

# Table of Contents

Capsule Summary .....	1
Perspective .....	19
<b>Chapter 1. Approaches to Environmental Regulation .....</b>	<b>23</b>
A. Methods of Environmental Regulation .....	25
1. Command and Control.....	25
a. Technology-Based Regulation .....	25
(1) Strengths.....	26
(2) Weaknesses.....	26
b. Environmental Quality-Based Regulation .....	26
(1) Strengths.....	26
(2) Weaknesses.....	26
2. Market Incentives .....	27
a. Types of Market Incentives .....	27
(1) Effluent Fees or Pollution Taxes .....	27
(a) Strengths.....	27
(b) Weaknesses.....	27
(2) Marketable Pollution Rights .....	27
(a) Strengths.....	28
(b) Weaknesses.....	28
(3) Subsidies .....	28
3. Information Disclosure .....	28
a. Types of Information Approaches .....	29
(1) Reporting .....	29
(2) Study and Planning.....	29
b. Strengths .....	29
c. Weaknesses.....	29
B. Economic Considerations .....	29
1. The Issue of “Externalities”.....	29
2. Types of Economic Analysis .....	29
a. Cost-Benefit Analysis.....	30
b. Cost Effectiveness Analysis.....	30
c. Cost Consideration.....	31
d. Cost Oblivious.....	31
C. Ethical Considerations .....	31
1. Protecting Nature .....	31
2. Protecting Future Generations .....	31
3. Environmental Justice.....	31
a. Equal Protection.....	31
b. Executive Order 12898 .....	32
c. Title VI of the Civil Rights Act of 1964.....	32
d. Specific Environmental Laws.....	32

<b>Chapter 2. Constitutional Limits, Administrative Decision-Making and</b>	
<b>Judicial Review .....</b>	<b>33</b>
A. Constitutional Limits on Federal and State Regulatory Authority .....	34
1. Potential Limits on Federal Regulatory Authority .....	34
a. Commerce Clause .....	34
b. Tenth Amendment .....	34
c. Eleventh Amendment .....	34
2. Potential Limits on State Regulatory Authority .....	35
a. Supremacy Clause and Preemption .....	35
b. Dormant Commerce Clause .....	35
B. Administrative Process .....	35
1. Environmental Protection Agency .....	35
2. Administrative Decision-Making .....	36
a. Administrative Procedure Act .....	36
b. Rulemaking .....	36
c. Adjudication .....	37
C. Judicial Review .....	37
1. Jurisdiction .....	37
2. Standard of Review .....	37
3. Standing .....	38
a. Zone of Interest .....	38
b. Injury in Fact .....	38
c. Causation and Redressability .....	39
d. Organizational Standing .....	39
<b>Chapter 3. Common Law Torts .....</b>	<b>41</b>
A. Introduction .....	42
B. Causes of Action .....	42
1. Nuisance .....	42
a. Private Nuisance .....	42
b. Public Nuisance .....	42
2. Trespass .....	43
3. Negligence .....	43
4. Strict Liability .....	43
a. Ultrahazardous Activity .....	43
b. Products Liability .....	43
C. Causation .....	44
D. Remedies .....	44
1. Availability of Injunctive Relief .....	44
2. Developing Damage Theories .....	45
a. Cancerphobia .....	45
b. Increased Risk of Cancer .....	45
c. Medical Monitoring .....	45
E. Procedural Issues .....	46
1. Statute of Limitations .....	46
2. Splitting Causes of Action .....	46
<b>Chapter 4. National Environmental Policy Act .....</b>	<b>47</b>
A. Introduction .....	49
1. Background .....	49

2.	Structure of NEPA.....	49
a.	National Environmental Policies .....	49
b.	Environmental Impact Statements.....	49
c.	Council on Environmental Quality .....	49
(1)	Implementing Regulations .....	49
(2)	Coordination Among Federal Agencies; EPA Review of EIS's .....	50
(3)	Preparation of an Annual Report .....	50
B.	EIS Process.....	50
1.	Exemptions from EIS Obligation .....	50
a.	Generally .....	50
b.	Environmental Protection Agency .....	50
2.	Environmental Assessment.....	51
3.	Finding of No Significant Impact.....	51
4.	Notice of Intent and Scoping .....	51
5.	Draft EIS .....	51
6.	Public Comment.....	51
7.	Final EIS .....	51
8.	Judicial Review .....	52
C.	The Threshold Issue: When Must an EIS Be Prepared .....	52
1.	Federal Actions .....	52
a.	Actions by the Federal Government .....	52
b.	Federal Authorization of Actions by Private Parties.....	52
c.	Federal Funding .....	52
2.	Actions .....	53
a.	Proposals.....	53
b.	Inaction .....	53
c.	Proposals for Legislation .....	54
3.	Major/Significantly Affecting .....	54
4.	Human Environment .....	54
D.	Scope of the EIS .....	55
1.	Segmentation .....	55
2.	Tiering and Programmatic EIS's .....	55
E.	Content of the EIS .....	56
1.	Alternatives .....	56
2.	Mitigation .....	56
3.	Uncertainties and New Information.....	57
4.	Worst Case Analysis .....	57
5.	Supplemental EIS.....	57
F.	Substantive Effect of NEPA .....	58
1.	Must an Agency Reach a Specific Decision Under NEPA .....	58
2.	May an Agency Reach a Specific Decision Based on NEPA Authority .....	59
G.	International Application of NEPA .....	59
H.	Judicial Review .....	59
1.	Source .....	59
2.	Standard of Review .....	60
3.	Scope of Review .....	60
4.	Relief.....	60
I.	State Environmental Policy Acts .....	60
J.	Criticisms of NEPA.....	61
K.	Review Questions.....	61

<b>Chapter 5. Clean Water Act .....</b>	<b>63</b>
A. Background .....	66
1. Name of the Statute .....	66
2. Structure .....	66
a. Direct Dischargers—NPDES Point Source Program .....	66
b. Indirect Dischargers—Pretreatment Program .....	66
c. Non-Point Sources—Areawide Controls .....	66
d. Dredge and Fill Program .....	66
e. Oil Spill Program .....	67
3. History .....	67
4. Outline of Major Statutory Provisions .....	67
B. National Pollutant Discharge Elimination System Permit Program .....	68
1. Basic Structure .....	68
2. Scope .....	68
a. Addition of a Pollutant .....	69
b. Point Source .....	69
c. Navigable Water .....	69
(1) Statutory and Original Regulatory Definitions .....	69
(2) Significant Supreme Court Cases Interpreting the Scope of “Waters of the United States” .....	70
(3) 2015 Regulatory Definitions of “Waters of the United States” .....	70
3. Imposition of Conditions .....	71
a. Types of Conditions .....	71
b. Sources of Authority to Impose Conditions .....	71
(1) Technology-Based Limits .....	71
(2) Water Quality Standards-Based Limits .....	72
(3) Ocean Discharge Criteria .....	72
(4) Toxic Effluent Standards .....	72
(5) Water Quality Related Effluent Limitations .....	72
4. Permit Issuance .....	72
a. Federal or State Permit Issuance .....	72
b. Individual or General Permits .....	73
c. Procedural Issues .....	73
d. Effect of Permit—Permit Shield .....	73
C. Technology-Based Limits .....	74
1. Role of Technology-Based Standards .....	74
2. Sources Covered .....	74
a. Existing Sources .....	74
b. New Sources .....	74
c. Publicly Owned Treatment Works .....	75
3. Pollutants Covered .....	75
a. Toxic Pollutants .....	75
b. Conventional Pollutants .....	75
c. Non-Toxic, Non-Conventional Pollutants .....	75
4. Development of National Technology-Based Standards .....	76
a. Developing Technology-Based Limits .....	76
b. National or Case-by-Case .....	76
c. Issues in Developing Technology-Based Limits .....	76
(1) Role of Costs .....	76
(a) BPT .....	77
(b) BAT .....	77

(c) BCT.....	77
(d) NSPS .....	77
(2) Role of Benefits.....	77
(3) Technology Transfer.....	77
(4) Stringency .....	78
5. Variances .....	78
a. Fundamentally Different Factors .....	78
b. Cost and Water Quality Variances .....	79
c. Variances for Toxic Pollutants .....	79
d. Heat.....	79
e. POTW Coastal Discharge .....	79
6. Upset Defense .....	79
7. Summary of Technology-Based Limitations and Compliance Dates.....	80
a. BPT—Best Practicable Technology.....	80
b. BCT—Best Conventional Technology .....	80
c. BAT—Best Available Technology .....	80
d. NSPS—New Source Performance Standard [also known as BADT or Best Available Demonstrated Technology].....	80
e. Secondary Treatment.....	81
D. Water Quality Standards-Based Limits.....	81
1. Role of Water Quality Standards.....	81
2. Elements of Water Quality Standards .....	81
a. Designated Uses .....	81
(1) Fishable/Swimmable Wherever Attainable .....	81
(2) Downgrading.....	82
b. Criteria.....	82
(1) Numerical .....	82
(2) Bioassay .....	82
(3) Narrative.....	82
(4) National Criteria Guidance .....	82
c. Antidegradation .....	83
3. Implementation.....	83
a. Lists of Impaired Waters and Total Maximum Daily Loads.....	83
b. Waste Load Allocations, Load Allocations and Growth Allowances.....	83
c. Mixing Zones .....	83
d. How Expressed in Permits .....	84
e. Enforcement of Water Quality Standards.....	84
f. Variances from Water Quality Standards-Based Limits.....	84
4. Toxic Hot Spots .....	84
a. 304( <i>l</i> ) Lists .....	84
b. Individual Control Strategies.....	84
5. Interstate Pollution.....	84
a. Clean Water Act .....	84
b. Common Law.....	85
E. Pretreatment Program .....	85
1. Role of Pretreatment.....	85
a. Interference and Pass Through.....	85
b. Contamination of Sewage Sludge—Sewage Sludge Guidelines.....	85
2. Types of Pretreatment Limitations .....	86
a. Categorical Standards .....	86
b. General Prohibition.....	86

c.	Local Limits .....	86
d.	Implementation of Pretreatment Standards .....	86
F.	Judicial Review of Government Action or Inaction .....	86
1.	Sources of Federal Jurisdiction .....	86
a.	Section 509(b) .....	86
b.	Section 505.....	87
c.	Federal Question .....	87
2.	Judicial Review of State Issued Permits .....	87
G.	Review Questions .....	87
	<b>Chapter 6. Clean Air Act.....</b>	<b>89</b>
A.	Introduction.....	94
1.	Structure.....	94
2.	History .....	94
3.	Outline of Major Sections of the Clean Air Act.....	94
B.	Economic Efficiency, New Source Bias and Marketable Pollution Rights.....	96
1.	New Source Bias.....	96
2.	Marketable Pollution Rights and “Cap and Trade” Programs.....	96
a.	Rationale for Marketable Pollution Rights.....	97
b.	Elements of a Cap and Trade Program.....	98
c.	Issues in Implementing Cap and Trade Programs .....	98
(1)	Same Pollutant .....	98
(2)	Same Area .....	98
(3)	Actual Reductions.....	98
(4)	Marketability .....	99
(5)	Initial Allocation.....	99
(6)	Uncertainty of Future Requirements.....	99
(7)	Ethical Concerns.....	99
d.	Difference Between Cap and Trade and Pollution Taxes.....	99
C.	Mobile Sources .....	100
1.	Emission Limits .....	100
a.	Federal Standards.....	100
b.	California Standards.....	101
c.	Limits on Emissions of Greenhouse Gases .....	101
2.	Regulation of Automobile Fuels .....	101
a.	Lead.....	101
b.	Reformulated Fuels.....	101
c.	Oxygenated Fuels.....	101
3.	Alternative Fuels and Clean-Fuel Fleet Program .....	102
D.	New Source Performance Standards .....	102
1.	National Technology-Based Emission Limits .....	102
2.	Applicability .....	102
a.	Newly Constructed Sources .....	102
b.	Modified Sources .....	103
3.	NSPS and Existing Sources.....	103
E.	National Ambient Air Quality Standards .....	103
1.	Designation of Criteria Pollutants .....	103
2.	Primary and Secondary NAAQS .....	104
3.	Setting NAAQS .....	104
a.	Cost.....	104
b.	Who Is to Be Protected.....	104

c.	Margin of Safety .....	104
4.	Obligation to Modify NAAQS .....	105
F.	State Implementation Plans .....	105
1.	General Requirements .....	105
a.	What Constitutes the Applicable SIP? .....	105
(1)	State Requirements .....	105
(2)	Federal Review and Approval .....	105
b.	Process of SIP Development .....	106
(1)	Air Quality Control Regions .....	106
(2)	Inventory .....	106
(3)	Emission Limits .....	106
(4)	Modeling .....	106
(5)	Monitoring .....	107
c.	Content of SIPs .....	107
(1)	Enforceable Emission Limitations .....	107
(a)	Emission Reductions .....	107
(b)	Intermittent Controls and Dispersion Techniques .....	107
(2)	New Source Review .....	107
(3)	Interstate Pollution .....	108
(4)	Adequate State Resources .....	108
d.	Role of Cost and Feasibility .....	108
(1)	EPA Approval of State SIP .....	108
(2)	State Development of the SIP Provisions .....	108
(3)	Challenges to the SIP Under State Law .....	108
(4)	Variances .....	109
(5)	Compliance Orders .....	109
(6)	Court Ordered Compliance Dates .....	109
e.	Sanctions for Failure to Adopt an Approvable SIP .....	109
(1)	Federal Implementation Plans .....	109
(2)	Highway Sanctions .....	110
(3)	Increased Offset Ratio .....	110
(4)	SIP Calls .....	110
G.	Nonattainment Program .....	110
1.	Background .....	110
2.	General Program Requirements .....	111
a.	Attainment Deadlines .....	111
b.	Reasonable Further Progress .....	111
c.	RACM/RACT .....	112
d.	Nonattainment New Source Review .....	112
(1)	Geographic Scope of the Program .....	112
(2)	Major Stationary Source .....	112
(a)	Regulated Nonattainment NSR Pollutants .....	112
(b)	Potential to Emit .....	113
(3)	Modified Major Stationary Sources .....	113
(a)	Bubble Rule .....	113
(b)	Significant Increases .....	114
(c)	Calculating Emissions Before and After the Modification .....	114
(d)	Types of Changes .....	114
(4)	Offsets .....	115
(5)	LAER .....	115
(6)	Other Requirements .....	115

3.	Ozone Nonattainment Program .....	115
a.	Classifications.....	116
b.	Program Requirements.....	116
	(1) Reasonable Further Progress .....	116
	(2) Scope of the Nonattainment NSR Review Program.....	116
	(3) Offsets .....	116
	(4) Inspection and Maintenance.....	116
	(5) Transportation Control Plans.....	116
	(6) Clean-Fuel Vehicle Program.....	117
c.	Summary of Significant Requirements in Ozone Nonattainment Areas .....	117
	(1) Marginal Areas .....	117
	(2) Moderate Areas.....	117
	(3) Serious Areas .....	117
	(4) Severe Areas .....	118
	(5) Extreme Areas .....	118
4.	Programs for Other Specific Pollutants.....	118
H.	Prevention of Significant Deterioration .....	119
1.	Background.....	119
2.	Area Classifications and Increments .....	119
a.	Classifications.....	119
b.	Increments for Particulates and Sulfur Dioxide .....	119
c.	Increments for Other Pollutants .....	120
3.	Prevention of Significant Deterioration New Source Review .....	120
a.	Geographic Scope of the Program .....	120
b.	Major Emitting Facility: 100/250 Tons per Year.....	120
	(1) Regulated PSD NSR Pollutants .....	121
	(2) Potential to Emit .....	121
	(3) Modifications.....	121
c.	BACT.....	121
d.	Relationship Between PSD and Nonattainment NSR.....	122
4.	Visibility Protection .....	122
I.	Summary of New Source Performance Standards, Nonattainment NSR and PSD NSR .....	122
1.	Sources Covered .....	122
2.	Technology-Based Control Requirements .....	122
3.	Location of Source .....	123
J.	National Emission Standards for Hazardous Air Pollutants .....	123
1.	Background.....	123
a.	NESHAPs Prior to the 1990 Amendments .....	123
b.	NESHAPs After the 1990 Amendments .....	123
2.	Scope of the Program .....	124
a.	Hazardous Air Pollutants .....	124
b.	Major Sources .....	124
c.	Area Sources .....	124
d.	NESHAPs and Electric Utility Power Plants.....	124
3.	MACT Standards .....	124
a.	Technology-Based Limitations .....	124
b.	Compliance Requirements.....	125
c.	Early Reduction Compliance Extension .....	125
4.	Residual Risk Standards .....	125



5.	Area Source Program.....	126
K.	Climate Change and Emission of Greenhouse Gases.....	126
1.	GHGs as Air Pollutants.....	126
2.	Endangerment Finding and Regulation of Motor Vehicle Emissions .....	126
3.	PSD NSR Requirements.....	127
4.	NSPS Under 111(b).....	127
5.	Clean Power Plan Under 111(d).....	127
L.	Acid Rain and Sulfur Trading Provisions .....	128
1.	Background.....	128
a.	The Acid Rain Problem .....	128
b.	Pre-1990 Provisions of the CAA .....	128
c.	The 1990 Amendments .....	128
2.	Sulfur Allowance Program .....	129
a.	Sulfur Allowances .....	129
b.	Trading of Sulfur Allowances .....	129
c.	Election for Other Sources.....	129
3.	Nitrogen Oxide Program .....	129
4.	Permit Program.....	130
M.	Permits .....	130
1.	Background.....	130
2.	Scope of the Title V Permit Program .....	130
3.	State Permit Programs .....	131
a.	Minimum Program Elements.....	131
b.	Review and Approval of State Permit Programs .....	132
4.	Permit Conditions .....	132
a.	Minimum Requirements.....	132
b.	Permit Shield.....	132
5.	EPA Review of State Issued Permits.....	132
N.	Interstate Pollution Problems.....	133
O.	International Pollution Problems .....	133
1.	General Provisions .....	133
2.	Protection of Stratospheric Ozone and the Montreal Protocols .....	134
P.	Judicial Review of Government Action and Inaction .....	134
Q.	Review Questions.....	134
	<b>Chapter 7. Resource Conservation and Recovery Act.....</b>	<b>137</b>
A.	Background .....	139
1.	Structure of RCRA .....	139
a.	Hazardous Wastes—Subtitle C .....	139
b.	Non-Hazardous, Solid Wastes—Subtitle D .....	139
c.	Underground Storage Tanks—Subtitle I.....	139
d.	Recycled Oil—§ 3014.....	139
e.	Imminent and Substantial Endangerment—§ 7002(a)(1)(B).....	139
2.	History .....	140
3.	Outline of Major Statutory Provisions.....	140
B.	Hazardous Wastes—Subtitle C.....	141
1.	Basic Structure.....	141
a.	Generator Determination of Hazardous Waste.....	141
b.	Manifest Requirement .....	141
c.	TSDF Permit Requirements.....	141
2.	Statutory Definitions of Hazardous Waste and Solid Waste .....	141

3.	Regulatory Definition of Solid Waste.....	142
a.	Discarded Material.....	142
(1)	Abandoned .....	142
(2)	Recycled.....	142
(3)	Inherently Waste Like .....	144
(4)	Military Munitions .....	144
b.	Exclusions .....	144
(1)	Domestic Sewage .....	145
(2)	NPDES Point Source Discharges .....	145
(3)	Reclaimed Materials.....	145
4.	Regulatory Definition of Hazardous Waste.....	145
a.	Listed Wastes .....	145
b.	Characteristic Wastes .....	145
(1)	Ignitability .....	146
(2)	Corrosivity.....	146
(3)	Reactivity .....	146
(4)	Toxicity Characteristic or TC Rule.....	146
c.	Mixture, Derived-from and Contained-in Rules.....	146
(1)	Mixture Rule.....	146
(2)	Derived-from Rule .....	147
(3)	Contained-in Interpretation .....	147
d.	Exclusions .....	147
(1)	Household Hazardous Waste.....	147
(2)	Mining Wastes and Oil and Gas Exploration and Production Wastes .....	148
5.	Contingent Management .....	148
6.	Generator Requirements .....	148
a.	Hazardous Waste Determination.....	148
b.	Obtaining an EPA I.D. Number .....	149
c.	Manifest .....	149
d.	On-Site Accumulation .....	149
e.	Conditionally Exempt Small Quantity Generators.....	149
7.	Transporter Requirements .....	149
8.	Treatment, Storage and Disposal Facilities .....	150
a.	Obligation to Have Permit .....	150
(1)	Federal or State Issuance .....	150
(2)	Final and Interim Status .....	150
b.	Permit Conditions .....	150
(1)	Technical Requirements.....	150
(2)	Closure and Post Closure Plans .....	150
(3)	Financial Responsibility.....	151
(4)	Monitoring.....	151
(5)	Corrective Action .....	151
9.	Land Ban .....	151
a.	No Migration Petitions.....	151
b.	Pretreatment to BDAT Levels.....	151
(1)	Technology-Based Standards.....	152
(2)	Treatment to Levels Below Characteristic Levels .....	152
10.	Export of Hazardous Wastes .....	152
C.	Non-Hazardous Solid Wastes—Subtitle D.....	153
1.	Sanitary Landfill Criteria.....	153

2. Open Dumping Prohibition .....	153
D. Judicial Review .....	153
1. Review of Regulations and Permits .....	153
2. Failure to Perform Non-Discretionary Duties .....	153
E. Imminent and Substantial Endangerment .....	153
1. Government .....	153
2. Private Citizens.....	154
F. Review Questions.....	154

<b>Chapter 8. Comprehensive Environmental Response, Compensation and Liability Act .....</b>	<b>157</b>
A. Introduction.....	160
1. Name of Statute .....	160
2. Structure of CERCLA .....	160
3. History .....	160
4. Delegation of Presidential Authority to EPA .....	160
5. Retroactive Effect.....	161
6. Outline of Major Statutory Provisions.....	161
B. Applicability to Hazardous Substances.....	161
1. Designated Hazardous Substances.....	162
2. Petroleum Exclusion .....	162
3. RCRA Special Wastes .....	162
C. Notification of the Release of Hazardous Substances .....	163
D. Options for Cleaning up Hazardous Substances .....	163
1. Government Options.....	163
a. Clean up the Site and Institute Cost Recovery .....	163
b. Issue a Cleanup Order .....	164
(1) Liability for Violation of a 106 Order .....	164
(2) Preenforcement Review .....	164
2. Cost Recovery by Private Parties.....	164
a. Private Causes of Action Under CERCLA.....	165
b. Significance of the Cause of Action .....	165
c. Determining Which Cause of Action Applies .....	166
d. Summary of the Private Causes of Action .....	166
1. Cause of Action Under § 107(a)(4)(B).....	166
2. Cause of Action Under § 113(f)(1) .....	166
3. Cause of Action Under § 113(f)(3)(B) .....	166
E. Liability Provisions.....	167
1. Reading Section 107(a) .....	167
2. Elements of a Cost Recovery Claim .....	167
a. Release or Threatened Release .....	167
b. Facility .....	168
c. Hazardous Substance.....	168
d. Defendant Is a Potentially Responsible Party .....	168
e. Incurred Response Costs .....	168
f. Consistency with the National Contingency Plan .....	168
3. Potentially Responsible Parties .....	169
a. Current Owners or Operators .....	169
(1) Lessee Liability.....	169
(2) Lender Liability.....	169
(3) Parent Company Liability .....	169

	(4) Successor Company Liability.....	170
	(5) Federal, State and Municipal Governments.....	170
	b. Past Owner/Operators .....	171
	c. Persons Who “Arranged for Disposal”.....	171
	d. Transporters Who Selected the Site.....	171
4.	Extent of Liability .....	172
	a. Strict Liability .....	172
	b. Joint and Several Liability .....	172
	c. Equitable Allocation.....	172
	d. Causation Issue .....	173
5.	Defenses to Liability .....	173
	a. Act of God.....	173
	b. Act of War .....	173
	c. Third Party Defense .....	174
	d. Landowner Defenses .....	174
	(1) Innocent Landowner Defense .....	174
	(2) Contiguous Landowner Defense.....	174
	(3) Bona Fide Prospective Purchaser and Windfall Lien .....	175
	(4) “All Appropriate Inquiry”.....	175
	e. Federally Permitted Release .....	176
	f. Waiver of Liability Among Private Parties .....	176
	g. Bankruptcy .....	176
6.	Recoverable Damages .....	176
	a. Response Costs .....	176
	b. Attorney’s Fees .....	177
	c. Natural Resource Damages .....	177
F.	Extent of Cleanup—How Clean Is Clean .....	177
	1. Background.....	177
	a. National Contingency Plan.....	177
	b. Removal and Remedial Actions.....	178
	(1) Removal Actions .....	178
	(2) Remedial Actions .....	178
	c. National Priorities List.....	178
	2. Cleanup Standards .....	178
	a. Long-Term, Permanent, On-Site.....	179
	b. ARARs .....	179
	c. Baseline Risk Assessment .....	179
	d. Cost Effective.....	179
	e. State Laws .....	179
	3. Administrative Process.....	180
	a. RI/FS and RODs .....	180
	b. Public Participation.....	180
	c. Alternatives .....	180
G.	Settlement of CERCLA Claims .....	180
	1. Releases from Liability .....	180
	2. Contribution Protection .....	181
	3. De Minimis Settlements .....	181
	4. Judicial Review .....	181
H.	Brownfields.....	181
I.	Citizens Suits .....	182
J.	Review Questions.....	182

<b>Chapter 9. Government Enforcement and Citizen Suits .....</b>	<b>185</b>
A. Government Enforcement .....	186
1. Compliance Order .....	186
2. Administrative Penalties.....	186
3. Civil Prosecution .....	187
4. Criminal Prosecution .....	187
B. Citizen Suits.....	187
1. Constitutional Prerequisites .....	187
a. Standing.....	187
b. Mootness .....	188
2. Statutory Prerequisites .....	188
a. Notice and Delay .....	188
b. Diligent Prosecution.....	188
c. Wholly Past Violations.....	189
<b>Chapter 10. Regulation of Toxic Substances.....</b>	<b>191</b>
A. Introduction.....	192
B. Dealing with Uncertainty.....	192
1. Reserve Mining Co. v. EPA .....	192
2. Ethyl Corp. v. EPA.....	193
C. Defining “Safety”.....	193
1. Threshold v. Non-Threshold Pollutants .....	193
2. Defining a Level of Acceptable Risk .....	193
3. Role of Cost in Defining a Level of Risk .....	194
D. Risk Assessment Methodology.....	195
1. Hazard Identification.....	195
2. Dose-Response Assessment.....	195
3. Exposure Assessment .....	196
4. Risk Characterization.....	196
E. Treatment of Toxic Substances Under Federal Statutes .....	196
1. Clean Air Act .....	196
2. Clean Water Act.....	196
3. Federal Insecticide, Fungicide and Rodenticide Act.....	197
a. Registration .....	197
b. Cancellation, Suspension and Emergency Orders .....	198
c. Indemnification for Canceled Pesticides.....	198
d. Regulation of Pesticides in Food .....	198
4. Toxic Substances Control Act.....	198
a. Testing Requirements.....	199
b. Premanufacture Notification.....	199
c. Regulation of Chemical Substances .....	199
d. Reporting and Recordkeeping .....	199
<b>Chapter 11. Regulation of Natural Resources, Regulation of Land Use and Regulatory Takings .....</b>	<b>201</b>
A. Regulation of Wetlands Under Section 404 of the Clean Water Act .....	203
1. Jurisdiction.....	203
2. The Section 404 Permit Program.....	203
3. Assessment of Alternatives .....	203
4. Mitigation .....	203

B.	Endangered Species Act .....	204
1.	Listing of Endangered and Threatened Species and Designation of Critical Habitat .....	204
2.	Prohibitions on “Taking” Endangered Species .....	204
3.	Limitations on Actions of the Federal Government.....	204
4.	Limitation on Actions by Private Actions.....	205
a.	Private Actions That Constitute a “Take” .....	205
(1)	Section 9.....	205
(2)	Incidental Takes and Habitat Conservation Plans .....	205
b.	Private Actions Requiring Government Approval .....	205
C.	Public Trust Doctrine .....	205
D.	Federal Land Policy .....	206
E.	Takings .....	206
1.	Regulatory Takings.....	206
2.	Takings Tests .....	207
a.	Per Se Tests .....	207
(1)	Physical Invasion.....	207
(2)	Total Deprivation of Value.....	207
b.	Ad Hoc Balancing Tests .....	207
c.	Remedies.....	208
	<b>Chapter 12. International Environmental Law .....</b>	<b>209</b>
A.	Sources of International Law .....	210
1.	Treaties .....	210
2.	Custom .....	210
3.	General Principles of Law Recognized by Civilized Nations.....	210
4.	Judicial Decisions and Writings of Highly Qualified Publicists .....	210
B.	International Environmental Law Institutions .....	210
1.	International Tribunals .....	211
2.	United Nations Organizations .....	211
3.	World Trade Organization.....	211
4.	International Financial Institutions.....	211
5.	Non-Governmental Organizations .....	211
C.	Issues in International Environmental Law .....	211
1.	Transboundary Pollution.....	211
2.	Ozone Depletion .....	212
3.	Climate Change.....	212
D.	International Trade and Environmental Law .....	212
	<b>Appendix A. Answers to Review Questions .....</b>	<b>215</b>
	<b>Appendix B. Practice Exam Questions .....</b>	<b>221</b>
	<b>Appendix C. Sample Answers to Practice Exam .....</b>	<b>225</b>
	<b>Appendix D. Acronyms .....</b>	<b>237</b>
	TABLE OF CASES.....	245
	TABLE OF STATUTES.....	247