Federal and State Regulation of
Chemical Substances and Chemical Spills
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Overview and Summary

Overview

Recent tests of private drinking water wells and a municipal public water supply in Bennington County indicated the presence of the chemical perfluorooctanoic acid (PFOA) in varying concentrations. The Senate Committee on Natural Resources and Energy requested a summary of the current federal and state laws that do or could apply to the regulation of chemical use in the State. The Committee also sought information regarding the authority under which the State can respond to chemical contamination that occurs in the State of Vermont.

This memorandum briefly summarizes the federal and State law that regulates chemical use in Vermont. The memorandum also summarizes the authority under which the State can respond to existing chemical contamination in the State. Because chemicals are used in various ways and by various industries, multiple federal and State authorities are summarized. Not every listed authority will apply to every incident of chemical use or contamination. The specific facts of each use, including the type of chemical used, will dictate the law or laws that could apply.

This memorandum also discusses whether or not a summarized law would or could apply to PFOA contamination. The discussion of whether a law applies to PFOA contamination is strictly hypothetical and should not be relied on as instructive in the recently discovered PFOA contamination in the State. The Agency of Natural Resources and other State actors with regulatory jurisdiction should be consulted regarding any current or pending response to the chemical contamination in Bennington County.

A. FEDERAL LAW

1. Toxic Substances Control Act (TSCA)

- First enacted in 1976; 15 U.S.C. §§ 2601–2697.
- Authorizes the EPA to identify and regulate potentially dangerous chemicals in U.S. commerce that should be subject to federal control.
- The EPA Administrator shall by rule require manufacturers and processors to test certain substances to develop data relevant to whether they present an unreasonable risk of injury to health or the environment.
- Manufacturers and processors of new substances or substances that will be applied to significant new uses must first notify the EPA and submit the data from any required testing. The EPA is prohibited from enacting blanket testing requirements and thus is limited to deciding which chemicals or categories warrant the costs of premarket testing.
- If a chemical will present an unreasonable risk, the EPA must promulgate requirements to protect against the risk but the EPA is limited to regulating only to the extent necessary to protect adequately and only to using the least burdensome approach.
- Requires the EPA to maintain an inventory of chemicals. Approximately 55,000 chemicals were grandfathered onto the first list and, thus, were not new chemicals. Any chemical not on the list is, by definition, a new chemical.
- Generally preempts State testing requirements, premanufacture notice, and regulation of hazardous chemicals.
- PFOA is a chemical that was "grandfathered" upon adoption of TSCA.

2. Emergency Planning and Community Right-to-Know Act (EPCRA)

- First enacted in 1986; 42 U.S.C. §§ 11001–11050.
- The governor of each state shall appoint a state emergency response commission, which shall designate emergency planning districts and appoint members of a local emergency planning committee for each district.
- Each committee shall prepare an emergency response plan and review it annually.
- The owner or operator of each facility at which extremely hazardous substances are present in excess of the EPA established threshold planning quantity shall notify the state commission of the presence of the substances.

- The EPA must publish a list of extremely hazardous substances and threshold planning quantities for each substance.
- Sets forth the circumstances under which a facility owner or operator shall immediately notify the local committee or state commission of the release of a substance.
- PFOA is not on the list of chemicals that are regulated under EPCRA.

3. <u>Toxic Release Inventory (TRI)</u>

- Requirement under EPCRA.
- A computerized EPA database of toxic chemical releases to the environment by manufacturing facilities.
    - "Toxic chemical" are substances that may sicken people who are exposed to them in relatively small amounts by eating, drinking, breathing, or through skin absorption.
- Requires manufacturing facilities that manufacture, use, or process toxic chemicals to report annually to the EPA on the amounts of each chemical released to each environmental medium (air, land, water) or transferred offsite.
- The EPA makes these data available to the public in raw and summarized form.
- PFOA is not subject to TRI reporting.

4. <u>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)</u>

- First enacted in 1980; 42 U.S.C. §§ 9601–9675.
- When a hazardous substance or a pollutant that may present an imminent and substantial danger to the public health or welfare is released or about to be released, the President may remove such substance, provide for long-term remedial action, or take any other action necessary to protect the public health or welfare or the environment.
- Established a broad liability scheme that holds both past and current owners and operators of contaminated facilities financially responsible for the cleanup. If these potentially responsible parties cannot be found or cannot pay for the cleanup, CERCLA authorizes the federal government to finance the cleanup.
- Establishes defenses and limits to liability; the disposal of de micromis amounts of hazardous substances and municipal solid waste are exempt from liability; innocent purchasers, contiguous landowners, and qualified bona fide prospective purchasers may also be exempt from liability.

- Remedial actions must assure protection of human health and the environment, be as consistent with the National Contingency Plan as practicable, be cost-effective, and give preference to permanent treatment. They must attain a level of control that equals the standard required by any applicable or relevant and appropriate requirements of other federal or state environmental laws.

- Specific actions that are required to clean up contaminants are determined on a site-by-site basis.

- PFOA is not a hazardous substance under CERCLA.

5. Resource Conservation and Recovery Act (RCRA)

- Enacted in 1976 (amended Solid Waste Disposal Act of 1965); 42 U.S.C. §§ 6901–6992k.

- Hazardous and solid waste management:

    - Hazardous wastes are regulated by the federal standards.

    - Nonhazardous solid wastes are primarily regulated by the states.

- Hazardous waste is solid waste that is potentially dangerous to human health or the environment.

- Requires the EPA to determine which hazardous wastes should be subject by identifying hazardous waste characteristics and by listing specific substances as hazardous waste. The EPA must consider toxicity, persistence, degradability in nature, potential for accumulation in tissue, flammability, and corrosiveness.

- Requires the EPA to promulgate standards applicable to generators and transporters of characteristic or listed hazardous waste and owners and operators of facilities for treatment, storage, and disposal of such wastes.

- Includes specific land disposal restrictions for hazardous wastes.

- States may apply to the EPA for authority to administer and enforce their own hazardous waste programs in lieu of the federal program. Must be equivalent to the federal program, consistent with the federal and state programs in other states, and provide adequate enforcement of compliance.

- PFOA itself is not hazardous waste.

6. Clean Water Act (CWA)

- First enacted in 1972 (amending the federal Water Pollution Control Act of 1948); 33 U.S.C. §§ 1251–1387.
- Objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters.
- The discharge of any pollutant into navigable water by any person is unlawful. Primarily directed at point source pollution (such as pipes) by requiring a National Pollutant Discharge Elimination System (NPDES) permit for a discharge.
- Does not directly regulate non-point source pollutants (e.g., runoff from agriculture). Requires states to develop water quality standards. For waters that cannot meet the water quality standards through direct point source regulation, the state must issue a Total Maximum Daily Load (TMDL) of pollutants that such waters can receive. The state must submit a management program for control of nonpoint source pollution to reduce pollution and comply with the state water quality standards.
- States were encouraged to pursue groundwater protection activities but groundwater protection is not required or regulated under the act.

7. Safe Drinking Water Act

- First enacted in 1974; 42 U.S.C. §§ 300f–300j–26.
- Key federal law for protecting public water supplies (PWS) from harmful contaminants.
- The EPA shall publish maximum contaminant level goals (MCLGs) and promulgate national primary drinking water regulations (NPDWRs) for certain designated contaminants that may have an adverse effect on health, are likely to occur in the public water supply, and the regulation of which presents a meaningful opportunity to reduce health risks.
    - MCLG shall be at the level at which there are no known or anticipated adverse effects on the health of persons and that allows an adequate margin of safety.
    - Each NPDWR shall specify a maximum contaminant level that is as close as feasible to the MCLG.
    - Must promulgate secondary NPDWRs to protect the public welfare.
- The EPA must publish a list of contaminants not subject to an NPDWR that are known or anticipated to occur in the PWS and may require regulation. Review every five years.

- States have primary enforcement responsibility for a PWS where the EPA determines that the state has adopted drinking water regulations that are no less stringent than the NPDWRs, that the state has adequate enforcement mechanisms, the state exemptions and variances conform to the federal requirements, and the state has an adequate emergency drinking water plan.

- The EPA must promulgate regulations for underground injection control programs to protect underground sources of drinking water. Must list states for which a program may be necessary. States may develop the program which must be approved by the EPA.

- States are to establish programs to protect wellhead areas (the surface and subsurface areas surrounding water wells or wellfields supplying a PWS) from contamination that may have an adverse effect on human health.

- PFOA does not have a MCLG under federal law.

8. <u>Clean Air Act (CAA)</u>

- Enacted in 1970 (amending Air Pollution Control Act of 1955); 42 U.S.C. §§ 7401–7671.

- The EPA must promulgate primary and secondary national ambient air quality standards (NAAQS) necessary to protect public health and public welfare. Public welfare includes effects on soil and water.

- States must submit to the EPA state implementation plans (SIPs) for the implementation, maintenance, and enforcement of primary and secondary NAAQS. States are designated into areas; areas are designated as attainment, nonattainment, or unclassifiable.

- Depending on the area and level of attainment, regulations address the construction of new major stationary sources, new major emitting facilities, and modifications to existing sources. Additionally, the EPA must regulate to prevent significant deterioration from hydrocarbon, CO, photochemical oxidant, and nitrogen oxide emissions.

- The statute lists 189 hazardous air pollutants (HAPs) and directs the EPA to revise the list periodically. The EPA must publish and periodically modify a list of categories and subcategories of major and area sources of HAPs.

    - Must establish emission standards for these categories and subcategories.

9. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

- First enacted in 1972; 7 U.S.C. §§ 136–136y.
- Governs the sale and use of pesticide products within the United States through registration and labeling.
- The term pesticide is broadly defined and includes substances when used to control mold, mildew, algae, and other nuisance growths and also applies to disinfectants and sterilizing agents, among other substances.
- No person may distribute or sell a pesticide unless, subject to certain exceptions, it is first registered with the EPA. As part of registration, the EPA shall classify it as being for general use or restricted use, or both.
    - Requirements for registration include an absence of unreasonable adverse effects on the environment when the pesticide is used in accordance with commonly recognized practices.
    - If at any time after registration the registrant has additional information concerning the pesticide's unreasonable adverse effects on the environment, the registrant must submit such information to the EPA.
- State authority:
    - May regulate the sale or use of any federally registered pesticide only to the extent the regulation does not permit any sale or use prohibited by the FIFRA.
    - May not impose any labeling or packaging requirements different from those required under FIFRA.
- PFOA is not regulated under FIFRA.

B. STATE LAW

1. Toxic Substances

a. Toxic Use Reduction Program (10 V.S.A. ch. 159, §§ 6623–6632)

- The goal and purpose of the program is the elimination or reduction of the use of hazardous, particularly toxic, materials wherever possible.

- "Toxic substance" or "toxics" means any substance in a gaseous, liquid, or solid state listed under Title III, Section 313 of the Superfund Amendments and Reauthorization Act (SARA) of 1986.
  - The ANR may amend the list of substances under 10 V.S.A. § 6625(d).
  - PFOA is not a SARA listed substance

- The ANR shall establish a technical and research assistance program to assist hazardous waste generators and large users of toxic substances in identifying and applying toxics use reduction methods and hazardous waste reduction methods.

- The following manufacturers must adopt a toxics use and hazardous waste reduction plan:
  - Generators of 2,600 or more pounds of hazardous waste per year;
  - Generators of 26.5 or more pounds of acutely hazardous waste per year; and
  - Large users of toxic substances;
    - A large user is a SIC coded facility with 10 or more full-time employees that: (A) manufactures, processes, or otherwise uses more than 10,000 lbs. of a toxic substance per year; or (B) manufactures, processes, or otherwise uses more than 1,000 lbs. but less than 10,000 lbs. of a toxic substance per year if that substance accounts for more than 10 percent of the total of toxic substances used at the facility during the year.

- A toxics use and hazardous waste reduction plan shall be updated every three years.

- Each plan shall:
  - Determine any toxics use reduction and hazardous waste reduction methods that may be implemented to reduce the use of toxics substances and hazardous waste generated without shifting risks from one part of a process or environmental medium to another.
  - Include a plan to document and implement toxics use reduction and hazardous waste reduction.

- The plan shall also include a rationale for the technically and economically feasible toxics use reduction and hazardous waste reduction that will be taken by the generator or large user with respect to each toxic substance used.

- The plan shall establish specific performance goals for the reduction of toxic substances and hazardous waste.

- On or after 1992, the ANR shall select by SIC Code at least two categories of generators with potential for toxics use reduction and hazardous waste reduction. The ANR shall examine the plans of the generators and large users and determine whether they comply with plan requirements.

***b. Act 188—Chemicals of High Concern to Children (CHCC)* (18 V.S.A. ch. 83a)**

- Under 18 V.S.A. § 1775, beginning on July 1, 2016, a manufacturer of a children's product containing a CHCC shall notify the DOH biennially of the presence of the chemical in the product.

- In 18 V.S.A. § 1772(7), a "children's product" is defined as a "consumer product" marketed for use by, marketed to, sold, offered for sale, or distributed to children in Vermont, including:
  - Toys; children's cosmetics; children's jewelry; products to help a child with teething or sleep; products for feeding a child; children's clothing; and child car seats.

- Under 18 V.S.A. § 1772(7) and (8), the definition of "children's product" and the definition of "consumer product" include multiple exceptions from coverage under the act.

- Under 18 V.S.A. § 1773, 66 chemicals are listed as a CHCC.
  - Chemicals may be added/removed from the list by the DOH rule if certain criteria are satisfied.
  - PFOA is not a listed CHCC.

- Notice of a CHCC in a children's product is not required if the CHCC is:
  - an intentionally added chemical that does not exceed a de minimis threshold (PQL); or
  - present in a product as a contaminant at a concentration of less than 100 ppm.

- The notice shall include: the name of the chemical; the chemical registry number; a description of the children's product containing the chemical, <u>including,</u> the brand name of the product model; and the amount of the chemical by weight in the product.
  - The information in a manufacturer's notice shall be posted to the DOH website.

- The DOH, upon the recommendation of a Chemicals of High Concern to Children Working Group, may adopt a rule to regulate the sale or distribution of a children's product containing a CHCC upon a determination that:
  - children will be exposed to the chemical; and
  - there is a probability that, due to the degree of exposure or frequency of exposure of a child to a CHCC in a children's product, exposure could cause or contribute to one or more listed adverse health impacts.

2. Regulation of Solid and Hazardous Waste

a. Solid waste (10 V.S.A. ch. 159)

- Under the ANR Solid Waste Rules, treatment, storage, or disposal of solid waste outside a certified facility is prohibited except for a limited exemption for sludge from wastewater treatment.
    - "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that such solid waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any ground or surface waters.
    - "Solid waste" means any discarded garbage, refuse, septage, sludge from a waste treatment plant, water supply plant, or pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous materials resulting from industrial, commercial, mining, or agricultural operations and from community activities but does not include animal manure and absorbent bedding used for soil enrichment or solid or dissolved materials in industrial discharges which are point sources subject to permits under the Water Pollution Control Act, 10 V.S.A. ch. 47.
- Under 10 V.S.A. § 6605, no person shall construct, substantially alter, or operate any solid waste management facility without obtaining a certification from the ANR.
- The certification shall specify the projected amount and types of waste material to be disposed of at the facility.
- Under 10 V.S.A. § 6608, the ANR shall adopt rules regarding monitoring of solid waste disposal facilities.
- Improper handling, discarding, or disposal of PFOA or products containing PFOA could be a violation of the solid waste management requirements in the State.

b. Hazardous waste and hazardous materials (10 V.S.A. ch. 159)

- Under 10 V.S.A. § 6616, the release of hazardous materials into the surface or groundwater or onto the land of the State is prohibited.
    - "Release" means any intentional or unintentional action or omission resulting in the spilling, leaking, pumping, pouring, emitting, emptying, dumping, or disposing of hazardous materials into the surface or groundwaters or onto the lands in the State, or into waters outside the jurisdiction of the State when damage may result to the public health, lands, waters, or natural resources within the jurisdiction of the State.
    - "Hazardous material" means all petroleum and toxic, corrosive, or other chemicals and related sludge included in any of the following:
        i. Any substance defined in section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980;
        ii. Petroleum, including crude oil or any fraction thereof; or

iii. Hazardous wastes.

* "Hazardous material" does not include herbicides and pesticides when applied consistent with good practice conducted in conformity with federal, State, and local laws and regulations and according to the manufacturer's instructions.

* The prohibition on the release of hazardous materials does not apply to release pursuant to and in compliance with the conditions of a state or federal permit.

- "Hazardous waste" means any waste or combination of wastes of a solid, liquid, contained gaseous, or semi-solid form, including those which are toxic, corrosive, ignitable, reactive, strong sensitizers, or which generate pressure through decomposition, heat, or other means, which in the judgment of the Secretary may cause, or contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, taking into account the toxicity of such waste, its persistence and degradability in nature, and its potential for assimilation, or concentration in tissue, *and other factors that may otherwise cause or contribute to adverse acute or chronic effects on the health of persons or other living organisms, or any matter which may have an unusually destructive effect on water quality if discharged to ground or surface waters of the State*. All special nuclear, source, or by-product material, as defined by the Atomic Energy Act of 1954 and amendments thereto, codified in 42 U.S.C. § 2014, is specifically excluded from this definition.

- PFOA is not a CERCLA listed substance or petroleum. It could be determined by the ANR to be a waste that "may cause or contribute to adverse acute or chronic effects on the health of persons or other living organisms…etc.

  * However, it is unclear as to whether the ANR made such a determination.

- Under 10 V.S.A. § 6606(a), no person shall store, treat, or dispose of any hazardous waste without first obtaining certification from the Secretary for such facility, site or activity. Certification shall be valid for a period not to exceed 10 years.

- Certification of all hazardous waste facilities shall include:
  - Identification of all hazardous waste to be handled at the facility, including the expected amounts of each type of waste and the form in which it will be accepted.
  - Contingency plans for effective action to minimize unanticipated damage from any treatment, storage, or disposal of any such hazardous waste.
  - Additional conditions, requirements, and restrictions the Secretary may deem necessary to preserve and protect groundwater and surface water. This may include requirements concerning reporting, recording, and inspections of the operation of the facility.

- The persons liable for a release of a hazardous material are specified under 10 V.S.A. § 6615. Unless exempted by statute, the following are liable for releases:
  - the owner or operator of a facility, or both;

- any person who at the time of release or threatened release of any hazardous material owned or operated any facility at which such hazardous materials were disposed of;
- any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous materials owned or possessed by such person, by any other person or entity, at any facility owned or operated by another person or entity and containing such hazardous materials; and
- any person who accepts or accepted any hazardous materials for transport to disposal or treatment facilities selected by such persons, from which there is a release or a threatened release of hazardous materials.

- A person liable for a release is liable for:
  - the cost of abating such release or threatened release; and
  - the costs of investigation, removal, and remedial actions incurred by the State which are necessary to protect the public health or the environment.
- Any person who is determined to be liable for the release or threatened release of a hazardous material shall take all of the following actions to mitigate the effects of the release:
  - Submit for approval by the Secretary a work plan for an investigation of the contaminated site.
    - This shall be submitted within 30 days from either the date of the discharge or release or the date that the release was discovered if the date of the discharge or release is not known, or within a period of time established by an alternative schedule approved by the Secretary.
    - The site investigation shall define the nature, degree, and extent of the contamination, and shall assess potential impacts on human health and the environment.
  - Perform the site investigation within 90 days of receiving written approval of the work plan by the Secretary, or within a period of time established by an alternative schedule approved by the Secretary. A report detailing the findings of this work shall be sent to the Secretary for review.
  - Submit a corrective action plan, within 30 days from the date of final acceptance of the site investigation report by the Secretary, or within a period of time established by an alternative schedule approved by the Secretary.
  - Implement the corrective action plan within 90 days upon approval of the plan by the Secretary, or within a period of time established by an alternative schedule approved by the Secretary. The corrective action activity shall be continued until the contamination is remediated to levels approved by the Secretary.

3. Water

a. Direct discharge permit (10 V.S.A. ch. 47)

- Under 10 V.S.A. § 1259, no person, without a permit from ANR, shall:
  - discharge any waste, substance, or material into waters of the State;
  - discharge any waste, substance, or material into an injection well; or
  - discharge into a publicly owned treatment works any waste that interferes with, passes through without treatment, or is otherwise incompatible with those works or would have a substantial adverse effect on those works or on water quality.

- "Waste" means effluent, sewage or any substance or material, liquid, gaseous, solid or radioactive, including heated liquids, whether or not harmful or deleterious to waters; provided however, the term "sewage" as used in this chapter shall not include the rinse or process water from a cheese manufacturing process.

- Under 10 V.S.A. § 1263, the ANR is authorized to include terms and conditions in a direct discharge permit. Those terms and conditions may include:
  - specific effluent limitations and levels of treatment technology;
  - monitoring, recording, reporting standards;
  - reporting of new pollutants and substantial changes in volume or character of discharges to waste treatment systems or waters of the State;
  - pretreatment standards before discharge to waste treatment facilities or waters of the State; and
  - toxic effluent standards or prohibitions.

- PFOA could be considered a waste and discharge of PFOA to a surface water or wetland should be permitted by the ANR

b. Indirect discharge permit (10 V.S.A. ch. 47)

- An indirect discharge requires a permit from the ANR prior to the commencement of construction of a system or a facility that would result in an indirect discharge of nonsewage waste or sewage waste.
  - Indirect discharge means any discharge to groundwater, whether subsurface, land based or otherwise.
- If the waste proposed in an indirect discharge includes toxic or hazardous pollutants it will be reviewed by ANR's hazardous waste experts.
- If PFOA was discharged from a plant to groundwater or to soil without an indirect discharge permit, it would be a violation.
  - Discharge under a permit without properly identifying the chemical may also be a violation.

c. 10 V.S.A. § 1272 Order

- If the ANR determines that a person's action, or an activity, results in the construction, installation, operation, or maintenance of a facility or condition that reasonably can be expected to create or cause a discharge to waters in violation of 10 V.S.A. ch. 47, the ANR may issue an order establishing reasonable and proper methods and procedures for the control of that activity and the management of substances used therein which cause discharges.

4. Groundwater

a. Groundwater protection strategy (ANR Rules)

- ANR rules which provides it is the policy of the State of Vermont that it shall protect its groundwater resources to maintain high quality drinking water.
- It shall manage its groundwater resources to minimize the risks of groundwater quality deterioration by limiting human activities that present unreasonable risks to the use classifications of groundwater in the vicinities of such activities.
- The State's groundwater policy shall be balanced with the need to maintain and promote a healthy and prosperous agricultural community.
- The groundwater protection strategy does not create a new permit requirement. Instead it requires that groundwater protection will be integrated within regulatory programs administered by the Secretary by amending appropriate rules to comply with 10 V.S.A. §§ 1390–1394 and this Rule.
- The rule provides a process for classifying the quality of groundwater.
- The rule establishes primary groundwater protection standards to be implemented for the different classes of water.
- The following drinking water quality standards are used in adopting primary groundwater quality standards:
  - EPA Maximum Contaminant Levels (MCL) for drinking water; and
  - in cases where EPA MCL has not been adopted, the Vermont Health Advisory established by the Vermont Department of Health for the Primary Groundwater Enforcement Standard.
- The EPA MCL does not include PFOA. The Vermont Department of Health does.
- The rules also establishes Preventive Action Levels (PALs), and Indicator Parameters.

b. Underground injection control permit (ANR Rules)

- ANR's Underground Injection Control (UIC) rules regulate the approval and permitting of injection wells in the State.
  - An injection well means a disposal system or any bored, drilled, or driven shaft, dug hole, or any other opening in the ground that is used to discharge waste, either under pressure or gravity, to the soil or groundwater. Injection wells may include certain wastewater systems.

- The UIC rules prohibit three types of injection wells and require a permit for three other types.
- Injection wells are prohibited at certain sites and for certain uses.
- The discharge of waste to an injection well from a specific facility, site, or activity or from a category of facilities, sites, or activities if the Secretary determines, that:
    - the waste that is discharged contains constituents in excess of the primary groundwater enforcement standards of the Vermont Groundwater Protection Rule and Strategy; and
    - there is no form of treatment that can be used that would result in compliance with the GWPRS at the point of compliance.
- PFOA is not a constituent listed under the Groundwater Protection Rule and Strategy.

c. Private groundwater cause of action (10 V.S.A. § 1410)

- 10 V.S.A. § 1410 authorizes any person to maintain an action for equitable relief or an action in tort to recover damages, or both, for the unreasonable harm caused by another person withdrawing, diverting, or altering the character or quality of groundwater.
- 10 V.S.A. § 1410(e) lists the factors to be considered in determining whether harm was reasonable.
- A person who alters groundwater quality or character as a result of agricultural or silvicultural activities, or other activities regulated by the Secretary of Agriculture, Food and Markets, shall be liable only if that alteration was either negligent, reckless, or intentional.
- PFOA contamination of groundwater could quality as alteration of the character or quality of groundwater.

d. Groundwater public trust cause of action (10 V.S.A. § 1390)

- 10 V.S.A. § 1390(5) provides that it is the policy of the State that the groundwater resources of the State are held in trust for the public.
    - The State shall manage its groundwater resources in accordance with the policy of this section, the requirements of subchapter 6 of this chapter, and section 1392 of this title for the benefit of citizens who hold and share rights in such waters.
    - The designation of the groundwater resources of the State as a public trust resource shall not be construed to allow a new right of legal action by an individual other than the State of Vermont, except to remedy injury to a particularized interest related to water quantity protected under this subchapter.
    - Environmental Court held that the declaration of public trust in groundwater requires the ANR to perform a "public trust analysis" of permits that could affect groundwater.
- Arguably the designation of groundwater as a public trust resource creates a private right of action to protect the resource. But see State v. Atlantic Richfield Co., No. 340-6-14 (Wash. County Superior Court June 15, 105).
- Private citizens could argue that PFOA contamination is a particularized injury to the public trust resources.

5. Drinking Water and Wells

a. Vermont Department of Health (DOH) Drinking Water Guidance

- The Vermont DOH Drinking Water Guidance document (Guidance) contains three types of values that may be used in the evaluation of drinking water supplies:
    - Primary maximum contaminant levels (MCLs) are legally enforceable standards promulgated by the EPA for use in the regulation of public water systems. Each value represents the highest level of a chemical that is allowed in a public drinking water supply.
        - An MCL reflects consideration of public health concerns due to exposure via ingestion as drinking water and potentially other factors such as cost-benefit analysis, detection limit and best available treatment technology. MCLs are derived for chemicals with carcinogenic and adverse non-carcinogenic health endpoints.
    - Vermont Health Advisories (VHAs) are numeric guidelines researched and derived by the DOH for chemicals that do not have a federal MCL.
        - A VHA reflects consideration of public health concerns and analytical laboratory reporting limits.
        - VHAs consider ingestion exposure for all chemicals as well as potential exposure via inhalation of vapors due to household water use for those chemicals that easily volatilize.
        - VHAs are derived for chemicals with carcinogenic and adverse non-carcinogenic health endpoints.
        - If a VHA is exceeded, it does not necessarily follow that that adverse health effects may occur, but that exposure should be minimized while further evaluation of the water supply is conducted.
    - Vermont Action Levels (VALs) are numeric guidelines researched and derived by the DOH for a small number of chemicals that have MCLs but are of specific public health interest for Vermont Public Water Systems.
        - These few chemicals have both a federal MCL and a DOH derived value.
        - VALs are concentrations at or above which a specific (priority) procedure will be followed in order to provide adequate protection of public health. The process employed to derive VALs is the same as for VHAs.
- On March 7, 2016, the DOH issued a drinking water health advisory for PFOA of 0.02 parts per billion or 20 parts per trillion.
    - The EPA issued a drinking water health advisory of 400 ppt in 2009 (see, e.g., https://www.epa.gov/sites/production/files/2015-09/documents/pfoa-pfos-provisional.pdf).

- The EPA is currently proposing to revise its recommended standard.

- The Vermont DOH PFOA standard is based on the proposed standard in the EPA's draft revisions of its standards. The EPA has proposed an oral reference dose of 0.00002 mg/kg/day.

***b. Public drinking water systems* (10 V.S.A. ch. 56)**

- Under 10 V.S.A. § 1672, to prevent and minimize public health hazards, ANR shall have authority over and shall regulate the purity of drinking water, the adequacy, construction and operation of public water systems, public water sources and public water source protection areas.
  - "Public water source" means any surface water or groundwater supply used as a source of drinking water for a public water system.
  - "Public water system" means any system, or combination of systems owned or controlled by a person, which provides drinking water through pipes or other constructed conveyances to the public and which:
    i. has at least 15 service connections; or
    ii. serves an average of at least 25 individuals for at least 60 days a year.
- The ANR may establish by rule, standards or requirements for:
  - drinking water quality. Such standards or requirements shall be at least as stringent as the most recent national primary drinking water regulations, issued or promulgated by the EPA pursuant to the Safe Drinking Water Act, 42 U.S.C. section 300f et seq.;
  - the construction, protection, testing, and monitoring of public water sources;
  - the mitigation or prevention of public health risks arising from public water sources, public water systems, and public water source protection areas.
- Under 10 V.S.A. § 1673(a), a person shall not construct, operate, alter, expand, or otherwise modify a public water system or public water source without a permit from the ANR.
- Under 10 V.S.A. § 1673, a person shall not operate or maintain a public water system or public water source in a manner that causes or allows that system or source to be at risk of damage or contamination.
- A public water system permit shall be issued or renewed only upon a finding by the ANR that operation of the system will comply with the adopted standards and will not constitute a public health hazard or a significant public health risk.
- Under the ANR Water Supply Rule § 6.1.1, public water systems shall comply with the:
  - maximum contaminant levels (MCLs);
  - maximum residual disinfectant levels (MRDLs);
  - monitoring requirements, routine sampling and repeat sampling requirements;
  - treatment techniques; and

- reporting requirements and public notification requirements for microbiological, inorganic chemical, organic chemical, radiological, and disinfection byproduct contaminants established in this subchapter and in 40 CFR, Parts 141 and 143.

- The ANR Water Supply rule adopts the MCLs and MRDLs of the Safe Drinking Water Act, 40 CFR Part 141.
- The ANR with the concurrence of DOH may establish more stringent MCLs, as it has done for uranium.
- For contaminants which may be detected in a **Public** water system for which MCLs or MCLGs have not been adopted, and the Vermont Commissioner of Health has established a Vermont Health Advisory Level for it, the ANR may adopt the Advisory Level as an MCL or MCLG.
  - ANR has adopted a DOH advisory level for nickel.
- Public Community and Non-Transient Non-Community water systems using groundwater sources shall monitor for Iron and Manganese once every three years.
- Additional monitoring may be required at the discretion of the Secretary.

***c. Potable water supplies—i.e., private wells* (10 V.S.A. ch. 64)**

- Under 10 V.S.A. § 1973, unless exempted, a person shall obtain a public water supply permit from the ANR before:
  - subdividing land;
  - constructing, replacing, or modifying a potable water supply;
  - using or operating a failed supply;
  - constructing a new building or structure;
  - modifying an existing building or structure in a manner that increases the design flow or modifies other operational requirements of a potable water supply;
  - making a new or modified connection to a new or existing potable water supply; or
  - changing the use of a building or structure in a manner that increases the design flows or modifies other operational requirements of a potable water supply.

- "Potable water supply" means the source, treatment, and conveyance equipment used to provide water used or intended to be used for human consumption, including drinking, washing, bathing, the preparation of food, or laundering.
  - This definition does not include a potable water supply that is subject to regulation under chapter 56 of this title.

6. <u>Biosolids</u> (ANR Rules; Solid Waste; Indirect Discharge)

- There are currently four primary strategies in Vermont for the management of wastewater treatment sludge and septage, including:
  - dewatered sludge and septage may be disposed in a landfill;

- sludge and septage may be disposed at an out-of-state incineration facility;
- sludge and septage, or products derived from them following advanced treatment, may be applied to the land as an agronomic supplement; and
- septage may be disposed at municipal wastewater treatment facilities (which produces additional sludge that must be managed via one of the three other general alternatives).

- "Septage" means the liquid and solid materials pumped from a septic tank or cesspool during cleaning.

- "Sludge" means any solid, semisolid, or liquid generated from a municipal, commercial, or industrial wastewater treatment plant or process, water supply treatment plant, air pollution control facility or any other such waste having similar characteristics and effects.

- Land applied septage or sludge needs an indirect discharge permit.

- PFOA in septage or sludge could infiltrate groundwater after land application.

7. <u>Air Emissions</u>

***a. Generally* (10 V.S.A. ch. 23)**

- It is the public policy of the State to achieve and maintain such levels of air quality as will protect human health and safety, and to the greatest degree practicable,
- Under 10 V.S.A. § 556, no person shall construct or install any air contaminant source classified within a class or category identified by rule by the ANR as being subject to permitting requirements without a permit, unless otherwise exempt.
- The Secretary, by rule, may classify air contaminant sources, which cause or contribute to air pollution, according to levels and types of emissions and other characteristics which relate to air pollution, and may require reporting by any class.
  - Classifications may apply to the State as a whole or to any designated area of the State, and shall be made with special reference to effects on health, economic, and social factors, and physical effects on property.
- Any person operating or responsible for the operation of an air contaminant source shall register the source with the Secretary and renew the registration annually if the source emits:
  - more than or equal to five tons of contaminants per year; or
  - less than five tons of contaminants per year and is a source specified in rule by the Secretary.
- Under 10 V.S.A. § 556a, it is unlawful for any person to operate an air contaminant source that has allowable emissions of more than 10 tons per year of all contaminants, excluding greenhouse gases, except in compliance with a permit issued by the Secretary under this section.
  - The ANR may require that air contaminant sources with allowable emissions of 10 tons or less per year obtain a permit, upon determining that the toxicity and quantity of

hazardous air contaminants emitted may adversely affect susceptible populations, or if deemed appropriate based on an evaluation of the requirements of the federal Clean Air Act.

- The ANR may establish emission control requirements, by rule, necessary to prevent, abate, or control air pollution.
    - The requirements may be for the State as a whole or may vary from area to area, as may be appropriate to facilitate accomplishment of the purposes of this chapter, and in order to take necessary or desirable account of varying local conditions.
- If the ANR finds that a generalized condition of air pollution exists and that it creates an emergency requiring immediate action to protect human health or safety, with the concurrence of the Governor, the Secretary shall order persons causing or contributing to the air pollution to reduce or discontinue immediately the emission of air contaminants.
    - The order shall fix a place and time not later than 24 hours thereafter for a hearing to be held before the Director.
    - Not more than 24 hours after the commencement of such hearing and without adjournment thereof, the Director shall affirm, modify, or set aside the order.
- In the absence of a generalized condition of air pollution otherwise referenced in rule, if the ANR finds that emissions from the operation of one or more air contaminant sources are causing imminent danger to human health or safety, the Director of Occupational Health may order the person or persons responsible for the operation to reduce or discontinue emissions immediately.

b. Hazardous air pollutant emissions

- The ANR shall establish a hazardous air contaminant monitoring program. The goals of the program shall be to:
    - measure the presence of hazardous air contaminants in ambient air;
    - identify sources of hazardous air contaminants;
    - assess human health and ecological risk to focus studies on those air contaminants that pose the greatest risk;
    - gather sufficient data to allow the Secretary to establish appropriately protective standards; and
    - ensure adequate data are collected to support the State's operating permit program.
- No person shall discharge, or cause or allow the discharge of, emissions of any hazardous air contaminant, except in conformity with the provisions of this section.
- For each hazardous air contaminant listed in Appendix B and emitted by a stationary source, the source shall apply control technology, production processes, or other techniques adequate to achieve the hazardous most stringent emission rate (HMSER). Once the Secretary has determined HMSER for a stationary source and this determination has been included in an order or agreement entered into or issued under the authority of the Act,

3 V.S.A. § 2822, or other State statutes, said determination shall remain in effect for five years.

- No person shall discharge, or cause or allow the discharge of, any hazardous air contaminants from a stationary source that cause or contribute to ambient air concentrations in excess of any Hazardous Ambient Air Standard.

8. <u>Control of Pesticides</u> (6 V.S.A. chs. 81 and 87)

- The Agency of Agriculture, Food and Markets regulates the use and sale of pesticides in the State.
- Under 6 V.S.A. § 1104(15), the Agency may require correction of sources of pesticide contamination that threaten human health or the environment.
- Under 10 V.S.A. § 6608a, the Agency also has authority to enforce the ANR rules related to rules concerning the generation, transportation, treatment, storage, and disposal of economic poisons.
- PFOA is not a pesticide, but chemicals that are pesticides could fall under the authority of the Agency.

9. <u>Response and Enforcement</u>

***a. Environmental Contingency Fund* (10 V.S.A. § 1283)**

- An Environmental Contingency Fund is established under 10 V.S.A. § 1283. The Fund is within the control of the Secretary.
- Disbursements from the Fund may be made by the Secretary to undertake actions that the Secretary considers necessary to investigate or mitigate, or both, the effects of hazardous material releases to the environment.
- Disbursements under this subsection may be made for emergency purposes or to respond to other than emergency situations.
- Disbursements from the Fund may be made to:
    - Initiate spill control procedures, removal actions, and remedial actions to clean up spills of hazardous materials where the discharging party is unknown, cannot be contacted, is unwilling to take action, or does not take timely action that the Secretary considers necessary to mitigate the effects of the spill.
    - Investigate an actual or threatened release to the environment of any pollutant or contaminant that may present an imminent and substantial danger to the public health and welfare or to the environment.
    - Take appropriate removal action to prevent or minimize the immediate impact of such releases to the public health and the environment.
    - Take appropriate remedial action.

***b. ANR enforcement authority* (10 V.S.A. chs. 201 and 211)**

- Under 10 V.S.A. chapter 201, the ANR has multiple tools for the enforcement of the majority of the environmental programs related to chemical contamination in the State. These tools include:
  - investigation and entry orders;
  - assurances of discontinuance;
  - administrative orders;
  - emergency orders;
  - administrative penalties;
  - permit stays;
  - supplemental environmental project;
  - collection actions;
  - civil citations; and
  - cost recovery.

- Under 10 V.S.A. chapter 211, the Attorney General may enforce environmental violations. The Attorney General is authorized to request a court to order any one or more of the following enforcement actions:
  - Enjoin future activities.
  - Order remedial actions to be taken to mitigate hazard to human health or the environment.
  - Order the design, construction, installation, operation, or maintenance of facilities designed to mitigate or prevent a hazard to human health or the environment or designed to assure compliance.
  - Fix and order compensation for any public or private property destroyed or damaged.
  - Order reimbursement from any person who caused governmental expenditures for the investigation, abatement, mitigation, or removal of a hazard to human health or the environment.
  - Levy a civil penalty.

10. <u>Land Use and Municipal Authority</u>

***a. Act 250* (10 V.S.A. ch. 151)**

- If development that requires an Act 250 permit engages in an improvement or substantial change related to the use of chemicals, an amendment to the permit may be required.

***b. Municipal land use/municipal enumerated powers* (24 V.S.A. § 2291)**

- If an activity or development that involves the use of a chemical requires a local land use permit or is regulated under municipal ordinance adopted under 24 V.S.A. § 2291, the municipality may enforce failure to comply with the relevant municipal law.

11. <u>Public Health Orders</u> (18 V.S.A. § 126)

- Under 18 V.S.A. § 126, the Commissioner of Health or a municipal selectboard may issue a health order, among other authority, to:
  - prevent, remove, or destroy any public health hazard; or
  - mitigate a significant public health risk.
- "Public health hazard" means the potential harm to the public health by virtue of any condition or any biological, chemical, or physical agent. In determining whether a health hazard is public or private, the Commissioner shall consider at least the following factors:
  - the number of persons at risk;
  - the characteristics of the person or persons at risk;
  - the characteristics of the condition or agent that is the source of potential harm;
  - the availability of private remedies;
  - the geographical area and characteristics thereof where the condition or agent that is the source of the potential harm or the receptors exist; and
  - Department policy as established by rule or agency procedure.
- "Public health risk" means the probability of experiencing a public health hazard.
- A health order shall be effective upon issuance and may require any person responsible for contributing to the public health hazard or significant public health risk to take actions to protect the public health. Such actions may include the following:
  - the repair, installation, construction, operation, or implementation of purification equipment or methods;
  - testing, sampling, monitoring, surveying, or other analytical operations required to determine the nature, extent, duration, or severity of the public health hazard or public health risk;
  - the impounding, destruction, or removal of any public health hazard;
  - the cessation of any acts, discharges, or processes contributing to a public health hazard or public health risk;
  - the medical or veterinary treatment of any agent that is contributing to a public health hazard or a public health risk;
  - any other affirmative acts or prohibitions necessary to mitigate a significant public health risk.

C. COMMON LAW

- A property owner's possessory rights to real property may allow for common law claims in tort against another person who damages or affects an owner's use of property.
- These possessory rights include as distinct interests the right to exclude other persons or things from your property and the right to enjoy the property without interference. Violations of these rights may give rise to distinct causes of action.

a. Nuisance—public and private

- A nuisance claim could be brought for groundwater contamination of a person's property.
- To sustain a nuisance claim, a party must show that "an individual's interference with the use and enjoyment of another's property [is] both unreasonable and substantial." Coty v. Ramsey Assocs., Inc., 149 Vt. 451, 457 (1988).
- The standard for determining whether a particular type of interference is substantial is that of definite offensiveness, inconvenience, or annoyance to the normal person in the community.

b. Trespass

- Trespass is an invasion of the plaintiff's interest in the exclusive possession of his or her land.
- Liability for trespass arises when one intentionally enters or causes a thing to enter the land of another." Canton v. Graniteville Fire Dist. No. 4, 171 Vt. 551, 552 (2000) (mem.).
- A more nuanced analysis is required when the trespass at issue involves intangible matter, such as airborne particles or chemicals in groundwater.
- Some courts have "eliminated the traditional requirements for trespass of a direct intrusion by a tangible object," and allowed "recovery in trespass for indirect, intangible matter."
    - These courts generally require the plaintiff to prove "actual and substantial damages."

c. Product liability

- Product liability claims have been brought against product manufacturers based on the theory that a product was improperly designed or manufactured and, thus, led to groundwater contamination.
- Depending on the facts of the PFOA groundwater contamination in Bennington, a products liability claim could be brought against the manufacturer of the product containing PFOA.