

**PERSISTENTLY PRESENT, INCONSISTENTLY
REGULATED: THE STORY OF ASBESTOS AND THE
CASE FOR A NEW APPROACH TOWARD THE
COMMAND AND CONTROL REGULATION OF
TOXICS**

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2013 MICH. ST. L. REV. 257

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INTRODUCTION

Global climate change,¹ ozone destruction,² site contamination,³ water and air pollution,⁴ and species extinction:⁵ many of modern society's largest national and global environmental problems result from and are affected by interactions between chemicals and the natural world.⁶ As humans are constantly in a state of interaction with the environment, additional consequences are found in a vast array of chemically-induced human health ef-

1. The scientific link between the increased atmospheric presence of various chemical gases, such as carbon dioxide and methane, and global climate change is well established. See *Learn the Issues: Climate Change*, U.S. ENVTL. PROT. AGENCY (Oct. 13, 2011), <http://www.epa.gov/gateway/learn/climatechange.html>; AN INCONVENIENT TRUTH (Lawrence Bender Prods. & Participant Prods. 2006).

2. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-05-458, CHEMICAL REGULATION: OPTIONS EXIST TO IMPROVE EPA'S ABILITY TO ASSESS HEALTH RISKS AND MANAGE ITS CHEMICAL REVIEW PROGRAM 58-59 (2005) (explaining that the prevention of ozone destruction was the rationale behind the Environmental Protection Agency's 1978 ban of fully halogenated chlorofluoroalkanes).

3. Chemical compounds such as benzene, trichloroethylene, and polychlorinated biphenyls are a few pollutants often found at the nation's most contaminated sites. *Superfund*, EARL BLUMENAUER, http://blumenauer.house.gov/index.php?option=com_content&view=article&id=1664 (last visited May 15, 2013). Across the country, there are approximately 1,300 such sites, so hazardous that they qualify for government-funded cleanup. *National Priorities List: NPL Site Totals by Status and Milestone*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm> (last updated Mar. 2, 2012); see *National Priorities List: Basic Information*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/superfund/sites/npl/npl_hrs.htm (last updated Mar. 1, 2012).

4. See *Learn the Issues: Water*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/gateway/learn/water.html> (last updated Sept. 11, 2012) and *Learn the Issues: Air*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/gateway/learn/airpollution.html> (last updated Aug. 28, 2012), for links to further information on water and air pollutants, including common chemical contaminants.

5. The Bald Eagle became threatened and was ultimately listed as an Endangered Species due to widespread use of the pesticide DDT, which, upon ingestion, thinned Bald Eagle egg shells, often to the point of non-viability. *Bald Eagle*, U.S. FISH & WILDLIFE SERV., <http://www.fws.gov/midwest/eagle/recovery/biologue.html> (last updated Sept. 1, 2010).

6. For more information on how these issues are being addressed at the international level, see UNITED NATIONS ENV'T PROGRAMME, <http://www.unep.org/> (last visited May 15, 2013). For additional environmental issues of priority at the national level, see *Learn the Issues*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/gateway/learn/> (last updated Sept. 13, 2012).

fects,⁷ the majority of which are unknown⁸ and difficult to diagnose,⁹ despite wide, mainstream chemical use.¹⁰ In 1962, Rachel Carson alerted the nation to the dangers of toxic substances with her novel, *Silent Spring*, igniting the environmental movement and the passage of protective legislation.¹¹ Yet fifty years later, Americans still face serious environmental and health risks from chemical releases.¹²

Of the twenty-three laws currently implemented by the United States Environmental Protection Agency (EPA), more than half, in one way or another, protect against exposure to toxic substances.¹³ Combined, this amalgam of statutes regulates the general use of toxics¹⁴ as well as their release, as pollutants, into various environmental media—air, water, and land.¹⁵ These laws, through their promulgated regulations,¹⁶ prevent toxic

7. U.S. DEP'T OF HEALTH & HUMAN SERVS. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, CS214865-D, HEALTH EFFECTS OF CHEMICAL EXPOSURE 2-3, available at <http://www.atsdr.cdc.gov/emes/public/docs/Health%20Effects%20of%20Chemical%20Exposure%20FS.pdf> (last visited May 15, 2013) [hereinafter HEALTH EFFECTS OF CHEMICAL EXPOSURE].

8. John Kvinge, Note, *Morally Hazardous Chemical Regulations: Why Effective Reform of the TSCA Requires Reduction of the Toxic Data Gap*, 12 MINN. J.L. SCI. & TECH. 313, 319 (2011).

9. G. Heuser, P. Axelrod & S. Heuser, *A Diagnostic Protocol and Profile of Chemically Injured Civilians, Industrial Workers and Gulf War Veterans*, 13 INT'L PERSP. IN PUB. HEALTH J. 1 (2000), available at http://icph.org/ipph_Defining_Chemical_Injury.

10. More than 83,000 chemicals are currently registered for use in the United States. *TSCA Inventory*, DATA.GOV, <http://explore.data.gov/Geography-and-Environment/TSCA-Inventory/pkhi-wvjh> (last visited May 15, 2013).

11. KIRKPATRICK SALE, *THE GREEN REVOLUTION: THE AMERICAN ENVIRONMENTAL MOVEMENT, 1962-1992* 3-4, 7, 18, 25, 36 (1993).

12. Kvinge, *supra* note 8, at 313; SAFER CHEMS., HEALTHY FAMILIES, CHEMICALS AND OUR HEALTH: WHY RECENT SCIENCE IS A CALL TO ACTION 3 (2012), available at <http://healthreport.saferchemicals.org/>.

13. For a list of all twenty-three statutes, see *Summaries of Environmental Laws and EOs*, U.S. ENVTL. PROT. AGENCY, <http://www2.epa.gov/laws-regulations/laws-and-executive-orders> (last updated April 22, 2013) [hereinafter *Summaries of Environmental Laws and EOs*]. Those that regulate toxics are as follows: the Chemical Safety Information, Site Security and Fuels Regulatory Relief Act, the Clean Air Act (CAA), the Clean Water Act (CWA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Emergency Planning and Community Right-to-Know Act (EPCRA), the Federal Food, Drug, and Cosmetic Act (FFDCA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Nuclear Waste Policy Act (NWPA), the Occupational Safety and Health Act (OSHA), the Oil Pollution Act (OPA), the Pollution Prevention Act (PPA), the Resource Conservation and Recovery Act (RCRA), the Safe Drinking Water Act (SDWA), and the Toxic Substances Control Act (TSCA). *Id.*

14. See *Summary of the Toxic Substances Control Act*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/lawsregs/laws/tsca.html> (last updated Aug. 23, 2012); J. CLARENCE DAVIES & JAN MAZUREK, *POLLUTION CONTROL IN THE UNITED STATES: EVALUATING THE SYSTEM* 12 (1998).

15. Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 21, 24-25 (2001); DAVIES & MAZUREK, *supra* note 14, at 11-12.

substances from pervading the environment by implementing such mechanisms as emissions standards¹⁷ and effluent limitations,¹⁸ which dictate acceptable pollutant levels and, at times, the methods to achieve them.¹⁹ Thus, the EPA sets strict pollutant standards, with noncompliant individuals and industries subject to punishment.²⁰ This method of regulation, referred to as “command and control,” has been widely cited as flawed and is criticized for its inefficacy, cost, inconsistency, and oppression of industrial innovation.²¹ At this point in the national discourse, many academics and politicians alike agree it is time for change.²²

However, in criticizing command and control regulation, there is a tendency to focus on the inefficacies of the current regulatory scheme without truly differentiating the administrative rules from their legislative base.²³ Interconnection is a founding principle of environmental study;²⁴ environmental media interface and interact with each other in everyday life despite their legal separation by the nation’s environmental statutes regulating air,

16. See, e.g., 15 U.S.C. § 2605 (Supp. 2010) (providing criteria by which the Administrator of the EPA is to promulgate rules to regulate hazardous substances); DAVIES & MAZUREK, *supra* note 14, at 2.

17. WILLIAM H. RODGERS, JR., *Origins of the Clean Air Act—Results*, in RODGERS’ ENVIRONMENTAL LAW § 3:1(A)(5) (2012) [hereinafter *Origins of the Clean Air Act*]; WILLIAM H. RODGERS, JR., *Summary of the 1990 Clean Air Act Amendments: Hazardous Air Pollutants*, in RODGERS’ ENVIRONMENTAL LAW, *supra*, § 3:1E(A) [hereinafter *Summary of the 1990 Clean Air Act Amendments*].

18. 33 U.S.C. §§ 1312(a), 1313(a)–(b) (Supp. 2010).

19. Timothy F. Malloy, *The Social Construction of Regulation: Lessons from the War Against Command and Control*, 58 BUFF. L. REV. 267, 269, 313–20 (2010); *Summary of the 1990 Clean Air Act Amendments*, *supra* note 17, § 3:1E(B); *The Clean Water Act*, in 5 WEST’S FEDERAL ADMINISTRATIVE PRACTICE § 5263 (4th ed. 2012).

20. See Dawn Anderson, *Regulatory Policy vs Economic Incentives*, ENVTL. LITERARY COUNCIL, <http://www.enviroliteracy.org/article.php/1329.php> (last updated July 29, 2008); DAVIES & MAZUREK, *supra* note 14, at 15.

21. See Stewart, *supra* note 15, at 21, 22 n.1; Malloy, *supra* note 19, at 281.

22. Stewart, *supra* note 15, at 22 n.1; Malloy, *supra* note 19, at 281; Jeremy P. Jacobs, *For Sen. Lautenberg, Crusade to Reform Chemical Regulations Is Personal*, N.Y. TIMES (June 27, 2011), <http://www.nytimes.com/gwire/2011/06/27/27greenwire-for-sen-lautenberg-crusade-to-reform-chemical-99680.html?pagewanted=all>; see Exec. Order No. 13563, 76 Fed. Reg. 3,821 (Jan. 18, 2011). *Contra infra* note 105 (highlighting proponents of command and control regulation).

23. See Stewart, *supra* note 15, at 21 (stating that command and control regulation itself, “is patchwork in character, focusing in an uncoordinated fashion on different environmental problems in different environmental media and often ignoring functional and ecosystem interdependencies”). *Contra* SALE, *supra* note 11, at 37 (“Congress’ response [in enacting environmental legislation during the 1970s and 1980s] was inevitably patchwork reformist at best . . .”); DAVIES & MAZUREK, *supra* note 14, at 28.

24. Zygmunt J.B. Plater, *In the Wake of the Snail Darter: An Environmental Law Paradigm and Its Consequences*, 19 U. MICH. J.L. REFORM 805, 805 (1986).

water, and land.²⁵ As environmental legislation and its subsequent regulations are fragmented and inconsistent on a medium-by-medium basis,²⁶ they are not inefficient and ineffective because they are command and control in nature, but rather because they fail to take into account the interconnected nature of the environment. This Comment explores this theory by following the regulation of asbestos in five well-known environmental statutes—the Clean Air Act (CAA),²⁷ the Clean Water Act (CWA),²⁸ the Toxic Substances Control Act (TSCA),²⁹ the Resource Conservation and Recovery Act (RCRA),³⁰ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)³¹—ultimately concluding that the use of multiple regulatory schemes for the same substance in different media is inefficient.³² The public, industry, and the government would be better served by a more centralized and streamlined system of regulation for both asbestos and toxics in general.

Part I discusses the history of, as well as the current need for, toxics regulation in the United States. Part II discusses the nation's current environmental regulatory structure, its limitations, and proposals for reform. Part III provides background on asbestos, outlining its properties, usage, and human health effects. Part IV follows asbestos regulations under the CAA, the CWA, TSCA, RCRA, and CERCLA. Part V analyzes these regulations, highlighting discrepancies and inconsistencies. Lastly, Part VI provides a suggestion for reform, advocating for an interconnected legislative framework.

I. TOXICS REGULATION IN THE UNITED STATES: PAST, PRESENT, AND FUTURE

The United States government has not always had reason to regulate toxics; in fact, many of the substances now considered to be toxics have only been in mainstream use since the 1950s.³³ It was only after the manifestation of adverse effects and subsequent public pressure that Congress

25. Stewart, *supra* note 15, at 29. (discussing the CAA, the CWA, and the RCRA); *see infra* Sections IV.A, IV.B, IV.D (discussing the CAA, the CWA, and RCRA).

26. Stewart, *supra* note 15, at 29; DAVIES & MAZUREK, *supra* note 14, at 11.

27. 42 U.S.C. §§ 7401–7671 (2006).

28. 33 U.S.C. §§ 1251–1387 (2006).

29. 15 U.S.C. §§ 2601–97 (2006).

30. 42 U.S.C. §§ 6901–92.

31. *Id.* §§ 9601–75.

32. *See infra* Section V (discussing the fragmentation and inefficacies of asbestos regulation).

33. *See Trade Secrets: The Problem*, PBS, <http://www.pbs.org/tradesecrets/problem/problem.html> (last visited May 15, 2013).

stepped in to regulate.³⁴ This Part examines the history of toxics regulation in the United States and its prominent role in the nation's environmental movement. It also establishes the current need for and summarizes the recent attempts to create a toxics and pollutant regulatory scheme that is more efficient and protective of human health.

A. The United States Environmental Movement

The environmental movement in the United States has been and still is a multi-faceted affair³⁵—understandably so, as the country faces a variety of environmental problems.³⁶ Thus, while the environmental movement, in its totality, has spanned from the late 1800s to the present day, it has centered on certain issues at certain times.³⁷ In 1962, Rachel Carson released a book entitled *Silent Spring*, now credited with “sparking” what is known as the “modern” environmental movement.³⁸ Her work raised awareness of the dangers of toxic substances with a public who, up until that time, had environmental concerns mainly in the realm of natural resource protection.³⁹ It was this public fear of toxics that would drive the formation of the nation's environmental legislation and regulatory structure.⁴⁰

B. The Driving Force of Toxics

After World War II, it became clear that chemical use would play a prominent role in American industry and society.⁴¹ At first, Americans were in awe of the resultant commodities and technological advances—synthetic materials, such as plastics, were durable and convenient, and it was almost

34. SALE, *supra* note 11, at 3-4, 18-19, 25, 28, 30-31, 36.

35. *Id.* at 6-7; FRANK T. MANHEIM, THE CONFLICT OVER ENVIRONMENTAL REGULATION IN THE UNITED STATES: ORIGINS, OUTCOMES, AND COMPARISONS WITH THE EU AND OTHER REGIONS 14-15, 18 (2009).

36. See *supra* notes 1-5 and accompanying text, for a non-exhaustive list of current environmental problems.

37. SALE, *supra* note 11, at 8-9, 18-19, Timeline. Today, the United States environmental movement can be divided into three periods targeting three main issues: an “original” environmental movement focusing on the protection of natural resources and wilderness areas, a “modern” environmental movement focusing on preventing pollution and limiting public exposure to toxics, and a “present day” environmental movement focusing on remedying global climate change and transitioning to renewable energy sources. *Id.* at 14-15, 18, 28; PHILIP SHABECOFF, A FIERCE GREEN FIRE: THE AMERICAN ENVIRONMENTAL MOVEMENT 248 (2d ed. 2003).

38. SALE, *supra* note 11, at 3-4, 7; Zygmunt J.B. Plater, *From the Beginning, a Fundamental Shift of Paradigms: A Theory and Short History of Environmental Law*, 27 LOY. L.A. L. REV. 981, 999 (1994).

39. SALE, *supra* note 11, at 14-15, 18.

40. *Id.* at 8-9, 25, 36.

41. *Id.* at 6-7.

miraculous how “wonder chemicals” could eradicate pests.⁴² It was not until the publication of Rachel Carson’s 1962 novel, *Silent Spring*, that Americans realized the potential health effects of widespread chemical usage.⁴³ Carson, utilizing the pesticide DDT as an example, illustrated Earth’s interconnectivity and highlighted the potential adverse effects of chemicals on human life.⁴⁴ The public began to pressure its elected officials into action.⁴⁵

Prior to the release of *Silent Spring*, Congress had already begun passing environmental statutes, beginning with the CWA in 1960.⁴⁶ In its wake, Congress passed the CAA in 1963 and the Solid Waste Act in 1965.⁴⁷ However, the public’s demand for protective legislation had yet to be satisfied, as the fear of toxics grew with every incidence of environmental disaster in the late 1960s and 1970s.⁴⁸ For example, in 1969, Ohio’s Cuyahoga River caught fire due to the water’s high chemical content.⁴⁹ Also, in the late 1970s, the federal government relocated families on entire blocks of a New York town when improper chemical disposal resulted in the migration of toxic chemicals underneath and inside homes, causing cancers and various birth defects in residents.⁵⁰ Accordingly, the number and membership of environmental organizations increased exponentially, and concern for the environment was greater than it had ever been before.⁵¹ This public outcry was not lost on Congress, which responded with the passage of eighteen environmental acts between 1970 and 1980—one of which created the EPA

42. *Id.* at 6-7, 18; Plater, *supra* note 38, at 999.

43. SALE, *supra* note 11, at 3-4; Plater, *supra* note 38, at 999.

44. Plater, *supra* note 38, at 999; SALE, *supra* note 11, at 4.

45. SALE, *supra* note 11, at 12-13, 18, 25, 37-38.

46. *Id.* at 25.

47. *Id.* The Solid Waste Act is the precursor statute to the modern-day RCRA. WILLIAM H. RODGERS, JR., *Solid Waste Disposal Act (Resource Conservation and Recovery Act)—Origins; Summary*, in RODGERS’ ENVIRONMENTAL LAW, *supra* note 17, § 7:2(B)(1)–(2).

48. SALE, *supra* note 11, at 18-19, 25, 28, 30-31, 36; Stewart, *supra* note 15, at 163-64. In addition to the Cuyahoga River Fire and Love Canal Tragedy, see *infra* notes 49-50 and accompanying text, those decades also saw an oil spill in Santa Barbara, California and a nuclear mishap at Three Mile Island in Pennsylvania. *Backgrounder on the Three Mile Island Accident*, U.S. NUCLEAR REGULATORY COMM’N, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html> (last updated Mar. 15, 2011).

49. SALE, *supra* note 11, at 19; Peter Dykstra, *History of Environmental Movement Full of Twists, Turns*, CNN (Dec. 10, 2008), http://articles.cnn.com/2008-12-10/tech/history.environmental.movement_1_fierce-green-fire-american-environmental-movement-philip-shabecoff?_s=PM:TECH; Stewart, *supra* note 15, at 164.

50. SALE, *supra* note 11, at 31; Eckardt C. Beck, *The Love Canal Tragedy*, ENVTL. PROTECTION AGENCY J., Jan. 1979, at 17, 17-18; Stewart, *supra* note 15, at 164.

51. SALE, *supra* note 11, at 31-35.

to administer them.⁵² Many of these statutes have since regulated the use of toxics⁵³ as well as their release into the environment.⁵⁴

C. A Present Need for Reform

Today, over forty years after the passage of the majority of the nation's protective environmental legislation,⁵⁵ the need for toxics regulation has not decreased. Years of data have uncovered just how unprotected Americans truly are.⁵⁶ General chemical regulation under TSCA has essentially been a failure.⁵⁷ There are currently over 83,000 chemicals registered for use in the United States,⁵⁸ and until a recent call to industry for the voluntary disclosure of their effects, the EPA "had a full set of health and safety data for less than seven percent" of them.⁵⁹ With such a large number of chemicals potentially in use,⁶⁰ the EPA has only been able to regulate nine under TSCA.⁶¹

The regulation of toxics as pollutants has had greater success, although risks still exist. The current set of statutes and regulations, through the imposition of strict emission limitations,⁶² has undoubtedly been effective in combating large-scale pollution.⁶³ The current hazard is now found in the residual amount of pollutants still emitted.⁶⁴ The costs and benefits of decreasing or eliminating residual pollutants are often considered at the agency level,⁶⁵ but critics of command and control claim that the current regulations, in which economic costs often outweigh health benefits, are

52. *Id.* at 26, 36.

53. *See Summary of the Toxic Substances Control Act*, *supra* note 14; DAVIES & MAZUREK, *supra* note 14, at 12.

54. Stewart, *supra* note 15, at 21, 24-25, 163-64; DAVIES & MAZUREK, *supra* note 14, at 11-12. *See supra* note 13, for a list of EPA-administered statutes protecting against toxics exposure.

55. SALE, *supra* note 11, at 36.

56. Kvinge, *supra* note 8, at 313; SAFER CHEMS., HEALTHY FAMILIES, *supra* note 12.

57. *See infra* notes 58-61, 71-76, and accompanying text.

58. *TSCA Inventory*, *supra* note 10.

59. Kvinge, *supra* note 8, at 313.

60. *But see id.* at 318 ("Many of these chemicals are no longer in production, and have been replaced by (hopefully) safer and more effective alternatives.")

61. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 2, at 6, 58-61; Kvinge, *supra* note 8, at 316 n.15.

62. *See Anderson*, *supra* note 20; DAVIES & MAZUREK, *supra* note 14, at 15; Malloy, *supra* note 19, at 283-84.

63. Stewart, *supra* note 15, at 28.

64. *Id.*

65. The EPA is oftentimes statutorily required to consider cost before regulating. *See DAVIES & MAZUREK*, *supra* note 14, at 19 (discussing the requisite consideration of cost for regulations promulgated under the CWA and TSCA).

inadequate to economically and efficiently decrease residual pollutant releases.⁶⁶

Yet another gauge of the success of toxics regulation is national human health. While much remains unknown regarding the health effects of specific chemicals,⁶⁷ and even less is known about their effects synergistically,⁶⁸ a wide variety of health effects are commonly attributed to chemical exposure.⁶⁹ Statistics show that these health effects, such as cancer, asthma, and infertility, are on the rise, which supports the conclusion that current legislative protections are inadequate.⁷⁰

To date, regulatory reform in the toxics arena has mainly focused on TSCA,⁷¹ the provisions of which only require the testing of chemicals new to the market and, even then, only to the extent practicable by industry.⁷² Thus, what has resulted in the thirty-six years since TSCA's enactment is very little information on registered chemicals and the regulation of merely nine.⁷³ The past two congressional terms have seen bills to amend TSCA;⁷⁴ the main changes proposed include requiring the submission of minimum safety information for every chemical in use and placing that burden on industry.⁷⁵ However, while these changes would certainly be beneficial, efforts singly focused toward TSCA reform may be misplaced. Although

66. Stewart, *supra* note 15, at 28-34; Malloy, *supra* note 19, at 283-84.

67. Kvinge, *supra* note 8, at 313.

68. Tom Estabrook & Joel Tickner, *Facing Our Toxic Ignorance*, MASS. PRECAUTIONARY PRINCIPLE PROJECT, <http://sustainableproduction.org/precaution/back.brie.faci.html> (last visited May 15, 2013).

69. See HEALTH EFFECTS OF CHEMICAL EXPOSURE, *supra* note 7, at 2-3; SAFER CHEMS., HEALTHY FAMILIES, *supra* note 12, at 3.

70. SAFER CHEMS., HEALTHY FAMILIES, *supra* note 12, at 3.

71. While over the past couple of decades the EPA has engaged in regulatory reform efforts in response to command and control criticism, TSCA has recently been singled out as the target for reform. Rena I. Steinzor, *Reinventing Environmental Regulation: The Dangerous Journey from Command to Self-Control*, 22 HARV. ENVTL. L. REV. 103, 106-12 (1998) (discussing "EPA [r]einvention [i]nitiatives"); Daniel E. Uyesato, *Key Issues in Reform of the Toxic Substances Control Act of 1976*, TRENDS, (A.B.A., Chi., Ill.), Mar.-Apr. 2010, at 12, 12-13 (discussing TSCA reform initiatives).

72. *Shaping Chemical Policy Reform: Public Health Advocates vs. the Chemical Industry*, SAFER CHEMS., HEALTHY FAMILIES, <http://www.saferchemicals.org/resources/keydifferences.html> (last visited May 15, 2013); Kvinge, *supra* note 8, at 316-17.

73. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 2, at 6, 58-61; Kvinge, *supra* note 8, at 313, 316 n.15.

74. Richard A. Dension, *Summary of Changes in Safe Chemicals Act of 2011 v. 2010*, SAFER CHEMS., HEALTHY FAMILIES & ENVTL. DEF. FUND, www.saferchemicals.org/PDF/Summary-of-key-changes-in-Safe-Chemicals-Act-of-2011-vs-2010-revised.pdf (last updated May 9, 2011).

75. *Bill Summary & Status, 112th Congress (2011-2012), S.847, All Information*, LIBRARY OF CONG., <http://thomas.loc.gov/cgi-bin/bdquery/z?d112:SN00847:@@L&summ2=m&> (last visited May 15, 2013).

TSCA's shortcomings are well-established,⁷⁶ there are also other environmental statutes that regulate toxics in the environment.⁷⁷

II. THE COMMAND AND CONTROL REGULATORY SCHEME

Command and control regulations are those that "impose detailed, legally enforceable limits, conditions, and affirmative requirements on industrial operations."⁷⁸ United States environmental regulations are largely command and control in nature,⁷⁹ as the EPA, through statutory provision,⁸⁰ promulgates various rules to prevent or limit pollution and other environmental harms.⁸¹ This regulatory structure has essentially remained unchanged since Congress passed the majority of the nation's environmental legislation,⁸² and there has been much scholarship regarding the system's inefficacies.⁸³ This Part provides an overview of the current command and control regulatory scheme of the nation's environmental laws. It then highlights common criticisms of this command and control regulation, followed by some approaches that have been proposed for system reform.

A. The Basis and Premise of Command and Control in Pollution Regulation

In the United States, environmental command and control regulations are based on one of two standards: design standards or performance standards.⁸⁴ Each utilizes a different mechanism to limit the release of pollutants. Design standards establish and make mandatory the industrial adoption of specific pollution reduction equipment.⁸⁵ Performance standards, rather than require specific technology, set a maximum amount of allowable pollution, leaving it up to industry to implement its preferred method of achieve-

76. See U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 2; Uyesato, *supra* note 71; David E. Adelman, *A Cautiously Pessimistic Appraisal of Trends in Toxics Regulation*, 32 WASH. U. J.L. & POL'Y 377, 377, 383-84 (2010).

77. Adelman, *supra* note 76, at 384-85; U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 2, at 6.

78. Steinzor, *supra* note 71, at 104.

79. There are some environmental regulations that stray outside the command and control regulatory scheme. See Stewart, *supra* note 15, at 103-04 (discussing the implementation of a credit trading program under the CAA to reduce emissions of sulfur dioxide).

80. See *supra* note 16.

81. See Anderson, *supra* note 20; DAVIES & MAZUREK, *supra* note 14, at 15.

82. Between 1984 and 1990, Congress even reaffirmed its commitment to this initial legislation by passing reauthorizations for four statutes: the CWA, CERCLA, the CAA and the Safe Drinking Water Act. Steinzor, *supra* note 71, at 107 & n.10.

83. See Stewart, *supra* note 15, at 22-23 & n.1; Malloy, *supra* note 19, at 268-69, 281-82.

84. Malloy, *supra* note 19, at 283-84.

85. *Id.* at 284.

ment.⁸⁶ The amount of allowable pollution is determined either by human health standards or, in the absence of such information,⁸⁷ technology standards—the residual amount of pollution remaining even after the implementation of a specific technology.⁸⁸ As very little is known about the human health effects of pollutants or the requisite ambient amounts that would even trigger a decline in the nation's health,⁸⁹ most performance standards are technology standards.⁹⁰ Thus, most environmental regulations will essentially require industry to adopt particular pollution control technologies, either directly or indirectly.⁹¹

It is undoubted that Congress intended such strict regulation and at one time believed it necessary to effectuate improvement in the nation's environmental quality.⁹² This is evidenced not only by the initial passage of the nation's environmental legislation in the 1960s and 1970s,⁹³ but also the subsequent reauthorization of these same acts years later with additional command and control provisions.⁹⁴ At that time, the fear was that despite having the statutory authority, the EPA was not regulating quickly enough.⁹⁵ The question now asked is whether such strict regulation continues to make economic and regulatory sense given that the challenge has, for the most part, shifted from large-scale to residual pollutant releases.⁹⁶

B. The Inefficacy Narrative

Criticism of command and control regulation is common,⁹⁷ so much so, that its alleged inefficacy has become a narrative throughout scholarly legal literature on the topic.⁹⁸ In a recent survey of 135 law review articles and books with substantial comment on command and control regulation,

86. *Id.*

87. See Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms*, 37 STAN. L. REV. 1267, 1282, 1303 (1985).

88. Malloy, *supra* note 19, at 284.

89. See *supra* notes 67-70 and accompanying text.

90. Latin, *supra* note 87, at 1282, 1303; Steinzor, *supra* note 71, at 113-14.

91. See Steinzor, *supra* note 71, at 113-14; Malloy, *supra* note 19, at 269, 284 (discussing the possibility that industry is not nearly as innovative as it has been portrayed to be in scholarly writing, and thus, industries may be more likely to simply adopt commonly utilized technology rather than create their own to meet compliance standards).

92. Steinzor, *supra* note 71, at 107 & n.10 (stating that the impetus behind the statutory reauthorizations was Congress' frustration with "EPA inaction").

93. See *supra* Section I.B.

94. See *supra* note 82.

95. Steinzor, *supra* note 71, at 107.

96. See *supra* notes 62-66 and accompanying text.

97. See Stewart, *supra* note 15, at 22-23 & n.1; Malloy, *supra* note 19, at 268-69, 281-82.

98. Malloy, *supra* note 19, at 268-69, 281-82, 294-95.

Professor Timothy F. Malloy found this to be the case.⁹⁹ Professor Malloy grouped the criticisms into three main categories: rigidity, homogeneity, and competency.¹⁰⁰ The rigidity claim criticizes command and control regulation for mandating industrial adoption of technology for pollution reduction.¹⁰¹ The homogeneity claim criticizes command and control regulation for holding industrial firms of varying sizes and resources to the same, often costly, regulations.¹⁰² The competency claim criticizes command and control regulation for placing regulatory responsibility in the hands of the government, as opposed to the industrial sector.¹⁰³

Examining these criticisms within the framework of CAA regulations, Professor Malloy ultimately finds them to be untrue, sensationalized, and self-serving.¹⁰⁴ While other scholars agree that criticisms of command and control regulation are overblown,¹⁰⁵ many more do not,¹⁰⁶ evidenced by the sheer number of articles in Professor Malloy's study.¹⁰⁷ Many believe that, despite a lack of knowledge regarding toxics,¹⁰⁸ industry should have the flexibility to innovate methods to achieve ambient, health-based performance standards.¹⁰⁹ They find achievement of this goal to be impossible within the current "fragmented" system of environmental statutes and regulations.¹¹⁰ Furthermore, now that residual pollution, as opposed to large-scale pollution, is the main issue, navigating through the current regulatory framework at a high administrative cost may no longer outweigh the detriment of such pollution to human health or the environment.¹¹¹ While critiques of the current framework may more be criticisms of inconsistency at the statutory level than command and control regulation per se, the distinc-

99. *Id.*

100. *Id.* at 268-69, 283-88.

101. *Id.* at 269, 284.

102. *Id.* at 269, 285.

103. *Id.*

104. *Id.* at 313-43 (finding that, in reality, most CAA regulations do not require the application of specific technology, the EPA does consider variations in industry for rulemaking, and claims of government incompetence lack evidence).

105. See generally Latin, *supra* note 87 (discussing that critics fail to prove alternatives are more efficient than command and control regulation); Robert V. Percival, *Regulatory Evolution and the Future of Environmental Policy*, 1997 U. CHI. LEGAL F. 159, 160 (claiming that "the current regulatory infrastructure is neither as irrational nor as inefficient as its critics have claimed").

106. See Stewart, *supra* note 15, at 22-23 & n.1; Malloy, *supra* note 19, at 268-69, 281-82.

107. Malloy, *supra* note 19, at 295.

108. See *supra* notes 58-61, 67-70 and accompanying text (discussing unknowns regarding chemical safety and health effects); Latin, *supra* note 87, at 1281-82, 1310, 1326-27.

109. Latin, *supra* note 87, at 1269-70, 1281-84; Steinzor, *supra* note 71, at 104.

110. Stewart, *supra* note 15, at 28-29; DAVIES & MAZUREK, *supra* note 14, at 16-18.

111. Stewart, *supra* note 15, at 28.

tion between the two is often overlooked in the literature as well as in proposals for reform.¹¹²

C. Proposals for Reform

Suggested methods to reform command and control regulation are numerous¹¹³ and include implementing economic incentive programs such as cap and trade;¹¹⁴ tailoring existing regulations to combat known risks and health effects;¹¹⁵ and establishing a more integrative, “ecosystem-based” methodology.¹¹⁶ Likely in response to pressures from the scholarly paradigm,¹¹⁷ the federal government already implements what are considered to be “small-scale” reforms in environmental regulation.¹¹⁸ For example, the EPA routinely negotiates with regulated firms for standards of adherence which differ from the promulgated rules.¹¹⁹ While such agreements may seem to endorse non-adherence, they often actually lend themselves to progress in addressing environmental issues, facilitating a cooperative relationship between the EPA and the regulated entity.¹²⁰ Other methods of reform are less commonly utilized.¹²¹ For example, despite the success of the EPA’s cap and trade program for sulfur dioxide and the EPA’s credit-based system to ban leaded gasoline, economic incentives have not caught on at the federal level to regulate other pollutants.¹²²

However, current reforms, and many of those proposed,¹²³ are essentially band-aids;¹²⁴ the underlying problem still remains the media-specific legislative base.¹²⁵ While reforms within the existing system can be appreciated for their ability to make it more workable, the system’s inherent defi-

112. See *supra* note 23. *Contra* Stewart, *supra* note 15, at 151-54 (discussing a proposal for reform that recognizes statutory inconsistency).

113. For an extensive discussion of many reform ideas, see Stewart, *supra* note 15, at 38-157.

114. Stewart, *supra* note 15, at 94-112.

115. See Latin, *supra* note 87, at 1269-70.

116. Stewart, *supra* note 15, at 156.

117. See Malloy, *supra* note 19, at 267-69.

118. See Stewart, *supra* note 15, at 38-39.

119. *Id.* at 60-94.

120. *Id.* (discussing various initiatives currently in place, some of which are very successful—i.e. the Brownfields program for site redevelopment, which imposes less stringent liability and remediation standards than required under CERCLA).

121. *Id.* at 111-12 (discussing only two truly successful federal cap and trade programs for reducing pollutant emissions).

122. *Id.* at 104-13.

123. See *infra* Part VI (discussing a proposal for reform that recognizes statutory inconsistency).

124. Stewart, *supra* note 15, at 29, 151-52.

125. See DAVIES & MAZUREK, *supra* note 14, at 11-12, 16-17, 28, 33; Stewart, *supra* note 15, at 151-54 (discussing a proposal for reform that recognizes statutory inconsistency).

ciencies cannot be corrected without addressing the fragmented and inconsistent nature of United States environmental law.¹²⁶ Even reforms that recognize this deficiency and propose a more holistic management approach may not suggest legislative change.¹²⁷ The system is in need of an overhaul: one that sets consistent environmental priorities and recognizes the interconnected nature of environmental media.¹²⁸ Examining environmental regulations for just one toxin, asbestos, proves this necessity.

III. ALL ABOUT ASBESTOS

“Asbestos” refers not to one substance, but rather a group of six minerals.¹²⁹ Thus, asbestos is not a toxin of industrial invention, but is found naturally on Earth and harvested from the environment.¹³⁰ Due to its natural occurrence, the presence of asbestos in air, water, and soil will never truly be eradicated¹³¹ regardless of any attempt at regulation¹³² or prohibition.¹³³ However, it is not the natural, background levels of asbestos that are a human health concern—rather, it is its industrial use that has propelled asbestos into the lungs of many Americans.¹³⁴ This Part aims to provide a background on asbestos describing its properties, role, and history in United States industry, and its effects on human health.

126. Stewart, *supra* note 15, at 151-53; DAVIES & MAZUREK, *supra* note 14, at 16-18.

127. See Stewart, *supra* note 15, at 157, 164 (envisioning a holistic approach that “would use a variety of instruments” and “lay the basis for second generation initiatives—the adoption of new and better regulatory instruments to achieve environmental objectives established within the basic structure of environmental law and politics that currently exists”); see *infra* note 331 and accompanying text.

128. See DAVIES & MAZUREK, *supra* note 14, at 16-17, 33 (discussing the statutory fragmentation inherent in United States environmental law).

129. U.S. DEP’T OF HEALTH & HUMAN SERVS. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR ASBESTOS 1 (2001), available at <http://www.atsdr.cdc.gov/toxprofiles/tp61.pdf> [hereinafter ASBESTOS PROFILE]; Roberta C. Barbalace, *Asbestos, Its Chemical and Physical Properties*, ENVIRONMENTALCHEMISTRY.COM (Oct. 2004), <http://environmentalchemistry.com/yogi/environmental/asbestosproperties2004.html>.

130. ASBESTOS PROFILE, *supra* note 129, at 135; Barbalace, *supra* note 129; *The Asbestos Informer*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/region4/air/asbestos/inform.htm> (last updated Feb. 9, 2011) [hereinafter *The Asbestos Informer*].

131. Barbalace, *supra* note 129.

132. See *infra* Part IV (discussing asbestos regulations under the CAA, the CWA, TSCA, RCRA, and CERCLA).

133. See *infra* Section IV.C (discussing the EPA’s attempted asbestos ban).

134. Barbalace, *supra* note 129; *The Asbestos Informer*, *supra* note 130. The National Cancer Institute estimates that “millions of American workers have been exposed to asbestos.” *Asbestos Exposure and Cancer Risk*, NAT’L CANCER INSTS. AT THE NAT’L INST. OF HEALTH (May 1, 2009), <http://www.cancer.gov/cancertopics/factsheet/Risk/asbestos> [hereinafter *Asbestos Exposure and Cancer Risk*].

A. The Chemical and Physical Properties of Asbestos

Asbestos occurs in six mineral forms,¹³⁵ which can be further grouped into two classes¹³⁶ distinguished by molecular structure.¹³⁷ All forms of asbestos are considered to be fibrous, with fibers so long they can appear as threads or hairs to the naked eye.¹³⁸ Physically, asbestos is extremely strong, with tensile strength greater than steel.¹³⁹ It does not conduct electricity and is nonflammable, odorless, and tasteless.¹⁴⁰ Chemically, asbestos is considered “inert,” because it is essentially non-reactive.¹⁴¹ Asbestos does not dissolve in water or organic solvents, and some forms are resistant to acids and bases.¹⁴² These chemical and physical properties are what make asbestos so desirable for industrial use.¹⁴³

But, although asbestos fibers are strong,¹⁴⁴ the chemical bonds that hold them together are weak.¹⁴⁵ Asbestos fibers easily break into smaller pieces of varying size,¹⁴⁶ only some of which the government regulates.¹⁴⁷ Thus, the danger with asbestos is found not in its ability to break down into smaller chemical components or to react in environmental media, but rather in the fact that it readily breaks into smaller pieces, which then persist in the environment.¹⁴⁸ Asbestos does not migrate through soil, but, depending on fiber size, can often long remain suspended in air and water.¹⁴⁹

135. The six types of asbestos are chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. ASBESTOS PROFILE, *supra* note 129, at 135.

136. The two classes of asbestos are serpentine and amphibole. *Id.* at 135. Chrysotile is the only member of the serpentine class; amosite, crocidolite, tremolite, anthophyllite, and actinolite comprise the amphibole class. *Id.*; Barbalace, *supra* note 129.

137. The two classes of asbestos, serpentine and amphibole, have “linear double chain” and “extended sheet” structures respectively. ASBESTOS PROFILE, *supra* note 129, at 135.

138. See Barbalace, *supra* note 129; Roberta C. Barbalace, *A Brief History of Asbestos Use and Associated Health Risks*, ENVIRONMENTALCHEMISTRY.COM (Oct. 2004), <http://environmentalchemistry.com/yogi/environmental/asbestoshistory2004.html>.

139. Barbalace, *supra* note 129.

140. *Id.*; ASBESTOS PROFILE, *supra* note 129, at 139.

141. ASBESTOS PROFILE, *supra* note 129, at 139; Barbalace, *supra* note 129.

142. ASBESTOS PROFILE, *supra* note 129, at 139; Barbalace, *supra* note 129.

143. Barbalace, *supra* note 138; *The Asbestos Informer*, *supra* note 130.

144. Barbalace, *supra* note 129.

145. ASBESTOS PROFILE, *supra* note 129, at 135.

146. *The Asbestos Informer*, *supra* note 130.

147. Barbalace, *supra* note 129; ASBESTOS PROFILE, *supra* note 129, at 138.

148. Barbalace, *supra* note 129.

149. ASBESTOS PROFILE, *supra* note 129, at 149; *The Asbestos Informer*, *supra* note 130.

B. Asbestos in Industry

Asbestos has been utilized in the United States for over one hundred years.¹⁵⁰ First implemented in the early 1900s as steam engine insulation, by the end of World War II, asbestos use had increased to a point where the majority of schools and other public buildings were constructed almost entirely of asbestos-containing materials.¹⁵¹ Asbestos was considered a “miraculous, do anything chemical substance,”¹⁵² and in the United States, asbestos has had over 3,000 recorded uses.¹⁵³ Its strength and inflammability, especially, made it an obvious choice for building and industrial materials, insulation, and soundproofing—some of its most common uses.¹⁵⁴

Today, in response to health concerns, asbestos mining and subsequent industrial use has declined exponentially.¹⁵⁵ In 1999, domestic asbestos mining operations were down approximately 96% from their peak, and between 1980 and 1999, domestic asbestos consumption decreased approximately 96% as well.¹⁵⁶ As of 2001, sixty-five facilities subject to reporting requirements for the Toxic Release Inventory¹⁵⁷ reported the production, processing, and/or use of friable asbestos.¹⁵⁸ These facilities were located in twenty-seven states.¹⁵⁹ According to the Agency for Toxic Substances and Disease Registry, “[r]oofing products, gaskets, and friction products will continue to be the only significant domestic markets for asbestos in the foreseeable future.”¹⁶⁰

However, while these statistics are promising, Americans are still at risk from asbestos exposure.¹⁶¹ Although safety provisions have improved, individuals who work in industries where asbestos is currently utilized need not worry only for themselves, but also for their family members who could

150. *The Asbestos Informer*, *supra* note 130.

151. *Id.*

152. Barbalace, *supra* note 138.

153. *Id.*

154. *Id.*; *The Asbestos Informer*, *supra* note 130.

155. Barbalace, *supra* note 138; *The Asbestos Informer*, *supra* note 130.

156. See ASBESTOS PROFILE, *supra* note 129, at 163, 166.

157. The Toxics Release Inventory (TRI) “is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.” *Toxics Release Inventory*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/tri/> (last updated Sept. 12, 2012). Creation of the TRI is mandated by Section 313 of the Emergency Planning and Community Right-to-Know Act. *What Is the Toxics Release Inventory Program?*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/tri/triprogram/whatis.htm> (last updated June 5, 2012).

158. ASBESTOS PROFILE, *supra* note 129, at 144-45.

159. *Id.* at 145.

160. *Id.* at 146.

161. *Asbestos Exposure and Cancer Risk*, *supra* note 134.

be exposed to asbestos remnants brought home on clothing after the work day.¹⁶² Additionally, demolition and construction workers will likely continue to encounter asbestos, as it was so pervasively utilized as a building material during the second half of the twentieth century.¹⁶³

C. The Health Consequences of Asbestos Exposure

Although asbestos exposure does not cause a wide variety of known health effects,¹⁶⁴ those it does cause can be deadly.¹⁶⁵ Most notably, asbestos inhalation has been shown to cause lung cancer and mesothelioma, a cancer of the chest and abdominal membranes.¹⁶⁶ Asbestos ingestion has been linked to cancer of the esophagus, stomach, and intestines.¹⁶⁷ Other health effects include high blood pressure, a compromised immune system, and asbestosis, which is scarring of the lungs.¹⁶⁸ While all forms of asbestos are capable of causing adverse health effects, not all forms are equivalent—longer fibers are more harmful,¹⁶⁹ and fiber type is also relevant.¹⁷⁰ The EPA has classified asbestos as a Group A Known Human Carcinogen, because there is sufficient evidence linking asbestos exposure to future cancer development.¹⁷¹ This strength in causal relationship between asbestos and adverse human health effects is the basis for asbestos regulation in the United States.¹⁷²

IV. ASBESTOS REGULATION

Asbestos regulation attempts in the United States began in the 1930s, when the Public Health Service issued the first asbestos exposure guidelines.¹⁷³ At that time, although the mechanisms were not likely understood,

162. *Id.*

163. *Id.*; *The Asbestos Informer*, *supra* note 130.

164. See ASBESTOS PROFILE, *supra* note 129, at 5-7, 17-22.

165. “More people in the United States die from lung cancer than any other type of cancer.” *Lung Cancer Statistics*, CTRS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/cancer/lung/statistics/> (last updated Apr. 30, 2012).

166. *Asbestos Exposure and Cancer Risk*, *supra* note 134.

167. ASBESTOS PROFILE, *supra* note 129, at 7.

168. *Id.* at 21, 106; *The Asbestos Informer*, *supra* note 130.

169. ASBESTOS PROFILE, *supra* note 129, at 18.

170. *Id.* at 39.

171. *Id.* at 19; see also *Background on Risk Characterization*, U.S. ENVTL. PROT. AGENCY (April 4, 2010), <http://www.epa.gov/ttnatw01/nata/riskbg.html#Z5> [hereinafter *Background on Risk Characterization*] (explaining the EPA’s Group classifications).

172. See *Corrosion Proof Fittings v. Envtl. Prot. Agency*, 947 F.2d 1201, 1207 (5th Cir. 1991).

173. Letter from Edwin G. Foulke, Jr., Assistant Secretary of Labor for Occupational Safety and Health Administration to The Honorable Patty Murray, United States Senator, Discussion of the Energy Employees Occupational Illness Compensation Program Act as

doctors and officials knew that asbestos was harmful and could cause disease.¹⁷⁴ However, despite this knowledge, it took the passage of the nation's environmental statutes in the 1960s and 1970s, and the Occupational Safety and Health Act of 1970 (OSHA), for enforceable regulations to come to fruition.¹⁷⁵ To this day, asbestos regulation continues to be an uphill battle. The EPA has been unable to completely ban asbestos,¹⁷⁶ although it is an obvious target due to its carcinogenicity.¹⁷⁷ Thus, there are still seven EPA-administered statutes that regulate asbestos.¹⁷⁸ This Part presents an overview of and examines the asbestos regulations of five of these statutes: the CAA, the CWA, TSCA, RCRA, and CERCLA.¹⁷⁹

A. Clean Air Act Regulations

The CAA is the nation's statute governing air quality and pollutant emissions.¹⁸⁰ Passed in 1963, the purpose was to control air pollution in conjunction with state and local governments.¹⁸¹ The CAA accomplishes this goal by mandating that the EPA promulgate ambient air quality standards,¹⁸² delineating the allowable concentrations of various pollutants that

Administered by the DOL (Aug. 16, 2007), available at http://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=INTERPRETATIONS&p_toc_level=2&p_keyvaluc=DATE_2007&p_status=CURRENT (last visited June 9, 2013).

174. See *id.*

175. See *id.*; *Asbestos Exposure and Building Materials*, SOKOLOVE LAW L.L.C., <http://www.asbestos.net/exposure/risks/asbestos-exposure-and-building-materials> (last visited June 9, 2013); SALE, *supra* note 11, at 36-37; *supra* Section I.B (discussing the role of toxics in the passage of the nation's environmental legislation).

176. In 1991, the Fifth Circuit vacated the EPA's attempt to ban all uses of asbestos. *Corrosion Proof Fittings*, 947 F.2d at 1230; *Asbestos Ban and Phase Out*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/asbestos/pubs/ban.html> (last updated Sept. 24, 2012); DAVIES & MAZUREK, *supra* note 14, at 23-24.

177. See *supra* Section III.C (discussing the health effects of asbestos).

178. The seven statutes are as follows: CERCLA, RCRA, the CWA, the SDWA, the CAA, TSCA, and OSHA. *Laws, Regulations and EPA Policy Directives*, U.S. ENVTL. PROT. AGENCY,

http://www.epa.gov/superfund/health/contaminants/asbestos/compendium/laws_leg.html (last updated Aug. 9, 2011) [hereinafter *Laws, Regulations and EPA Policy Directives*]; see also *supra* note 13. Asbestos is also regulated under the Federal Mine Safety and Health Act, which is administered by the Department of Labor. *Id.*; *Federal Mine Safety and Health Act*, U.S. DEPT. OF LABOR, <http://www.dol.gov/compliance/laws/comp-fmsha.htm> (last visited May 15, 2013).

179. See *supra* notes 27-31 for citations.

180. *Summary of the Clean Air Act*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/lawsregs/laws/caa.html> (last updated Aug. 23, 2012).

181. 42 U.S.C. § 7401(a) (2006); *Origins of the Clean Air Act*, *supra* note 17, § 3:1(A)(4).

182. 42 U.S.C. § 7409(a).

can be in the air at any given time.¹⁸³ Responsibility then falls upon the states to enforce these standards through state implementation plans, which are subject to approval by the agency.¹⁸⁴

However, ambient air quality standards are only promulgated for non-hazardous air pollutants¹⁸⁵—following the 1990 amendments to the CAA, hazardous air pollutants became subject to individual standards both promulgated and enforced by the EPA.¹⁸⁶ The amendments passed with a list of 189 pollutants deemed hazardous by Congress, which can be amended by the EPA Administrator.¹⁸⁷ Asbestos was one of the initially-listed pollutants,¹⁸⁸ and is thus subject to regulation through the National Emissions Standards for Hazardous Air Pollutants (NESHAP).¹⁸⁹

Under NESHAP, the National Emission Standard for Asbestos is the regulatory framework governing the emission of asbestos as a hazardous air pollutant under the CAA.¹⁹⁰ It proscribes handling, monitoring, inspection, recordkeeping, and labeling requirements specific to certain sources of asbestos,¹⁹¹ as well as general requirements that apply to almost all sources listed.¹⁹² Regulated facilities may be chosen for one of three reasons: either they are major sources of asbestos emissions,¹⁹³ are area sources deemed by the EPA Administrator to pose a health or environmental risk,¹⁹⁴ or were regulated under the CAA prior to the 1990 amendments.¹⁹⁵ Major sources are those that emit at least ten tons of asbestos annually, or a combined total of twenty-five tons of hazardous air pollutants of which asbestos is one,

183. *Origins of the Clean Air Act*, *supra* note 17, § 3:1(A)(4).

184. 42 U.S.C. § 7410(a); *Origins of the Clean Air Act*, *supra* note 17, § 3:1(A)(4); *The Clean Air Act—National Ambient Air Quality Standards and State Implementation Plans*, in 5 WEST'S FEDERAL ADMINISTRATIVE PRACTICE, *supra* note 19, § 5256.

185. *The Clean Air Act—National Ambient Air Quality Standards and State Implementation Plans*, *supra* note 184.

186. WILLIAM RODGERS, JR., *Hazardous Air Pollutants*, in RODGERS' ENVIRONMENTAL LAW, *supra* note 17, § 3:1E(A)–(B).

187. *Id.* § 3:1E(A)–(B); 42 U.S.C. § 7412(b)(1)–(2).

188. 42 U.S.C. § 7412(b)(1).

189. *National Emissions Standards for Hazardous Air Pollutants Compliance Monitoring*, U.S. ENVTL. PROT. AGENCY, <http://epa.gov/compliance/monitoring/programs/caa/neshaps.html> (last updated June 13, 2012).

190. 40 C.F.R. § 61.140–.157 (2011).

191. The listed industries/activities are as follows: Asbestos Mills, Roadways, Manufacturing, Demolition and Renovation, Fabricating, Insulating Materials, Waste Disposal for Asbestos Mills and Manufacturing, Demolition, Renovation, and Spraying Operations, Inactive Waste Disposal Sites for Asbestos Mills and Manufacturing and Fabricating Operations, Active Waste Disposal Sites, and Operations that Convert Asbestos-Containing Waste Material into Non-Asbestos Material. *Id.* § 61.140, .142–.151, .154–.155.

192. The general requirements are Air-Cleaning and Reporting. *Id.* § 61.152–.153.

193. 42 U.S.C. § 7412(c)(1).

194. *Id.* § 7412(c)(3).

195. *Id.* § 7412(c)(4).

while area sources are all those that emit less asbestos than a major source.¹⁹⁶ However, as asbestos-emitting activities, such as demolition, do not easily lend themselves to the traditional conception of emission standards, the CAA asbestos regulations are mostly in the form of work practice requirements.¹⁹⁷ The ultimate goal of the CAA regulations is to regulate asbestos-emitting activities to prevent or reduce airborne asbestos release.¹⁹⁸

B. Clean Water Act Regulations

The CWA is the nation's statute governing water quality and effluent releases.¹⁹⁹ Initially passed in 1972 as the Federal Water Pollution Control Act,²⁰⁰ the purpose of the CWA is to limit the discharge of pollutants into water and to maintain water quality.²⁰¹ The CWA operates similarly to the CAA in that it sets out to achieve these goals through the promulgation of water quality standards that are then implemented by the states.²⁰² In addition to water quality standards delineating the maximum pollutant concentrations allowable in water at any given time, the CWA also establishes effluent limitations for point sources²⁰³ of pollution.²⁰⁴ Effluent limitations directly restrict or prohibit a pollutant's release into water.²⁰⁵ As the CWA prohibits "the discharge of toxic pollutants in toxic amounts,"²⁰⁶ the EPA regulates toxic pollutants through effluent limitations.²⁰⁷

196. *Id.* §§ 7412(a)(1)-(2); *Summary of the 1990 Clean Air Act Amendments*, *supra* note 17, § 3.1E(B).

197. See WILLIAM H. RODGERS, JR., *Hazardous Air Pollutant Emission Standards*, in RODGERS' ENVIRONMENTAL LAW § 3:20 (2012); 40 C.F.R. § 61.140-.157 (2011).

198. See 40 C.F.R. § 61.140-.157 (2011).

199. *Summary of the Clean Water Act*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/lawsregs/laws/cwa.html> (last updated Aug. 23, 2012).

200. *Id.*; WILLIAM H. RODGERS, JR., *Origins of the Clean Water Act—Results*, in RODGERS' ENVIRONMENTAL LAW, *supra* note 17, § 4:1(A).

201. 33 U.S.C. § 1251(a) (2006).

202. RODGERS, *supra* note 200, § 4:1(A)(4).

203. A point source of pollution is one that can be identified and subsequently regulated, such as discharge from a factory pipe. *What Is Nonpoint Source Pollution?*, U.S. ENVTL. PROT. AGENCY, <http://water.epa.gov/polwaste/nps/whatis.cfm> (last updated Aug. 27, 2012). This is in contrast to nonpoint source pollution, the individual sources of which cannot be identified. *Id.* "[Non-point source] pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters." *Id.*

204. 33 U.S.C. §§ 1312(a), 1313(a)-(b).

205. RODGERS, *supra* note 200, § 4:1(A)(5).

206. WILLIAM H. RODGERS, JR., *Summary of the Clean Water Act—1977 Amendments*, in RODGERS' ENVIRONMENTAL LAW, *supra* note 17, § 4:2(A) (quoting 33 U.S.C. § 1251(a)(3)).

207. WILLIAM H. RODGERS, JR., *Toxic Pollutants*, in RODGERS' ENVIRONMENTAL LAW, *supra* note 17, § 4:33(A); 33 U.S.C. § 1317(a).

Under the CWA, asbestos is considered a toxic pollutant²⁰⁸ subject to effluent limitations.²⁰⁹ The Effluent Guidelines and Standards for Asbestos Manufacturing Point Source Categories delineate effluent limitations as well as performance and pretreatment standards for eleven point sources of asbestos.²¹⁰ These point sources correlate directly to the asbestos manufacturing industry,²¹¹ thus the CWA regulates asbestos, like all toxic pollutants, on an “industry-by-industry” basis.²¹² This approach, in general, has been both praised and criticized: while regulating industry sectors as opposed to individual pollutants has certainly resulted in faster and more efficient rule promulgation, many industries remain un-regulated, and the potential for individual pollutants to escape regulation, asbestos included, still exists.²¹³

C. Toxic Substances Control Act Regulations

TSCA is the nation’s statute governing the production and use of toxic chemicals.²¹⁴ Passed in 1976,²¹⁵ it regulates the “manufacture, distribution in commerce, processing, use, or disposal”²¹⁶ of chemicals to avoid adverse human health effects.²¹⁷ To achieve this goal, the EPA Administrator can promulgate rules stipulating testing requirements,²¹⁸ prohibiting manufac-

208. When initially published, the Toxic Pollutant List mandated by the CWA, contained broad-based chemical categories as opposed to individual substances. § 1317(a); *Toxic and Priority Pollutants*, U.S. ENVTL. PROT. AGENCY, <http://water.epa.gov/scitech/methods/cwa/pollutants-background.cfm#tp> (last updated Mar. 6, 2012). The EPA subsequently created a Priority Pollutant List, delineating specific chemicals. See CLAUDIA COPELAND, TOXIC POLLUTANTS AND THE CLEAN WATER ACT: CURRENT ISSUES 5 (1993), available at http://digital.library.unt.edu/ark:/67531/metacrs89/m1/1/high_res_d/93-849_1993Sep21.html. Asbestos is currently listed as a “[p]riority [p]ollutant.” *Priority Pollutants*, U.S. ENVTL. PROT. AGENCY (Dec. 13, 2011), <http://water.epa.gov/scitech/methods/cwa/pollutants.cfm>.

209. *Industrial Regulations*, U.S. ENVTL. PROT. AGENCY, <http://water.epa.gov/scitech/wastetech/guide/industry.cfm#exist> (last updated Sept. 14, 2012); 40 C.F.R. § 427.10–.116 (2011).

210. 40 C.F.R. § 427.10–.116. The regulated point sources are as follows: Asbestos-Cement Pipes, Asbestos-Cement Sheets, Asbestos Paper (both Starch and Elastomeric Binder), Asbestos Millboard, Asbestos Roofing, Asbestos Floor Tile, Coating or Finishing of Asbestos Textiles, Solvent Recovery, Vapor Absorption, and Wet Dust. *Id.*

211. *Industrial Regulations*, *supra* note 209.

212. RODGERS, *supra* note 207, § 4:33(B)(2); COPELAND, *supra* note 208, at 5.

213. COPELAND, *supra* note 208, at 6; RODGERS, *supra* note 207, § 4:33(B)(2).

214. *Summary of the Toxic Substances Control Act*, *supra* note 14.

215. Uyesato, *supra* note 71, at 12.

216. 15 U.S.C. § 2603(a)(1)(A)(i) (2006).

217. *Id.* § 2601(a); *Toxic Substances Control Act*, in 5 WEST’S FEDERAL ADMINISTRATIVE PRACTICE, *supra* note 19, § 5265.

218. 15 U.S.C. § 2603(a)–(b).

ture and distribution,²¹⁹ and establishing reporting requirements²²⁰ for chemicals that pose “an unreasonable risk of injury to health or the environment.”²²¹ However, despite these powers, TSCA’s provisions have largely proven inefficient.²²² One of the biggest criticisms is that the burden of proof currently falls on the EPA to show that a chemical is hazardous enough to initiate regulation, and the standard is tough.²²³ In almost forty years, the EPA has only been able to restrict the manufacture and distribution of nine chemicals, one of which is asbestos.²²⁴

The EPA has promulgated three sets of asbestos regulations under TSCA.²²⁵ First, recognizing the risk of unregulated use of asbestos-containing materials in schools,²²⁶ Congress amended TSCA in 1986 to provide the EPA Administrator with the authority to regulate them.²²⁷ Today, the majority of the asbestos regulations promulgated under TSCA are in response to this statutory amendment.²²⁸ Thus, the first set of regulations proscribes procedures for the identification²²⁹ and testing²³⁰ of asbestos-containing materials in schools, as well as for management or remediation²³¹ of any asbestos found therein.²³² The EPA’s third set of asbestos regulations came in 2000, when the agency promulgated regulations under TSCA to fill a gap in the asbestos regulations of the Occupational Health and Safety Act.²³³ These regulations ensure the protection of government employees who work with asbestos and asbestos-containing materials.²³⁴

219. *Id.* § 2605(a), (c).

220. *Id.* § 2607(a)(1).

221. *Id.* § 2603(a)(1)(A)(i).

222. *See supra* Section I.C (discussing TSCA’s inefficacies and current initiatives for regulatory reform).

223. Jonathan Bardelline, *U.S. House Takes up Toxic Chemical Reform Bill*, GREENBIZ.COM (July 23, 2010), <http://www.greenbiz.com/news/2010/07/23/us-house-takes-up-toxic-chemical-reform-bill>; Uyesato, *supra* note 71, at 13.

224. Uyesato, *supra* note 71, at 13; U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 2, at 6, 58-61; Kvinge, *supra* note 8, at 316 n.15; *TSCA Section 6 Actions*, U.S. ENVTL. PROT. AGENCY (Apr. 28, 2010), <http://www.epa.gov/oppt/existingchemicals/pubs/sect6.html>; 15 U.S.C. § 2605.

225. 40 C.F.R. § 763.80–99, .120–.123, .160–.179 (2011).

226. 15 U.S.C. § 2641(a).

227. 15 U.S.C. §§ 2641(b)(1), 2643(a).

228. Asbestos regulations under TSCA span 40 C.F.R. § 763.80–99, § 763.120–.123, and § 763.160–.179 (2011), which are ninety-eight pages in the Code of Federal Regulations. Eighty-eight of those pages are dedicated to Asbestos-Containing Materials in Schools and its appendices.

229. *Id.* § 763.85.

230. *Id.* § 763.86–.87.

231. *Id.* § 763.90–.91, .93.

232. *Id.* § 763.80.

233. *Id.* § 763.120–.123.

234. *Id.* § 763.120–.122.

The EPA originally promulgated the second set of asbestos regulations under TSCA in 1989,²³⁵ but it was not finalized or in force in its current form until 1993 and 1994.²³⁶ These regulations have proven to be extremely controversial,²³⁷ as they were first promulgated with the intent of banning asbestos manufacture and distribution almost entirely.²³⁸ Upon finding that any asbestos exposure “‘pose[d] an unreasonable risk to human health,’”²³⁹ the EPA promulgated a rule to phase out asbestos under TSCA.²⁴⁰ “The EPA’s asbestos proposal contain[ed] three nonzero-sum elements: immediate bans for some products, a ten-year phasedown period during which a shrinking market (for asbestos mined and imported) [was to be] allocated by permit, followed by an exemption system for asbestos applications for which no substitutes ha[d] been developed.”²⁴¹

However, upon industry challenge in *Corrosion Proof Fittings v. Environmental Protection Agency*, the regulations were vacated and remanded to the agency.²⁴² The court found that in promulgating the rules, the EPA failed to consider other, less burdensome, regulatory options and thus, the regulations failed to meet the requisite TSCA standard of being “the least burdensome regulation to achieve . . . minimum reasonable risk.”²⁴³ Today, the regulations prohibit any new asbestos use in the United States,²⁴⁴ and ban the manufacture, importation, processing, and distribution²⁴⁵ of just five current uses: flooring felt, commercial paper, corrugated paper, rollboard, and specialty paper.²⁴⁶ The loss of the *Corrosion Proof Fittings* case, and thus the inability to ban a toxin as obviously harmful as asbestos, is considered to be one of TSCA’s failures.²⁴⁷

235. *Corrosion Proof Fittings v. Envtl. Prot. Agency*, 947 F.2d 1201, 1207-08 (5th Cir. 1991).

236. See 40 C.F.R. § 763.160–178, for dates of regulation promulgation.

237. These regulations were litigated and ultimately vacated by the Fifth Circuit Court of Appeals. *Corrosion Proof Fittings*, 947 F.2d at 1230; *Asbestos Ban and Phase Out*, *supra* note 176; DAVIES & MAZUREK, *supra* note 14, at 23-24.

238. *Corrosion Proof Fittings*, 947 F.2d at 1208; WILLIAM H. RODGERS, JR., *Asbestos—A Keystone Pollutant*, in RODGERS’ ENVIRONMENTAL LAW, *supra* note 17, § 6:8(B).

239. *Corrosion Proof Fittings*, 947 F.2d at 1207 (quoting *Asbestos: Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions*, 54 Fed. Reg. 29,460 (1989)).

240. *Id.* at 1208; RODGERS, *supra* note 238, § 6:8(B).

241. RODGERS, *supra* note 238, § 6:8(B) (footnotes omitted) (discussing the proposed EPA rule).

242. *Corrosion Proof Fittings*, 947 F.2d at 1207, 1230.

243. *Id.* at 1214-15.

244. 40 C.F.R. § 763.165(a) (2011).

245. *Id.* § 763.165, .169, .171.

246. *Id.* § 763.165(a)–(b).

247. See Uyesato, *supra* note 71, at 13 (citing “widespread criticism of TSCA Section 6, which authorizes EPA’s regulation (including ban) of chemicals”).

D. Resource Conservation and Recovery Act Regulations

RCRA is the nation's statute governing the transport and disposal of solid and hazardous waste.²⁴⁸ Given an increasing amount of waste and its potential to adversely affect the environment and human health, Congress enacted RCRA in 1976 as an amendment to the Solid Waste Disposal Act.²⁴⁹ RCRA's main provisions govern the generation, transport, treatment, storage, and disposal of solid and hazardous wastes.²⁵⁰ Notably, RCRA requires the "cradle to grave" management of hazardous waste,²⁵¹ meaning that it is tracked, "from the time it is generated [until] its ultimate disposal."²⁵² RCRA's solid²⁵³ and hazardous²⁵⁴ waste regulations are promulgated by the EPA,²⁵⁵ but generally implemented at the state level.²⁵⁶

RCRA regulates asbestos and asbestos-containing materials as solid wastes,²⁵⁷ as asbestos has not been specifically identified as a hazardous waste under the statute.²⁵⁸ RCRA's solid waste regulations proscribe a wide variety of requirements governing state programs,²⁵⁹ citizen suits,²⁶⁰ and disposal practices.²⁶¹ However, these regulations apply generally to all solid waste; there are no asbestos-specific RCRA regulations.²⁶²

248. *Summary of the Resource Conservation and Recovery Act*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/lawsregs/laws/rcra.html> (last updated Aug. 23, 2012); RODGERS, *supra* note 47, § 7:1(A).

249. 42 U.S.C. § 6901 (2006).

250. *The Resource Conservation and Recovery Act*, in 5 WEST'S FEDERAL ADMINISTRATIVE PRACTICE, *supra* note 19, § 5266.

251. RODGERS, *supra* note 47, § 7:1(A).

252. *Hazardous Waste Regulations*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osw/laws-regs/regs-haz.htm> (last updated Aug. 3, 2012).

253. *Where Is the DSW Final Rule in Effect?*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osw/hazard/dsw/statespf.htm> (last updated Aug. 31, 2012); 42 U.S.C. §§ 6942(b)–(c), 6943.

254. 42 U.S.C. § 6926; *RCRA State Authorization*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osw/laws-regs/state/index.htm> (last updated Aug. 3, 2012).

255. DAVIES & MAZUREK, *supra* note 14, at 2.

256. *Key Federal Laws: Resource Conservation and Recovery Act (RCRA)*, CHEMALLIANCE.ORG, <http://www.chemalliance.org/tools/?subsec=25&id=6927> (last updated Sept. 21, 2012).

257. CAL. ENVTL. PROT. AGENCY, MANAGING ASBESTOS WASTE 2-3 (2006), available at www.dtsc.ca.gov/PublicationsForms/upload/OAD_FS_Asbestos1.pdf.

258. *Id.* at 1-2. See 42 U.S.C. § 6921, for the statutory procedures by which the EPA Administrator can determine a waste hazardous for the purpose of RCRA.

259. 40 C.F.R. §§ 239.1–.13, 256.01–.65 (2009).

260. 40 C.F.R. § 254.1–.3 (2009).

261. See, e.g., 40 C.F.R. §§ 240.100–.211-3, 246.100–.203, 257.1–.30 (2009).

262. See 40 C.F.R. § 239.1–.13; see also *Non-Hazardous Waste Regulations*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osw/laws-regs/regs-non-haz.htm> (last updated Nov. 30, 2012).

E. Comprehensive Environmental Response, Compensation, and Liability Act Regulations

CERCLA is the nation's law governing and providing for the remediation of hazardous waste sites.²⁶³ Enacted in 1980, CERCLA provides the EPA with the authority and the finances to clean up the nation's contaminated sites as well as to address isolated toxic spills and chemical releases.²⁶⁴ CERCLA pays for these activities with the Superfund, a federal trust fund utilized in cases where the responsible party either no longer exists or cannot pay.²⁶⁵ As CERCLA may apply to toxic polluters through retroactive liability,²⁶⁶ the Superfund can also cover costs accrued before responsible parties are identified.²⁶⁷ CERCLA also provides for the creation of hazardous site identification and cleanup standards: the nation's most hazardous sites are placed on the National Priorities List and are remediated as specified in the National Contingency Plan.²⁶⁸

CERCLA regulates asbestos in two ways. First, the cleanup of any asbestos at a hazardous waste site on the National Priorities List would be in accord with the National Contingency Plan.²⁶⁹ Second, CERCLA also regulates asbestos as a hazardous substance under its environmental release provisions.²⁷⁰ Thus, if an environmental release of asbestos occurs in excess of one pound, it is subject to notification requirements.²⁷¹ Upon receipt of a notification of release, the National Response Center alerts "all appropriate Government agencies," including relevant state and local governments.²⁷²

263. *Summary of the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/lawsregs/laws/cercla.html> (last updated Aug. 23, 2012).

264. STACY L. DAVIS ET AL., FEDERAL PROCEDURE § 32:1294 (Lawyers ed. 2011); 42 U.S.C. § 9604 (2006).

265. See DAVIS ET AL., *supra* note 264, § 32:1294; 42 U.S.C. § 9611.

266. See 42 U.S.C. § 9607(a).

267. DAVIS ET AL., *supra* note 264, § 32:1294.

268. *Id.*; 42 U.S.C. § 9605.

269. See *National Oil and Hazardous Substances Pollution Contingency Plan Overview*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/osweroel/content/lawsregs/ncpover.htm#key> (last updated Aug. 19, 2011).

270. 40 C.F.R. § 302.4 (2010); see also Memorandum from Michael S. Alushin, Assoc. Enforcement Counsel for Air, & Glenn L. Unterberger, Assoc. Enforcement Counsel for Superfund, to Regional Counsels, Regions I-X (1990) [hereinafter Alushin & Unterberger], available at www.epa.gov/compliance/resources/policies/civil/caa/stationary/inclu-asbes-rpt.pdf.

271. 40 C.F.R. § 302.4; Alushin & Unterberger, *supra* note 270, at 3.

272. 42 U.S.C. § 9603(a).

V. REGULATORY ANALYSIS

Although the EPA alone²⁷³ regulates asbestos under six different statutes,²⁷⁴ a review of the asbestos regulations authorized under just five of these—the CAA, the CWA, TSCA, RCRA, and CERCLA²⁷⁵—is a regulatory microcosm, evidencing the common criticism that environmental regulations are inefficient and inconsistent.²⁷⁶ This Part first examines the overarching fragmentation of these regulations. It then discusses their inconsistency in two main areas: basis for regulation and targets of regulation. In evaluating these promulgated products of the nation's media-based environmental laws, it becomes evident that statutory inconsistency, rather than any inherent defect in command and control regulation, underlies the system's inefficacy.

A. The Inherent Fragmentation in Asbestos Regulation

Simply by virtue of the statutes under which they were enacted, the asbestos regulations of the CAA, the CWA, TSCA, CERCLA, and RCRA embody one of the main critiques of United States environmental law and regulation: fragmentation.²⁷⁷ Irreparably, each statute regulates different, yet overlapping, releases of asbestos.²⁷⁸ To demonstrate, TSCA has the broad-based authority to regulate the manufacture and use of asbestos simply because it is a chemical substance,²⁷⁹ limiting opportunities for asbestos release in general.²⁸⁰ The CAA regulates the release of asbestos into air, the CWA regulates release into water, and RCRA regulates release onto land.²⁸¹ Finally, CERCLA regulates every release in excess of one pound, as though

273. OSHA is also administered by the Department of Labor. *About OSHA*, U.S. DEPT. OF LABOR, <http://www.osha.gov/about.html> (last visited June 10, 2013). The EPA regulates asbestos under seven statutes, one of which is OSHA. *See supra* note 178 and accompanying text. However, OSHA is also administered by the Department of Labor.

274. *See Laws, Regulations and EPA Policy Directives, supra* note 178.

275. *See supra* Part IV (describing each act and corresponding asbestos regulations).

276. *See supra* Part II (describing command and control regulations and highlighting common criticisms).

277. *See supra* Part II (describing command and control regulations and highlighting common criticisms).

278. DAVIES & MAZUREK, *supra* note 14, at 11-12; Stewart, *supra* note 15, at 28; ROBERT V. PERCIVAL ET AL., *ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY* 94-96 (6th ed. 2009).

279. *See supra* Section IV.C (discussing TSCA and its corresponding asbestos regulations).

280. *Cf. infra* note 287.

281. *See supra* Sections IV.A-B, IV.D (discussing the CAA, the CWA, RCRA, and their corresponding asbestos regulations).

the CAA, the CWA, and RCRA had not already regulated all available depositories.²⁸²

Yet in spite of the seeming redundancy, CERCLA and TSCA may be the statutes with regulations that take greatest account of the fact that the separation of environmental media through statute is a legal fallacy.²⁸³ By regulating any release of asbestos in excess of one pound,²⁸⁴ CERCLA inherently recognizes that any release is a danger, regardless of medium, because air, water, and soil are interconnected.²⁸⁵ Similarly, regulating asbestos at the point of manufacture and use under TSCA, as opposed to regulating asbestos as a waste,²⁸⁶ limits the opportunity for release into any medium, as less asbestos is produced initially.²⁸⁷ Cross-media statutes are important in helping to bridge any safety gaps which may remain from a media-specific focus in other legislation.²⁸⁸

For example, it is not difficult to envision environmental interconnections with respect to asbestos. If asbestos is released into the air, although it can long remain suspended,²⁸⁹ gravity will ensure that the particles eventually settle either on land or in water. Similarly, if asbestos is released into water or onto land, evaporation and wind currents could theoretically suspend the particles into air.²⁹⁰ Asbestos released into water could also be carried by currents onto land, and asbestos released onto land could be carried by rainfall into bodies of water.²⁹¹ That asbestos is chemically inert and generally insoluble provides clues to its extreme environmental persistence.²⁹² These characteristics, coupled with the fact that asbestos remains suspended in water and air and will remain on top of rather than migrate through soil,²⁹³ reinforce the fact that the above-mentioned scenarios could be reali-

282. See *supra* Section IV.E (discussing CERCLA and its corresponding asbestos regulations).

283. See Stewart, *supra* note 15, at 21, 24-25; DAVIES & MAZUREK, *supra* note 14, at 11-12.

284. See *supra* Section IV.E (discussing CERCLA and its corresponding asbestos regulations).

285. Plater, *supra* note 24, at 805.

286. Asbestos is regulated as a solid waste under RCRA. See *supra* Section IV.D.

287. See Matthew G. Curtis, Comment, *When Responsive Legislation Ignores the Forest for the Trees*, 10 RICH. J. GLOBAL L. & BUS. 387, 407-09 (2011) (discussing the Pollution Prevention Act, which aims to stop pollution at the source).

288. *Id.*

289. See *supra* Section III.A (discussing the chemical and physical properties of asbestos).

290. See *infra* note 292 and accompanying text.

291. See *supra* note 203 (describing non-point pollution—pollutants carried into water by rainfall runoff from land surfaces).

292. See *supra* Section III.A (discussing the chemical and physical properties of asbestos).

293. See *supra* Section III.A (discussing the chemical and physical properties of asbestos).

ties. With this knowledge, regulators should take into account just how much the initial medium of exposure actually matters in ensuring safety from and decreasing human exposure to this toxic substance, and thus, whether separate regulations for air, water, and land really make sense.

B. Inconsistency in the Regulatory Basis of Asbestos Regulation

The first inconsistency in the asbestos regulations promulgated under the CAA, the CWA, TSCA, RCRA, and CERCLA is the fact that the threshold for when the EPA can take regulatory action differs under each of the respective statutes.²⁹⁴ Essentially, when Congress provided the EPA with the authority to regulate hazardous substances through these laws, it did not require the agency to always consider all of the same factors.²⁹⁵ For example, under the CAA and the CWA, the EPA Administrator is to consider the health effects of a pollutant when listing it as a hazardous substance,²⁹⁶ but then also the costs of regulation in devising emissions²⁹⁷ and effluent²⁹⁸ standards.²⁹⁹ Similarly, under TSCA, the consideration is whether the substance presents “an unreasonable risk of injury to health or the environment,”³⁰⁰ a standard which goes on to require balancing the economic costs and health benefits of regulation.³⁰¹ Conversely, both RCRA and CERCLA do not require the consideration of costs when designating waste and substances as hazardous.³⁰² According to authors Davies and Mazurek, such differing congressionally-mandated considerations are one of the main reasons why the same substances are often regulated differently across regulations promulgated under the nation’s environmental statutes.³⁰³

The asbestos regulations have not escaped such inconsistency, which is nowhere more glaring than in the disparity between RCRA, which regu-

294. See DAVIES & MAZUREK, *supra* note 14, at 19.

295. *Id.*

296. 42 U.S.C. § 7412(b)(2) (2006); 33 U.S.C. § 1317(a)(1) (2006). *Contra* RODGERS, *supra* note 207, § 4:33(B)(1)–(2) (claiming that health concerns were only accounted for prior to the CWA amendments, which shifted agency focus to regulate by industry as opposed to pollutant).

297. 42 U.S.C. § 7412(d)(2).

298. 33 U.S.C. § 1317(a)(2).

299. See DAVIES & MAZUREK, *supra* note 14, at 19 (concurring that cost is considered under the CWA, but only discussing the CAA’s lack of cost consideration for ambient air quality standards as opposed to its cost consideration when designating hazardous air pollutants).

300. 15 U.S.C. § 2605(a) (2006).

301. DAVIES & MAZUREK, *supra* note 14, at 19; *Corrosion Proof Fittings v. Envtl. Prot. Agency*, 947 F.2d 1201, 1214-15 (5th Cir. 1991).

302. 42 U.S.C. §§ 6921(a), 9602(a).

303. DAVIES & MAZUREK, *supra* note 14, at 19.

lates asbestos as a solid waste,³⁰⁴ and the remaining four statutes—the CAA, the CWA, TSCA, and CERCLA—which regulate it as a hazardous waste.³⁰⁵ In evaluating whether a substance is hazardous, the CWA requires consideration of factors mostly identical to RCRA, such as toxicity, degradability, and persistence;³⁰⁶ however, the end result is different.³⁰⁷ It is similarly notable that CERCLA, which regulates all asbestos releases greater than one pound, including those onto land, finds asbestos to be hazardous.³⁰⁸ However, RCRA declines to make that finding, although it governs the disposal of asbestos onto land.³⁰⁹ If a one-pound release of asbestos onto land is so hazardous as to require government notification,³¹⁰ it would seemingly be important to follow asbestos as a hazardous pollutant under RCRA from “cradle to grave.”³¹¹ Concededly, perhaps part of this discrepancy can be explained by CERCLA’s requisite finding of “substantial” endangerment prior to the listing of a hazardous substance,³¹² which may be more lenient in practice than RCRA’s evaluation of toxicity, degradability, and persistence.³¹³ Additionally, the fact that certain asbestos disposal sites are regulated under the CAA,³¹⁴ which already treats asbestos as a hazardous air pollutant,³¹⁵ could also account for a more lenient approach under RCRA. Regardless, it seems clear that disparate standards at the statutory level could at least contribute to these discrepancies.

C. Inconsistency in the Targets of Asbestos Regulation

The second inconsistency in the asbestos regulations promulgated under the CAA, the CWA, TSCA, RCRA, and CERCLA is the varying nature

304. See *supra* Section IV.D (discussing RCRA and its corresponding asbestos regulations).

305. See *supra* Sections IV.A–C, IV.E (discussing the CAA, the CWA, TSCA, CERCLA, and their corresponding asbestos regulations).

306. Compare 42 U.S.C. § 6921(a) (2006), with 33 U.S.C. § 1317(a) (2006).

307. See *supra* notes 304–05 and accompanying text.

308. See *supra* Section IV.E (discussing CERCLA and its corresponding asbestos regulations).

309. See *supra* Section IV.D (discussing RCRA and its corresponding asbestos regulations).

310. See *supra* Section IV.E (discussing CERCLA and its corresponding asbestos regulations).

311. See *supra* Section IV.D (discussing RCRA and its corresponding asbestos regulations); RODGERS, *supra* note 47, § 7:1(A).

312. 42 U.S.C. § 9602(a) (2006).

313. *Id.* § 6921(a).

314. 40 C.F.R. § 61.149–.151 (2011).

315. See *supra* Section IV.A (discussing the CAA and its corresponding asbestos regulations).

of the products and industries to which they apply.³¹⁶ The CAA is mostly facility-based, regulating those entities which process and handle asbestos or asbestos-containing materials.³¹⁷ The CWA is source-based,³¹⁸ regulating businesses engaged in the production of certain asbestos products.³¹⁹ TSCA regulates, by prohibition, merely five asbestos products,³²⁰ while RCRA and CERCLA regulate asbestos in any form.³²¹

Although such inconsistency is predictable based on the nature of and impetus behind enactment of the nation's environmental statutes,³²² this scheme is problematic. The initial enactment of United States environmental law was a response to widespread citizen concern for the state of the environment; Congress sought to quickly stop large-scale sources of pollution.³²³ Thus, it is not surprising that only the seemingly "large" sources of asbestos have been singled out and regulated under these statutes.³²⁴ In fact, the CAA explicitly provides for such distinction, only making the National Emissions Standards for Hazardous Air Pollutants mandatory for major sources—those which annually emit either ten tons of asbestos or twenty-five tons of hazardous air pollutants including asbestos.³²⁵

Although the nation's current environmental laws and regulations have had undoubted success in reducing large-scale pollutant release, the regulatory necessity has shifted, as residual releases now pose the greater danger.³²⁶ Effective regulation of any remaining smaller sources of asbestos, or any pollutant, will require a more integrated regulatory scheme.³²⁷ The focus will likely be less on false dichotomies based on product or industry and, instead, more on the nature of the contaminants themselves—regulation with a focus on how contaminants interact in both environmental media and human bodies.³²⁸

316. See *supra* Part IV (discussing the CAA, the CWA, TSCA, RCRA, CERCLA, and their corresponding asbestos regulations).

317. See 40 C.F.R. § 61.140–.156; see also *supra* Section IV.A (discussing the CAA and its corresponding asbestos regulations).

318. See RODGERS, *supra* note 207, § 4:33(B)(1)–(2).

319. 40 C.F.R. § 763.165(a)–(b) (2011); see *supra* Section IV.B (discussing the CWA and its corresponding asbestos regulations).

320. See *supra* Section IV.C (discussing TSCA and its corresponding asbestos regulations).

321. See *supra* Section IV.D–E (discussing RCRA, CERCLA, and their corresponding asbestos regulations).

322. See *supra* Section I.B (discussing the history of enactment of United States environmental law).

323. See *supra* Section I.B; see text accompanying notes 62–64.

324. See *supra* notes 190, 209, 245 and accompanying text.

325. *Summary of the 1990 Clean Air Act Amendments*, *supra* note 17.

326. See *supra* notes 92–96, 111 and accompanying text.

327. See DAVIES & MAZUREK, *supra* note 14, at 16–18.

328. See Percival, *supra* note 105, at 160; see generally Latin, *supra* note 87 (claiming this is not yet achievable due to lack of scientific knowledge).

VI. A CONSISTENT, INTERCONNECTED STATUTORY SCHEME: RISING ABOVE THE CURRENT FRAMEWORK

Despite the limited success of past regulatory reform efforts,³²⁹ there is one option that, with some slight modification, has the potential to solve the inefficacies and fragmentation of United States environmental law. Professor Richard B. Stewart, in his article, *A New Generation of Environmental Regulation?*, proposes a “third generation strategy”—one which recognizes that any effective change must occur at the statutory level.³³⁰ While he does not go so far as to suggest necessarily overhauling the nation’s environmental statutes, he does suggest Congress implement a new “legal and institutional structure,” developed through consideration of broad environmental goals that account for ecosystem and media interdependencies and interconnections.³³¹ According to Professor Stewart, once regulations are in place, they should be effectuated with alternative regulatory techniques, including “reflexive law regulatory instruments[,] resource management techniques, land use measures, [and] tax and fiscal measures.”³³² However, application of this reform to the theory furthered in this Comment would forego such alternative regulatory measures and stick with command and control, as the fragmentation and inconsistency often criticized will be cured at the statutory level.

Other countries have been able to achieve this goal of statutory consistency by having only one main piece of environmental legislation.³³³ For example, both the Netherlands and New Zealand have essentially abandoned environmental statutory schemes in favor of just one law, through which they issue licenses and permits (forms of command and control regulation) for environmental activity.³³⁴ With only one environmental law, it is likely easier to ensure consistency in purpose and environmental priorities, negating much of the inefficacies seen in the United States’ system. Additionally, regulation is simplified, as the permit and license categories are broad.³³⁵

Theoretically, the United States could emulate this model and any such initiative should be supported. However, Professor Stewart believes change is more likely to be implemented over time.³³⁶ The idea of starting over is a daunting prospect—thus, if a fresh start approach did not catch on,

329. See *supra* Section II.C (discussing proposed command and control reform).

330. Stewart, *supra* note 15, at 151-54.

331. *Id.*

332. *Id.* at 156.

333. See *id.* at 157-62.

334. *Id.* at 158-60.

335. *Id.*

336. *Id.* at 164.

there are still steps that Congress could take to work toward a similar result: it could aim to draft and pass new smaller-scale environmental laws in line with the goals of consistency and interconnection, perhaps on an issue-by-issue basis.³³⁷

Thus, in either revising current environmental law or enacting new legislation, Congress must think in a new way—beyond the current framework which separates interconnected environmental systems and creates false dichotomies.³³⁸ The focus must be shifted toward the creation of laws and regulations which benefit the environment as a whole, as opposed to specific, legally defined, subsections.³³⁹ Although perhaps unintentionally, Congress has already shown an ability to enact cross-media statutes to solve environmental problems, as both TSCA and CERCLA are media-neutral.³⁴⁰

Furthermore, there is some evidence that Congress may be continuing steps in the direction of a more interconnected statutory scheme.³⁴¹ In 1990, Congress passed the Pollution Prevention Act (PPA),³⁴² in part, because “existing regulations do not emphasize multi-media management of pollution.”³⁴³ The Act has the broad-based goal of decreasing pollution through source reduction.³⁴⁴ As reducing pollution in general prevents its release into all environmental media, this action benefits the environment as a whole. The PPA is one of the more recently enacted environmental statutes implemented by the EPA,³⁴⁵ although the agency decided to regulate through incentives rather than command and control. However, if Congress takes the same base approach to future legislation, as such new laws accumulate over time,³⁴⁶ the framework will shift; the nation’s current environmental laws, and their onerous, inconsistent regulations, could become unnecessary, at least in the realm of pollution prevention.

337. Others may propose regulation on an industry-by-industry basis. *See id.* at 155; Percival, *supra* note 105, at 196-97.

338. *See* DAVIES & MAZUREK, *supra* note 14, at 11-12, 16-17; Stewart, *supra* note 15, at 27-28.

339. *See* Stewart, *supra* note 15, at 151-54.

340. *See supra* notes 285-86 and accompanying text.

341. *See* Curtis, *supra* note 287, at 407.

342. 42 U.S.C. §§ 13101-09 (2010), available at <http://www.gpo.gov/fdsys/pkg/USCODE-2010-title42/pdf/USCODE-2010-title42-chap133.pdf>.

343. 42 U.S.C. § 13101(a).

344. Curtis, *supra* note 287, at 407-09.

345. For a list of statutes currently administered by the EPA and their years of enactment, see *Summaries of Environmental Laws and EOs*, *supra* note 13.

346. *See* Stewart, *supra* note 15, at 164.

CONCLUSION

The inconsistencies and inefficacies of the nation's environmental laws and regulations are well-documented.³⁴⁷ Scholars have debated for at least two decades,³⁴⁸ and the paradigm has become one of inherent fault with command and control regulation.³⁴⁹ As demonstrated, inconsistency and fragmentation among and between the statutes in regard to regulated media, industries, and products contribute to inefficacy.³⁵⁰ Despite the fact that critics acknowledge the inconsistency in United States environmental law and condemn its medium-by-medium approach, suggestions for reform continue, for the most part,³⁵¹ to neglect change at the statutory level³⁵²—instead opting for flexible regulatory approaches anticipated to provide the industry autonomy perceived necessary for efficiency.³⁵³ These changes, despite attempt, have yet to yield cognizable improvement.³⁵⁴ Inconsistency in environmental regulation is still readily apparent;³⁵⁵ the issue persists.

Rather than propose ineffective, “small-scale” changes,³⁵⁶ this Comment advocates for large-scale change in the current statutory scheme—change which would promote consistency and interconnection.³⁵⁷ In order to achieve this change, the nation's environmental laws need an overhaul.³⁵⁸ The key does not lie in changes at the regulatory level. Rather, Congress must think outside the current statutory scheme³⁵⁹ and create laws that support multi-media, interconnected perceptions of the environment.³⁶⁰

Fifty years ago, Rachel Carson alerted the nation to the danger of toxic substances with her novel, *Silent Spring*, and the subsequent public support for a safe, clean environment was overwhelming.³⁶¹ Congress spurred into legislative action, building the nation's entire framework for environmental

347. See *supra* Section II.B (discussing common criticisms of the nation's environmental regulations).

348. See generally Latin, *supra* note 87, for an article on the command and control nature of environmental regulation published in 1985.

349. See Malloy, *supra* note 19, at 268-69, 281-82.

350. See *supra* Section V.C (discussing inefficacies in the regulatory targets of asbestos regulations).

351. See *supra* Part VI (discussing a proposal for reform which recognizes statutory inconsistency).

352. See *supra* notes 23, 123-27 and accompanying text.

353. See *supra* Section II.C (discussing proposals for regulatory reform).

354. See *supra* Section II.C.

355. See *supra* Part V (highlighting the inconsistencies in asbestos regulations).

356. See *supra* Section II.C (discussing proposals for regulatory reform).

357. See *supra* Part VI.

358. See *supra* Part VI (discussing a proposal for reform).

359. Stewart, *supra* note 15, at 29; DAVIES & MAZUREK, *supra* note 14, at 11.

360. See Stewart, *supra* note 15, at 151-54.

361. See *supra* Sections I.A–B (discussing the role of *Silent Spring* and toxics in the passage of the nation's environmental legislation).

law in roughly two decades.³⁶² Yet, despite the promise of this legislation, structured to regulate the use of toxic substances generally as well as their release as pollutants,³⁶³ Americans are still adversely affected. The inefficiency of environmental regulation is clearly having a toxic impact: the human health effects of many chemicals registered remain unknown;³⁶⁴ the incidence of illnesses often correlated with chemical exposure is on the rise;³⁶⁵ and chemically-induced environmental issues abound.³⁶⁶ With human health and lives in the balance, the time is now for the nation to reevaluate its regulatory strategy.

362. *See supra* Section I.B (discussing the role of toxics in the passage of the nation's environmental legislation).

363. *See supra* notes 14-15 and accompanying text.

364. *See supra* Section I.C (highlighting the unknowns regarding chemical exposure and risk).

365. *See supra* Section I.C.

366. *See supra* notes 1-6 and accompanying text.