

Emerging Contaminant PFAS
webinar presented by:



SCS ENGINEERS

Cavnac



John Lormon



Matthew Slakoff



Luke Montague



Chris Crosby

PFAS Webinar Agenda:

1. Introduction and Regulations - Chris Crosby
2. Real Estate Considerations - Luke Montague
3. Litigation Update - John Lormon
4. Risk Management Analysis- Matthew Slakoff

Emerging Contaminant PFAS

Environmental Perspective



Presented by:
Chris Crosby
Luke Montague

June 29, 2022

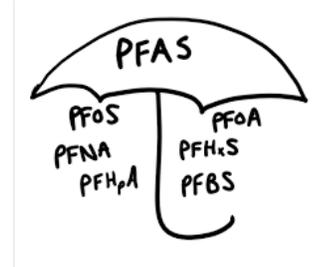
Agenda

- Introduction – What are PFAS?
- Environmental Issues
- Health Concerns
- PFAS Regulations
 - Federal
 - California
- The Future of PFAS
- Due Diligence Considerations
 - New ASTM Phase I Standard
- Environmental Site Assessments



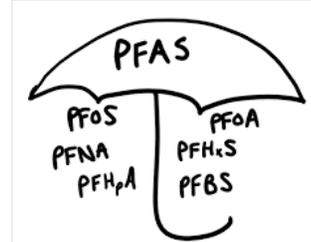
What are PFAS?

- Per- and poly-fluoroalkyl substances (PFAS)
- Family of man-made chemicals includes thousands of individual compounds
- PFOA and PFOS were manufactured and used in the greatest amounts
- PFAS were used in a very broad range of consumer and industrial products



What are PFAS?

- Repel oil and water - i.e., they are both hydrophobic (water-repelling) and oleophobic (oil-repelling)
- Used in coatings and surface protectants for carpets, clothing treatments, paper and cardboard, food packaging, leather products, textiles, cleaning products, pesticides
- Used in the manufacture of fluoropolymers such as non-stick coatings for cookware, waterproof and breathable membranes, electrical wire casing, tubing, plumbing thread seal tape, surfactants, emulsifiers, and wetting agents
- Used in aqueous film forming foam (AFFF), aka fire fighting foams since the 1960's



PFAS

Environmental Issues



- Persistent Organic Pollutants: the C-F bond is very strong
- Stable in the environment – resistant to photo-oxidation, photolysis, and hydrolysis
- Bioaccumulation
- Detected in groundwater, surface water, sediments, WWTP effluent, WWTP sludge, landfill leachate
- Measuring in parts per trillion

PFAS Health Concerns

- Scientists have found PFOA and PFOS in the blood of nearly all the people they tested, but these studies show that the levels of PFOA and PFOS in blood have been decreasing (EPA 2016)

- Animal

- Liver effects
- Immunological effects
- Developmental effects
- Endocrine effects (thyroid)
- Reproductive effects
- Hematological (blood) effects
- Neurobehavioral effects
- Tumors (liver, testicular*, pancreatic*)

* PFOA Only

- Human (possible links)

- Liver effects (serum enzymes/bilirubin, cholesterol)
- Immunological effects (decreased vaccination response, asthma)
- Developmental effects (birth weight)
- Endocrine effects (thyroid disease)
- Reproductive effects (decreased fertility)
- Cardiovascular effects (pregnancy induced hypertension)
- Cancer* (testicular, kidney)

Federal PFAS Regulations

- **PFAS Action Plan** (Oct. 18, 2021) – highlights:
 - CERCLA designation for PFOA/PFOS (final rule summer 2023)
 - Drinking water MCL for PFOA and PFOS (final rule fall 2023)
 - NPDES permitting as a mechanism for PFAS monitoring/regulation
 - Guidance on PFAS Disposal/Destruction (fall 2023)
- **RCRA Announcement** (Oct. 26, 2021)
 - EPA intends to regulate PFOA, PFOS, PFBS, and GenX via RCRA corrective action program (RCRA permitting)
- **EPA Draft Toxicity Report** (Nov. 16, 2021)
 - Science Advisory Board preliminary report indicates 70 ppt (EPA health advisory level for PFOA/PFOS in drinking water) is far too high; should be considered a carcinogen and protective levels should be set an order of magnitude lower (parts per quadrillion/ppq, not parts per trillion/ppt)

Breaking News

VOL. XI - no. 4350

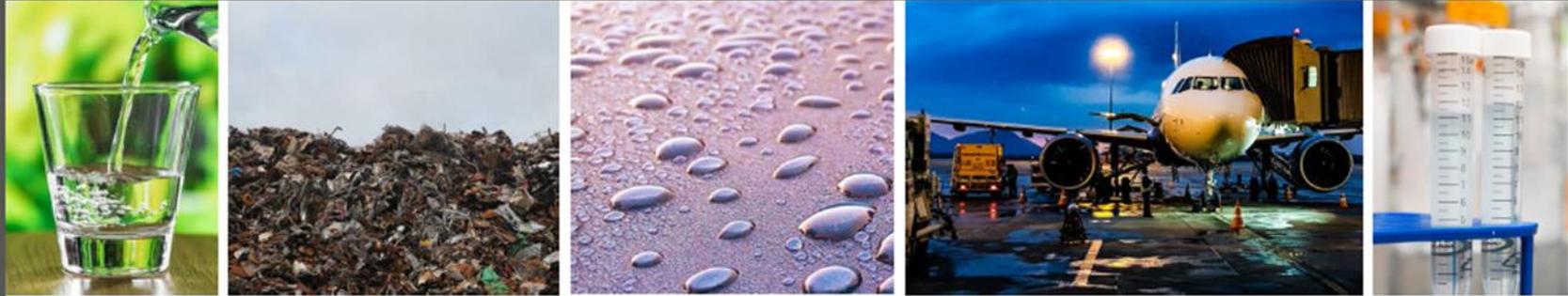
NEW ISSUE

June 15, 2022

New EPA Interim Lifetime Health Advisory Limits for Drinking Water set at Parts Per **Quadrillion!!!**

- PFOA = 4 ppq (4.0×10^{-15}) or 0.0000000000000004
- PFOS = 20 ppq (2.0×10^{-14}) or 0.0000000000000002
- PFBS = 2,000 ppt (2.0×10^{-9}) or 0.0000000002
- HFPO-DA (GenX) = 10 ppt (1.0×10^{-11}) or 0.000000000001

California PFAS Regulations



Water Boards PFAS Phased Investigation Approach

Darrin Polhemus

Deputy Director, Division of Drinking Water

Shahla D. Farahnak

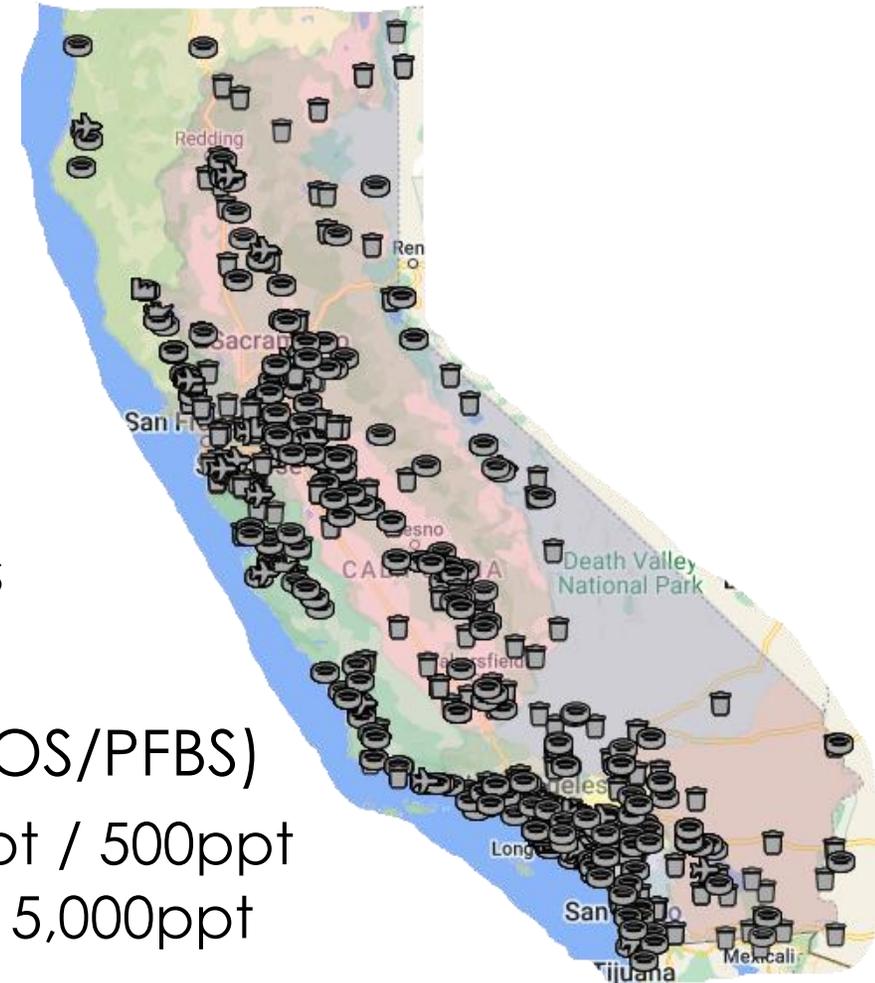
Assistant Deputy Director, Division of Water Quality

March 6, 2019



California PFAS Regulations

- CA Water Board
 - Investigation Orders (~2,200)
 - Airports
 - Landfills
 - Chrome Platers
 - Publicly-Owner Treatment Works
 - Bulk Fuel Terminals and Refineries
 - Public Water Supply (~1,200)
 - Drinking Water Levels (PFOA/PFOS/PFBS)
 - Notification Levels: 5.1 ppt / 6.5ppt / 500ppt
 - Response Levels: 10ppt / 40ppt / 5,000ppt



California PFAS Regulations

CALIFORNIA PROPOSITION

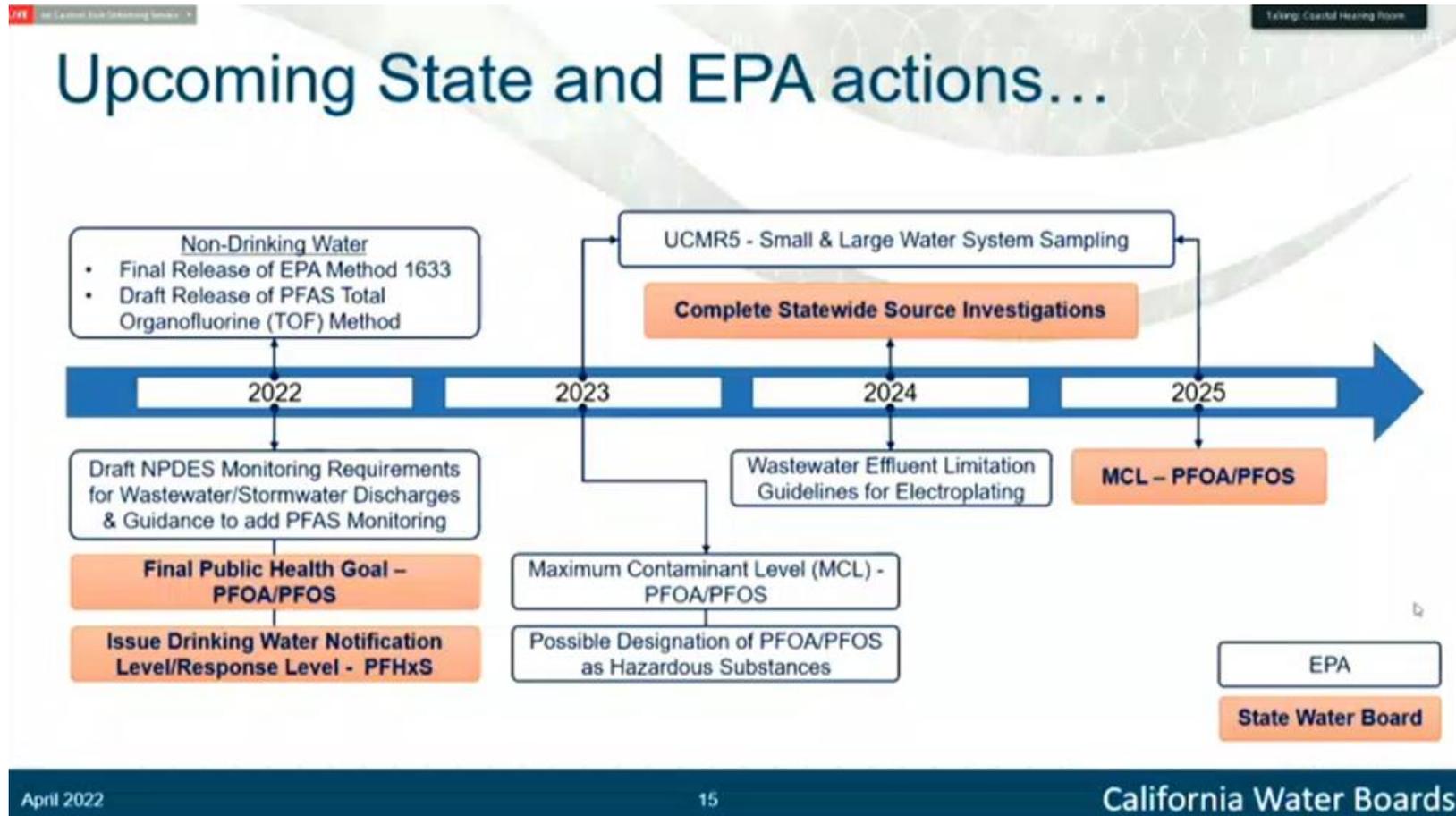
⚠ 65 WARNING ⚠

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information: www.P65Warnings.ca.gov

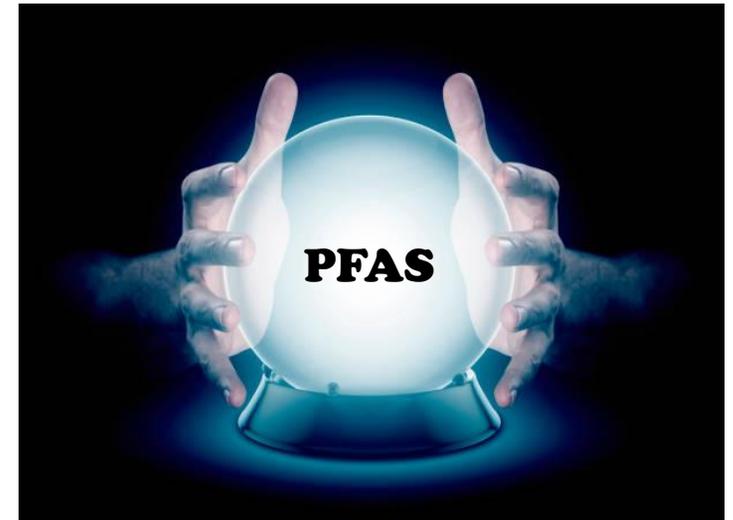
- CA Office of Environmental Health Hazard Assessment
 - PFOA and PFOS are listed under Prop 65
 - Other PFAS compounds being considered

Anticipated Regulatory Actions



The Future State of PFAS

- Increased regulations
- Haz. Substance Designation under CERCLA?
- Regulation of more PFAS compounds
- Impacts on Real Estate
- Increase Litigation
- Liability Management
- Insurance Considerations



Due Diligence Considerations

When acquiring an interest in real property, how do I protect myself from **PFAS**?



- Phase I ESA
- Testing for PFAS
- Environmental Insurance

What are Phase I ESAs?

- Property visit, regulatory & historical records reviews, interviews
- Piece together land uses or features of environmental concern
- Identifies **Recognized Environmental Conditions**
- Establish **landowner liability protections** through AAI



What are Phase II ESAs?

- **Soil, groundwater, and soil vapor sampling**
- **Samples analyzed by a laboratory**
- **Results can be compared to regulatory screening levels**



Phase I ESA Standard



New Phase I ESA standard –
ASTM E1527-21



Changes to the new standard are mostly revised and clarified terminology ...but **how about PFAS?**

PFAS in the new Phase I ESA standard:

- PFAS is added as a **non-scope consideration**
- EPA's planned listing of PFAS as **Hazardous Substances** could change that
- Low Risk Approach would be to add PFAS in the scope



PFAS – Soil and Groundwater Sampling:

- Very low detection levels
- Outside interference precautions
- Expensive
- Screening levels evolving



PFAS – How do I clean it up?

- Clean-up triggered if there are screening level exceedances
- Soil excavation & export as RCRA hazardous waste (i.e., Beatty NV)
- Groundwater – pump & treat through Granular Activated Carbon or Reverse Osmosis





PFAS LITIGATION UPDATE

Procopio Environmental Breakfast Club: June 29, 2022

By John Lormon

PFAS Litigation Update Agenda

1. Sources
2. Expanding Scientific and Public Awareness
3. Litigation Trends
4. Recyclability Cases
5. Defenses



<https://www.mnnet.com/us/pfas>

Expanding Scientific and Public Awareness

- ▶ Research linking PFAS to health and environmental concerns
 - ▶ Improved analytical and testing methods allow for lower detection limits
 - ▶ Lower detection limits established new HRA levels for legal liability
 - ▶ New data can cause a substance to “suddenly” become a focus of attention
 - ▶ C8 Science Panel - studied health effects of PFOA between 2005-2013
 - ▶ Dark Waters: a \$671M settlement for Perfluorooctanoic Acid (PFOA/C8), concentrations found in air, groundwater, landfills and drinking water in Ohio and West Virginia around the DuPont plant
 - ▶ Media and public attention resulting from Dark Waters

Litigation Trends

- ▶ Early PFAS Litigation: water districts and municipalities sued PFAS manufacturer/suppliers- 3M and DuPont
- ▶ Expanding PFAS regulation led to a broader set of litigation claims:
 - ▶ Public and private claims against any party that might have mishandled, discharged or exposed people or the environment to PFAS
 - ▶ When PFOA and PFAS are designated as CERCLA Hazardous Substances and EPA sets MCL for PFAS in drinking water, CERCLA and CWA lawsuits will accelerate
 - ▶ This trend will expand the class of defendants beyond the PFAS manufacturers, and will incorporate downstream parties, product users, NPDES and industrial waste water dischargers, landfills, as well as treatment plants, water delivery suppliers and e-commerce
- ▶ Prop 65: PFOA reproductive toxicity (2017) and cancer (2022), PFOS reproductive toxicity (2017) and cancer (2021), PFNA reproductive toxicity (2021), with additional PFASs currently under review for listing by OEHHA

Litigation Trends (Con't)

- ▶ Litigation over chemicals in consumer products has also increased
 - ▶ March 2022: Suit alleges that McDonald's Big Mac exposed its costumers to PFAS
 - ▶ April 2022: Suit alleges Burger King's Whopper food packaging exposed customers to PFAS
- ▶ Complaints for damages, equitable relief and civil penalties:
 - ▶ California's Unfair Competition Law (UCL) prevents unlawful, unfair, or fraudulent business practice, deceptive, untrue or misleading advertising
 - ▶ Economic damage claims are easier to prove vs demonstrating that a product allegedly injured the plaintiff
 - ▶ Plaintiff's often also seek specify injunctive relief, restitution, medical monitoring, cost and attorney's fees

Litigation Trends (Con't)

- ▶ In 2020 Congress passed National Defense Authorization Act (NDAA) that directed EPA to add PFAS to the Toxic Release Inventory (TRI), the public data base created by the Emergency Planning Community Right to Know Act (EPCRA)
 - ▶ *National PFAS Contamination Coalition et al. v. the US Environmental Protection Agency et al.* January 2022: Suit claiming that EPA violated the NDAA and the Administrative Procedures Act when it exempted de minimis parties from the TRI PFAS rules since EPA has identified PFAS as “emergency contaminates” which have been found in drinking water.
- ▶ EPA has proposed listing PFAS as “hazardous substances” by the summer of 2023, such a listing will impose significant cleanup liability on numerous PRPs
 - ▶ The water utilities sector is asking Congress for a legislative exemption from CERCLA liability stemming from PFAS releases, but there is serious question whether EPA has such authority

Plastic Recyclability Cases

- ▶ June 2022: California AG sued Exxon Mobile for deceptive trade practices and other consumer protection rooted claims against Exxon and other energy companies to recover money the state spent on cleaning plastic from water ways
- ▶ The Earth Island Institute has targeted Nestle, PepsiCo, Clorox and others for plastic pollution in the oceans under public nuisance and negligent theories
- ▶ Green Peace claims Walmart violated California's Environmental Marketing Claims Act by promoting products as recyclable when only 9% are
- ▶ Coca-Cola is defending claims of recyclability of its Dasani water bottles
- ▶ Keurig is paying 10 million in claims for falsely advertising single-serving coffee pods as recyclable

Defenses

- ▶ Product content:
 - ▶ Do your products or materials contain PFAS?
 - ▶ Check with your supplier
 - ▶ Test your products
 - ▶ Preserve old and newly developed supporting documents and testimonies/communications
- ▶ If your products contain PFAS:
 - ▶ Use substitute material
 - ▶ Confirm PFAS product representations are accurate
 - ▶ Establish/add a PFAS element to your Waste Management Program
 - ▶ Properly label, package, and ship PFAS waste with required documentation
 - ▶ Confirm that training programs properly manage PFAS products
 - ▶ Is your waste management vendor qualified and licensed to manage PFAS waste?
- ▶ Provide contractual protections: guarantees, indemnities, hold harmless and defense
- ▶ Liability risk management/insurance options

The Cavignac logo is displayed in white text on a blue rectangular background. The background of the entire slide is a dark, aerial view of a city skyline with a large body of water in the foreground.

Cavignac

PFAS – Environmental Insurance

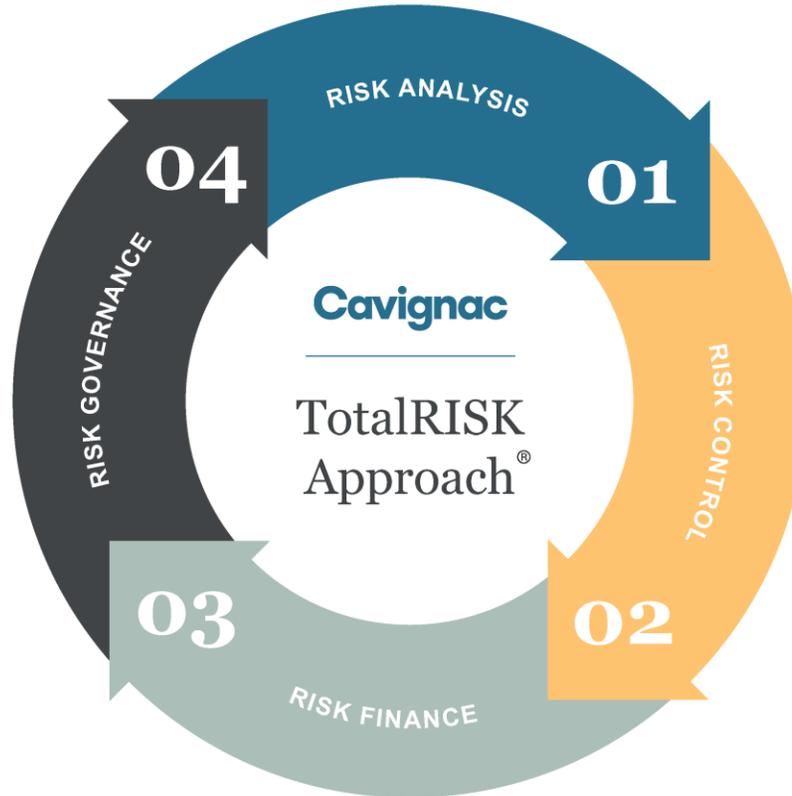
by Matthew Slakoff, CIC, CRIS

01 RISK ANALYSIS

A lot can go wrong for a business. The foundation of an exceptional Risk Management program is to systematically assess what these risks are. This process of identification and quantification provides what we collectively need to make smart risk decisions.

04 RISK GOVERNANCE

This process never stops and needs constant refinement and improvement as your business grows. We will aggressively work to stay current and provide the right information to help you make reasoned decisions for your company.



02 RISK CONTROL

Now that a business has a better idea of what can go wrong, lets determine how to address the risk. The purpose of this part of our process is to reduce the frequency and severity of potential losses that can harm your company. The 5 key areas we focus on are Human Resources, Safety, Claims Management, Contractual Risk Transfer and Financial Management.

03 RISK FINANCE

Once we have systematically assessed and determined how we can mitigate risk, we are now in the ideal position to evaluate Risk Finance options. We will negotiate the right coverage at the lowest realistic cost based on all the improved Risk Profile created through the first 2 steps of this process.

PFAS in the News

Your search for "PFAS" returned 2167 results.

[EPA Adds Five PFAS Chemicals to List of Regional Screening and Removal Management Levels to Protect Human Health and the Environment](#)

Source: <https://www.epa.gov/>, May 18, 2022 Today, EPA is taking an important step forward to protect people from per- and polyfluoroalkyl substances (PFAS) by adding five PFAS chemicals for a total of six PFAS chemicals to a list of risk-based values that help EPA determine if response or remediation...

[Where tannery spread sludge on Michigan farm, a PFAS problem grows](#)

Source: <https://www.mlive.com/>, June 1, 2022 By: Garret Ellison The bucolic farmland along the Newaygo and Oceana county border seems far removed from the perils of industrial pollution. Yet, that is exactly what the state is investigating this year at two properties where crops and livestock were f...

[Cape Fear lawmakers want polluters, not ratepayers, to pay for PFAS abatement](#)

Source: <https://www.wect.com/>, May 27, 2022 By: Michael Praets Nearly five years ago residents relying on drinking water from the Cape Fear River learned about the pollution of the river with the chemical known as GenX. The revelation spurred lawsuits, federal intervention, and anger from those impa...

[Cannon PFAS destroyed longtime Clovis farmer's dairy](#)

Source: <https://www.abajournal.com/>, May 28, 2022 By: Therese Davis Art Schaap remembers the day in 2018 when people from Cannon Air Force Base knocked on his front door and asked to test his water. The Clovis dairy farmer had seen airmen use firefighting foam during training exercises. But he soon...

[Cannon PFAS destroyed longtime Clovis farmer's dairy](#)

Source: <https://www.abajournal.com/>, May 28, 2022 By: Therese Davis Art Schaap remembers the day in 2018 when people from Cannon Air Force Base knocked on his front door and asked to test his water. The Clovis dairy farmer had seen airmen use firefighting foam during training exercises. But he soon...

[Companies Face Billions in Damages as PFAS Lawsuits Flood Courts](#)

Source: <https://news.bloomberglaw.com/>, May 23, 2022 For years, plaintiffs' lawyers suing over health and environmental damage from so called forever chemicals, known collectively as PFAS, focused on one set of deep pockets—E. I. du Pont de Nemours and Co. But over the past two years, there's...

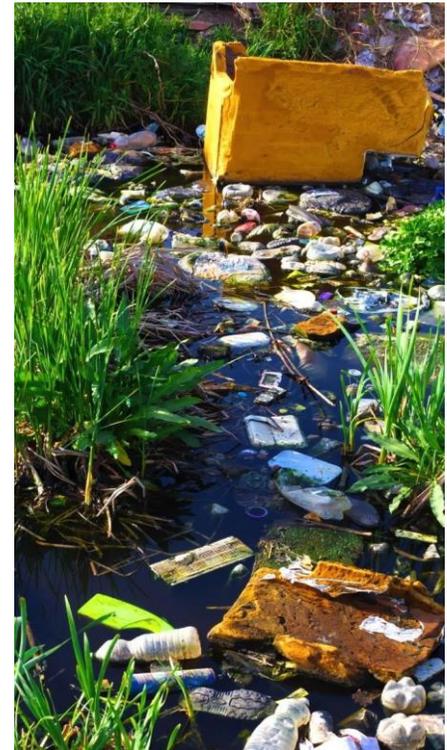
[Companies Face Billions in Damages as PFAS Lawsuits Flood Courts](#)

Source: <https://news.bloomberglaw.com/>, May 23, 2022 For years, plaintiffs' lawyers suing over health and environmental damage from so called forever chemicals, known collectively as PFAS, focused on one set of deep pockets—E. I. du Pont de Nemours and Co. But over the past two years, there's...

Environmental Loss & Damage

Experience & Trends

- Number and severity is increasing
 - As regulations take effect and enforcement increases
 - Industrialization pushes in pristine habits
 - Growing and vocal environment action groups
 - Adverse publicity and reputational risk
- Complex – cause, damage, coordination and response
- 75% of all environmental claims on EIL programs are for on-site clean-up (regulatory action)
- Require immediate response—expertise
- Liaison/communication with the regulators and authorities, plus:
 - Other local enforcement agencies
 - Local government
 - Communities
 - NGOs/pressure groups



1. Environmental Insurance

Sample Gap Analysis

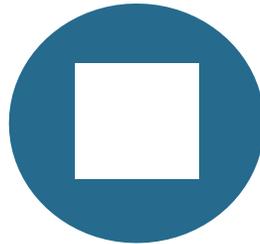
CGL & Environmental Liability

COVER AND TRIGGER LEGAL LIABILITY	GENERAL LIABILITY	POLLUTION
3 rd Party Bodily Injury and Property Damage On-Site	?	Yes
On-Site Clean-Up	No	Yes
Legal Defense	?	Yes
Directors and Officers	No	Yes
Business Interruption	?	Yes
Transportation	?	Yes
Non-Owned Disposal Sites	No	Yes
Environmental Damage - Biodiversity	No	Yes

Environmental Insurance Market



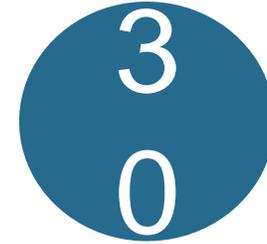
Most competitive market in 25 years
Significant leverage in pricing and coverage terms.



Historical major insurers merge or out:
AIG, ACE & Chubb,



New and emerging markets:
Great American, Berkeley, Beazley, AWAC, Ironshore, Swiss Re, Navigators, Travelers, Philadelphia, CV Starr



Totalling almost 30 markets
offering some form of pollution coverage

Environmental Insurance

- **Pollution Legal Liability** (aka Pollution Liability or Environmental Impairment)
- **Contractors Pollution Liability**
 - Incidental exposure
- **Environmental Contractors/Consultants Insurance**
- Those parties whose operation is directly tied to pollutants (lead, asbestos, mold, etc.) Site-Specific Environmental Impairment Liability
- **Products Pollution Liability**
 - Manufacturers, Wholesalers, Distributors
 - Products not meant for consumption, but that pose an environmental threat – paint, solvents, chemicals, coatings
- Storage Tank Liability
- OPPI or CPPI
- Cost Cap Remediation Policies

Environmental Insurance

PLL Coverage Enhancements

- Non-Owned Disposal Sites
- Transportation of cargo
- Biodiversity
- Mold, Legionella Pneumophilia
- Disinfection Costs (MRSA)
- Illicit Abandonment
- Business Interruption
- Independent counsel selection
- Defense is included within policy limits
- Fines, Penalties, and Punitive, Exemplary or Multiplied Damages where allowable by law
- One-year or multi-year policies (10-year max)

What You Can Do Now

- First and foremost, manufacturers, distributors and municipalities—must investigate and learn about their potential exposure and the evolving legal landscape. Environmental coverage should be obtained now while it is still available.
- Insurance is written on a case-by-case basis, so companies that produce or use PFAS should make themselves attractive to carriers by showing risk mitigation approaches, such as:
 - Proactively identifying areas of potential contamination and aggressively monitoring those sites to make sure groundwater is not polluted.
 - If pollution is found, proactively remediating contamination to reduce or prevent liability litigation.
 - Researching alternatives to using PFAS in products to mitigate future risk exposures.
- Also, companies with environmental concerns that pre-date 1985/86 should spend some time analyzing old property and liability forms for possible existing pollution coverage. The insurance industry didn't start broadly excluding pollution from policies until 1985.
- Ultimately, the best approach for insureds is a responsible, proactive commitment to risk mitigation and obtaining the best coverage available for their specific situation.



Cavignac



John Lormon

Office Phone: 619.515.3217

Email: john.lormon@procopio.com

Webpage: <https://procopio.com/people/john-j-lormon/>



Matthew Slakoff

Office Phone: 619.234.6848

Email: MSlakoff@cavnac.com

Webpage: <https://www.cavnac.com/>



Luke Montague

Office Phone: 858.583.7749

Email: LMontague@scsengineers.com

Webpage: www.scsengineers.com



Chris Crosby

Office Phone: 619-920-1107

Email: CCrosby@scsengineers.com

Webpage: www.scsengineers.com