PFOA and PFOS response levels in February 2020 prompted the District to preemptively take a fifth of its wells offline for up to two years while it cleans the water.[135]

A.B. 756 is an imperfect but promising step towards raising public awareness about the dangers of PFAS exposure and, perhaps inadvertently,

133. ITRC FACT SHEET, *supra* note 2, at 1.
134. Rappazzo, *supra* note 4, at 2.
135. Emily C. Dooley, *California County Shuts Down Fifth of Water Wells Over PFAS (2)*, BLOOMBERG LAW NEWS (Feb. 6, 2020), https://news.bloombergenvironment.com/environment-and-energy/california-increases-scrutiny-of-forever-chemicals-in-water [https://perma.cc/7GHH-PGDP].

providing individuals needlessly subjected to harmful PFAS exposure through their drinking water with a potential means of being made whole.