



ENVIRONMENTAL BUSINESS INTERNATIONAL, INC.

Research, Consulting and Publishing for the Environmental Industry

EBI Report 727

The U.S. Environmental Consulting & Engineering Industry

**An Encyclopedia of Markets, Strategy, Management Issues
and Competition in the U.S. Consulting & Engineering
Industry and Global Markets**

June 2017

**Environmental Business International, Inc.
4452 Park Blvd. #306, San Diego CA 92116
619-295-7685; ebionline.org; environmentalbusiness.org
climatechangebusiness.com**

Table of Contents

1.	THE U.S. ENVIRONMENTAL CONSULTING & ENGINEERING INDUSTRY	20
1.1	ABOUT THIS REPORT	20
1.1.1	<i>Report Objective and Purpose</i>	20
1.1.2	<i>Scope and Methodology</i>	21
1.1.3	<i>Acknowledgements</i>	23
1.1.4	<i>About EBI</i>	24
1.1.5	<i>Disclaimer</i>	25
1.1.6	<i>Copyright</i>	26
1.2	DEFINITION AND OVERVIEW OF THE ENVIRONMENTAL INDUSTRY	27
1.2.1	<i>Environmental Industry Segments</i>	28
1.2.2	<i>Environmental Industry Customers and Buyers</i>	39
1.2.3	<i>Growth by Client, Service & Media in Peak Years 2005-2007</i>	40
1.2.4	<i>Energy Market Has Long Legs</i>	49
1.2.5	<i>Historical Framework of the Environmental Industry</i>	56
1.2.6	<i>Impact of Recession and Regulatory Uncertainty on a Maturing Industry</i>	61
1.2.7	<i>Transition to Sustainability and a Value-Based Environmental Industry</i>	62
1.2.8	<i>The Great Recession and The Recovery</i>	67
1.3	EVOLUTION OF THE ENVIRONMENTAL CONSULTING INDUSTRY	71
1.3.1	<i>Environmental C&E from the 1960s to the 21st Century</i>	72
1.3.2	<i>Growth Drivers from 2000 to the Present</i>	78
1.3.1.2	Growth Drivers in the C&E Market, 2004-2007.....	78
1.3.2.2	Global Resource Boom Continued in 2013-2014	80
1.3.3.2	Broad Opportunity In EIA/Permitting	81
1.3.4.2	Cleanup Stalls in 2012-2013.....	83
1.3.5.2	Sustainability—Adaptation and Supply-Chain Management.....	85
1.3.6.2	Growth Drivers in the C&E Market, 2007-2009.....	88
1.3.7.2	Growth Drivers in 2010 - From Compliance to Sustainability	89
1.4	YEAR-BY-YEAR MARKET REVIEW	91
1.4.1	<i>2016 Review and 2017 Outlook</i>	91
1.4.1.1	The C&E Industry Counts On Growth But Awaits Change In Direction.....	91
1.4.1	<i>2015 Review and 2016 Outlook</i>	95
1.4.1.1	Economic Outlook Mixed But Improving, Tempered by Volatility, Domestic and Abroad....	95
1.4.2	<i>2014 Review and 2015 Outlook</i>	113
1.4.1.2	Environmental C&E Sector on the Upswing in 2014	113
1.4.2.2	Large Engineering Firms Tout Advantages of Scale, Keep an Eye On Oil Prices	128
1.4.3	<i>2013 Review and 2014 Outlook</i>	134
1.4.1.3	2013 Trends Upward For C&E Firms, But Something Still Not Quite Right.....	134
1.4.4	<i>2011 Review and 2012 Outlook</i>	141
1.4.1.4	C&E Sector Continues Rebound in 2011, But Worries About Economy Linger	141
1.4.5	<i>2010-2011: Year in Review</i>	150
1.4.1.5	C&E Firms See Private Sector Upturn in 2011, But Will Stability In Federal Funding Last?	150
1.4.2.5	CH2M HILL: New Look Recovery	151
1.4.3.5	Phylmar: Affiliate Network Aims To Compete With Big Firms	154
1.4.4.5	CRA Says Recovery Is On The Way.....	155
1.4.5.5	Mabbett: Still Structural Problems In The Economy	157
1.4.6.5	Baker Braces For Cuts	160
1.4.7.5	PMC Outsources For Munis	161
1.4.8.5	HDR: No Bells & Whistles.....	163
1.4.9.5	Growth Amidst Uncertainty For EMPSi.....	165
1.4.10.5	Liberty Works The Boom In Shale Gas E&P	165
1.4.11.5	Recovery Not Evident To EA ES&T	166
1.4.6	<i>2011 Survey Results</i>	168
1.4.7	<i>2011 Survey in Context: Which Way the Recovery?</i>	174
1.4.1.7	Patchy Recovery For The Environmental Industry In 2011	174

1.4.8	2009-2010: Year in Review	179
1.4.9	2007-2008: Year in Review	188
1.4.1.9	The Credit Crunch: Impacts On Deal Flow, Valuations	193
1.4.10	2006-2007: Year in Review	196
1.4.11	2004 - 2005: Year in Review	206
1.4.1.11	C&E Executives Give Their Take on 2005	213
1.4.12	2003 - 2004: Year in Review	219
1.4.13	C&E Revenue Distribution Tables 2004-2013	228
1.4.14	2002 - 2003: Year in Review	230
1.4.15	2001 Year in Review	240
1.4.1.15	Paul Zofnass Reflects on the Financial Roller-Coaster	244
1.4.16	21 st Century Trends: Back to Private Ownership	249
1.4.17	Historical Review from 1970-2005	251
1.4.1.17	Central Business, Old & New Market Drivers	253
1.4.18	Dynamic Markets Require Dynamic Strategies	263
1.5	THE U.S. ENVIRONMENTAL C&E MARKET	266
1.5.1	Environmental C&E Markets by Client Type	266
1.5.2	The Overall C&E Market	267
1.5.1.2	By Customer Type	267
1.5.2.2	By Firm Type	268
1.5.3.2	By Economic Sector And Firm Type	271
1.5.3	The Public Sector	272
1.5.1.3	By Level Of Government	272
1.5.4	Federal Share of Revenues Rises for C&E Firms in 2009	273
1.5.1.4	The Private Sector	285
1.5.2.4	Intra-Industry Clients	287
1.5.5	Environmental Industry Segments	290
1.5.6	Environmental C&E Markets by Service Type	291
1.5.7	Environmental C&E Markets by Environmental Media	296
1.5.8	Geographic Distribution of U.S. Environmental C&E Market	303
1.5.9	Projections for Growth in Environmental C&E Markets	312
1.5.1.9	Public Sector Markets	315
1.5.2.9	State Cleanup Programs Weather Downturn in 2010-2011	318
1.5.3.9	Private Sector Markets	331
1.5.4.9	Environmental Work for Energy & Power Industry	334
1.5.5.9	C&E Bankruptcies in 2014: A Trend?	348
1.5.6.9	C&E Industry Counts On Growth But Awaits Change In 2017-2018	354
1.5.7.9	EFCG Survey Data Indicates Sustained Growth In Revenue And Profits; And Likely Continued High Activity In M&A	361
1.5.8.9	Global Consulting Market Softened In 2015, But Slight Rebound In 2016	366
1.5.10	Environmental Media Markets	370
1.5.1.10	Environmental Service Markets	373
1.5.11	Trends in Media and Service Markets	373
1.6	GENERATOR TRENDS AND SPENDING DATA	381
1.6.1.1	Historical Spending Trends	383
1.6.2.1	Buying Habits Develop Strong Business Bias	388
1.6.2	EH&S Function For Industrial Buyers	389
1.6.1.2	Hewlett Packard	391
1.6.2.2	Xerox Corp.	394
1.6.3.2	Baxter International	397
1.6.4.2	Exelon Corp.	400
1.6.5.2	General Motors	405
1.6.6.2	Polaroid Corp.	409
1.6.7.2	National Grid	413
1.6.8.2	Raytheon Corp.	418
1.6.9.2	Dow Chemical	422
1.6.10.2	P&G	425
1.6.11.2	DuPont	428

1.7	INTERNATIONAL C&E MARKETS.....	432
1.7.1	<i>Market Drivers</i>	437
1.7.1.1	Regulation and Enforcement.....	437
1.7.2.1	Reputation and Risk.....	439
1.7.3.1	Infrastructure rehabilitation and expansion.....	440
1.7.4.1	The Energy Transformation	441
1.7.5.1	Sustainability & Resource Economics as Environmental Market Drivers	444
1.7.2	<i>Global Market & Regional Review</i>	445
1.7.1.2	Latin America	462
1.7.2.2	2011 Chile C&E Industry	472
1.7.3.2	Western Europe.....	479
1.7.4.2	Russia: A Question of Commitment and Attitude.....	495
1.7.5.2	Asia: China Remains The Top Target.....	498
1.7.6.2	India.....	502
1.7.3	<i>U.K. Environmental Consulting Sector up 5% Again; Market Rebound Continues with Improving Economy</i>	505
1.7.4	<i>12 Firms Spearhead Global Environmental Consulting</i>	511
1.7.5	<i>Case Studies of C&E Firms in Global Markets</i>	517
1.7.1.5	Tetra Tech Inc.	517
1.7.2.5	ERM.....	522
1.7.3.5	ICF International.....	529
1.7.4.5	Inogen Alliance.....	532
1.7.5.5	SCS Engineers	536
1.7.6.5	Louis Berger Group	539
1.7.7.5	MWH Global	544
1.7.8.5	International Resources Group.....	547
1.7.9.5	EnSafe.....	552
1.7.10.5	Earth Tech.....	556
1.7.11.5	Mabbett Group.....	560
1.7.12.5	ARCADIS.....	564
1.7.13.5	ENSR.....	568
1.7.14.5	Haley & Aldrich’s Global EHS Practice	572
1.8	ENVIRONMENTAL C&E MANAGEMENT ANALYSIS	576
1.8.1	<i>Management Priorities</i>	576
1.8.1.1	In Internal Management, Staffing And Cost Remain The Big Issues.....	576
1.8.2	<i>2011 Survey Respondents Cite Key Management Issues</i>	584
1.8.3	<i>Meeting the Leadership Challenge (2008)</i>	587
1.8.4	<i>Challenges Ahead for Environmental Consulting Firms</i>	589
1.8.5	<i>Market Pressures Challenge Environmental CEOs on Leadership</i>	599
1.8.6	<i>Management Priorities</i>	609
1.8.1.6	Management Priorities in C&E Firms.....	610
1.8.7	<i>Financial Management of C&E Firms</i>	612
1.8.1.7	Profitability Benchmarks	613
1.8.2.7	Overhead and Costs	616
1.8.8	<i>Business Planning Practices</i>	618
1.8.1.8	Tactical Planning	618
1.8.2.8	Strategic Planning.....	619
1.8.9	<i>Risk Management and Contract Vehicles</i>	620
1.8.1.9	Fixed-Price Pressures.....	622
1.8.10	<i>Human Resources</i>	629
1.8.1.10	After Layoffs, C&E Firms Work To Retain Key People For Rebound.....	629
1.8.2.10	Recruitment & Retention: The “War for Talent” in 2008	635
1.8.3.10	Recruitment and Retention (Winter 2007).....	642
1.8.4.10	Q&A with Executive Recruiter Graziano (Summer 2003).....	651
1.8.5.10	Recruiting Sources.....	653
1.8.6.10	Personnel	653
1.8.7.10	Retention Strategies	654
1.8.8.10	Turnover	654
1.8.11	<i>Sales, Marketing, and Business Development</i>	655

1.8.1.11	In BD It's The Seller/Doer Model and Client Retention for C&E Firms.....	655
1.8.2.11	Executives Weigh In on Business Development Practices (Winter 2004).....	664
1.8.3.11	Q&A: Client and Employee Retention the Hallmarks of Profitable Firms.....	669
1.8.4.11	Operating Expenditures for Marketing.....	675
1.8.5.11	Changes in Marketing Practices.....	676
1.8.6.11	Marketing/Sales Methods and Effectiveness.....	677
1.8.7.11	Marketing Structure.....	678
1.8.8.11	Marketing Strategy.....	679
1.8.9.11	Market Research Tactics.....	679
1.8.12	<i>Operations and Service Development</i>	679
1.8.13	<i>Strategic Planning</i>	680
1.8.1.13	New Business Model for Small Professional-Services Firms.....	686
1.9	M&A AND CONSOLIDATION IN THE C&E INDUSTRY.....	701
1.9.1	<i>M&A Activity In 2016</i>	701
1.9.1.1	Key Water Industry M&A Transactions In 2015-2016 Reflect Variety And Breadth Of Increasingly Global Water Industry.....	701
1.9.2.1	GE Water & Process Technologies Drives Growth With Innovation And Keeps Acquisition Pipeline Open	705
1.9.3.1	Acquisition Of MHW Global Vaults Stantec Up The Top C&E Firm List.....	709
1.9.4.1	Ecolab Invests In Aquatech International To Broaden Market Offering.....	712
1.9.5.1	SRP Environmental Completes Third Acquisition In 2016.....	716
1.9.6.1	Industrial Services M&A Up 44% In 2016; Private Equity Owned Firms Change The Dynamic ...	720
1.9.7.1	SWCA Acquires Into New England.....	724
1.9.8.1	Game Changing C&E Deals Continue In Increasingly Global World Of M&A.....	727
1.9.9.1	Takeaways On 2016 A/E M&A Activity.....	732
1.9.10.1	Enablon Merges With Global Firm Wolters Kluwer.....	736
1.9.11.1	Intelix Technologies Maintains 35% Growth Rate; Adds Ecocion.....	744
1.9.12.1	BSI Makes Three Acquisitions in 2016.....	752
1.9.13.1	KCI Makes Six Acquisitions Since 2012.....	760
1.9.14.1	OBG Acquisitions Reflect Commitment To Brand And Accelerating Growth.....	765
1.9.15.1	ATC Completes Three Acquisitions In 2016 After Cardno; Broadens Portfolio In Air, Land And Water	770
1.9.2	<i>M&A Activity Continued In 2015 Across The Environmental Industry</i>	772
1.9.3	<i>M&A in the Environmental Industry Heats up in 2014 with Mega-Deals</i>	788
1.9.4	<i>Five Takeaways on 2014 M&A Activity—What Does it Mean for 2015?</i>	812
1.9.5	<i>Consolidation Overview</i>	815
1.9.6	<i>M&A Activity Re-Energized in 2011</i>	818
1.9.7	<i>2011 Deal Profile: JFNew Sells to Cardno</i>	829
1.9.8	<i>2011 Deal Profile: S&ME's Acquisition Of Qore</i>	832
1.9.9	<i>M&A Upswing in 2010</i>	835
1.9.1.9	Big C&E Deals of 2010.....	842
1.9.2.9	"Boomer" Owners Look to ESOPs.....	844
1.9.10	<i>Q&A: John Cowdery Reflects On M&A Experience From Both Sides</i>	851
1.9.11	<i>The Vanishing Mid-Sized Firm?</i>	858
1.9.12	<i>As The Environmental Industry Consolidation Turns</i>	864
1.9.13	<i>2008: Valuations Down Slightly</i>	868
1.9.14	<i>Summary of 2006 M&A Activity</i>	873
1.9.15	<i>Big Merger & Acquisition Deals</i>	881
1.9.1.15	ARCADIS-Pirmie.....	881
1.9.2.15	AECOM-ENSR.....	883
1.9.3.15	ARCADIS-BBL.....	888
1.9.4.15	Kleinfelder Acquisition Of GSC.....	891
1.9.16	<i>Summary of 2004 M&A Activity</i>	894
1.9.17	<i>M&A Perspective with EFCG</i>	906
1.9.18	<i>Lessons Learned from C&E Consolidation Plays of the Past</i>	909
1.9.19	<i>Management Buyouts Highlighted 2001 Activity</i>	918
1.9.20	<i>Summary of 1999 M&A Activity</i>	925
1.9.1.20	C&E M&A Statistics in the 90s.....	928

1.10	ANALYSIS OF COMPETITION	933
	The Top Firms by Environmental Media	997
1.10.1.1	Public Sectors	1022
1.10.2.1	The Top International Firms	1036
1.11	NICHE MARKETS	1042
1.11.1	<i>Shale Gas Exploration & Production</i>	1042
1.11.1.1	Q&A With Shaw Group as Shale Gas Leader	1055
1.11.2	<i>Climate Change Consulting & Engineering</i>	1062
1.11.1.2	Consultants Report Surge in Business as Clients Grapple With Climate Change	1063
1.11.2.2	Climate Change a Distinct Practice for SAIC	1065
1.11.3.2	ICF Sees North American Market Shift into High Gear	1069
1.11.4.2	At ERM, Global Network Supports Core Climate Change Team	1071
1.11.5.2	ENVIRON's Carbon Management Practice Picks Up Steam	1077
1.11.3	<i>Renewable Energy Consulting & Engineering</i>	1078
1.11.1.3	Renewable Energy EPC Market Balances Fortune With Volatility	1078
1.11.2.3	Solar Engineering Markets	1088
1.11.3.3	Wind Energy Consulting & Engineering	1090
1.11.4.3	Categories of Wind Energy Services	1094
1.11.4	<i>Sustainability Consulting & Engineering</i>	1095
1.11.1.4	2010 Review	1104
1.11.2.4	Corporate Responsibility Salary Survey Finds Sustainability Entrenched as a Profession	1109
1.11.3.4	Equator Principles Financial Institutions (EPFI)	1110
1.11.4.4	Environmental Industry Has A Critical Role To Play In Fostering Real Sustainability	1116
1.11.5.4	Strategic Environmental Management & Sustainability Remains an Elusive Objective for Firms	1123
1.11.6.4	Through Supply-Chain Management, Sustainability Leaders Wield the Big Stick on Vendors	1135
1.11.7.4	Sustainable Development: Is it a Market Driver?	1140
1.11.8.4	Profile: Sinclair Knight Merz (SKM)	1148
1.11.9.4	SSOE	1152
1.11.10.4	Profile: ENVIRON Looks in the Sustainability Mirror	1158
1.11.5	<i>Sustainable Cities</i>	1160
1.11.1.5	Sustainable City Program Examples	1170
1.11.2.5	San Francisco Claims Sustainable City Leadership	1171
1.11.3.5	Baltimore's Sustainable City Program Has Legal Underpinnings	1174
1.11.4.5	Salt Lake City Upgrades Sustainability To A City-Wide Priority	1177
1.11.5.5	EEBCG A Jump Start To Sustainability Planning For Dearborn, Michigan	1182
1.11.6.5	Chula Vista Uses A Climate-Centered Focus From Its Climate Action Plan	1185
1.11.7.5	Edmond OK Dances Around The "S" Word	1187
1.11.8.5	Sustainable City Practice Profile: ICF	1189
1.11.9.5	Sustainable City Practice Profile: CH2M HILL	1195
1.11.10.5	Sustainable City Practice Profile: Mooney	1199
1.11.11.5	Sustainable City Practice Profile: Farr Associates	1204
1.11.6	<i>Community Planning & Smart Growth</i>	1207
1.11.7	<i>Air-Quality Consulting & Engineering</i>	1217
1.11.1.7	2014 Air Market Overview	1241
1.11.2.7	National Commitment to Fight Severe Air Pollution Boosts China Market	1255
1.11.3.7	Oil and Gas Producers Face Up to Air Pollution Issues	1263
1.11.4.7	EPA Stirs the Pot with Re-Proposed NSPS for Coal- and Gas-Fired Power Plants	1272
1.11.5.7	Q&A: Thomas Stoner	1279
1.11.6.7	Competitive Context: Air Consulting Market in the 2000s	1283
1.11.7.7	Air Quality C&E Review 2010	1290
1.11.8.7	Rules Drive Power AQ Projects For B&V	1293
1.11.9.7	Air Quality Standards	1297
1.11.10.7	Air Market Rides on Power Industry's Thirst For Coal; Lags On New Regs	1303
1.11.11.7	China's Air Market	1306
1.11.12.7	SCS Acquires Tracer Environmental Sciences & Technologies Inc. (Tracer ES&T)	1310
1.11.13.7	Trinity Consultants APC Acquisitions	1313
1.11.14.7	ERM's Air Quality Practice	1317
1.11.15.7	Black & Veatch: Perspective on APC Jobs	1320
1.11.16.7	Addressing Air-Quality Issues At Ports Spurs a Growing Air Consulting Practice at ENVIRON	1324
1.11.17.7	Air Consulting & Engineering: Four Leaders Discuss Turn of the Century Trends	1327

1.11.18.7	Profile: Trinity Consultants.....	1342
1.11.7.18.1	2015 Profile	1342
1.11.19.7	Profile: Advanced Emissions Solutions, Inc.	1350
1.11.20.7	Profile: Anguil Environmental Systems, Inc.	1355
1.11.21.7	Profile: Cambridge Entech.....	1358
1.11.22.7	Normandeau Rides Advanced Technology To Provide Best-In-Class Service In Natural Resources Consulting 1361	
<i>1.11.8</i>	<i>Emissions Trading.....</i>	<i>1369</i>
1.11.1.8	Markets for Emissions Credits Showing Strength On All Fronts.....	1373
1.11.2.8	Pieces in Place for Credits Trading in a “Carbon-Constrained” Future	1380
1.11.3.8	E+Co Sees Carbon Trading as a Tool for Clean Energy to Developing Nations	1389
<i>1.11.9</i>	<i>Asbestos, Toxic Mold & Indoor Air Quality.....</i>	<i>1391</i>
1.11.1.9	Growth Continues in Indoor Air-Quality, But “Toxic” Mold Segment Stumbles.....	1391
1.11.2.9	Asbestos Still Strong For Abscope Environmental; Deep Soil & Sediments.....	1395
<i>1.11.10</i>	<i>Infrastructure Markets for Environmental Companies.....</i>	<i>1399</i>
<i>1.11.11</i>	<i>Contract Operations in Water/Wastewater</i>	<i>1407</i>
1.11.1.11	2004-2005 O&M Report.....	1414
1.11.2.11	USFilter Maintains Confidence In Contract Operations Market.....	1420
1.11.3.11	No Real Bumps In The Road For The Water Industry?	1425
1.11.4.11	Key Trends Shape The Future Of The Water	1431
1.11.5.11	Feature: Black & Veatch Assesses Strategic Direction of Water	1447
1.11.6.11	Profile: GE Water & Process Technologies Drives Growth With Innovation And Keeps Acquisition Pipeline Open.....	1451
1.11.7.11	Profile: Water Master Planning Work Drives Growth For Freese And Nichols	1456
1.11.8.11	CH2M Uses Many Tools To Retain Leadership Position In Water Engineering & Consulting ...	1459
<i>1.11.12</i>	<i>Disaster Response: Hurricanes Katrina And Rita.....</i>	<i>1471</i>
<i>1.11.13</i>	<i>Remediation & Redevelopment Market 2010-2011.....</i>	<i>1476</i>
1.11.1.13	Remediation & Redevelopment in the Challenged Economy	1483
1.11.2.13	EBJ Survey Comments: Challenges for Remediation	1491
1.11.3.13	Brownfields 2011	1493
1.11.4.13	Remediation & Brownfields Overview 2009-2010	1506
1.11.5.13	EPA Cleanup Programs Emphasize Land as an Asset	1511
1.11.6.13	Superfund Winding Down? On The Contrary, Says EPA.....	1516
1.11.7.13	Renova Partners Aligns Stakeholder Interests in Brownfields Work.....	1518
1.11.8.13	TRC: Back-End Remediation Connected to Front-End Development.....	1521
1.11.9.13	LFR: Remediation and Redevelopment Consulting Entails Facilitating the Deal.....	1525
1.11.10.13	Columbia Technologies Sees Solid Growth in Brazil, Pursues More International Expansion	1528
1.11.11.13	In Highly Specialized Niche, PhycoTech Counts on Technology, Client Diversity, and Patience for Future Growth	1532
<i>1.11.14</i>	<i>Rad Waste Management.....</i>	<i>1535</i>
1.11.1.14	Safety and Ecology Pursues Opportunities In Rad-Waste Management.....	1535
<i>1.11.15</i>	<i>Ecological Restoration.....</i>	<i>1539</i>
<i>1.11.16</i>	<i>Homeland Security.....</i>	<i>1542</i>
1.11.1.16	Homeland Security Funds for Engineering, Instruments and Clean Energy	1542
1.11.2.16	Homeland Security Market Takes Shape, But Private Sector Lags Federal Facilities	1550
<i>1.11.17</i>	<i>Outsourcing.....</i>	<i>1558</i>
1.11.1.17	Firms Push Trend to Outsourcing	1558
1.11.2.17	C&E Firms Target Design/Build/Operate Projects as Outsourcing Entry Point	1563
1.11.3.17	Hi-Tech Opportunities in Outsourcing.....	1569
<i>1.11.18</i>	<i>Natural Resource Management.....</i>	<i>1570</i>
1.11.1.18	2014 Overview of NRM Market for C&Es.....	1570
1.11.2.18	2013 Overview of NRM Market for C&Es.....	1579
1.11.3.18	Natural Resource Management: 2010 Review	1590
1.11.4.18	Habitat Restoration	1596
1.11.18.4.1	Fisheries Experts Await 316(b) Driver in U.S.; Globally, Nations Look to Better Manage Fish Resources 1596	
1.11.18.4.2	Funds From BP/Transocean Settlement Start to Flow to Gulf Resoration Projects.....	1607
1.11.18.4.3	EBJ Talks to the Public Sector About Habitat Restoration.....	1615
1.11.18.4.4	Major Trends in Habitat Restoration at Federal Agencies	1616
1.11.18.4.5	National Wildlife Refuge Focuses of Green Infrastructure.....	1618

1.11.18.4.6	Drivers and Challenges in Habitat Restoration.....	1620
1.11.18.4.7	Outsourcing of Habitat Restoration at Federal Agencies.....	1623
1.11.18.4.8	Natural Resources Management Rides High on Energy Development Boom.....	1631
1.11.18.4.9	Stream Rehabilitation: Watershed Management and Restoration.....	1638
1.11.18.4.10	Wetlands Engineering Moves Beyond Mitigation; Designers Stay With Projects.....	1644
1.11.18.4.11	Florida’s Everglades.....	1650
1.11.5.18	Reclamation and Restoration in Mining Industry.....	1656
1.11.18.5.1	Market Drives Reclamation in the Mining Industry.....	1657
1.11.18.5.2	Outsourcing Reclamation in the Mining Industry.....	1658
1.11.18.5.3	Best Practices in Mining Reclamation or What the States Want to See.....	1660
1.11.18.5.4	In California Younger Mines Drive Reclamation.....	1661
1.11.18.5.5	Lafarge Makes Biodiversity the Central Goal of Reclamation.....	1663
1.11.6.18	Measuring Ecosystem Services.....	1665
1.11.7.18	Natural Resources & Energy Development.....	1670
1.11.8.18	NRM Profile: Jones & Stokes.....	1673
1.11.9.18	NRM Profile: David Evans and Associates, Inc. (DEA).....	1676
1.11.10.18	Profile: Aarcher, Inc.	1682
1.11.11.18	NRM Profile: JFNew (acquired by Cardno in 2011).....	1688
1.11.12.18	NRM Profile: SWCA Environmental Consultants.....	1697
1.11.13.18	NRM Profile: Kleinschmidt.....	1700
1.11.14.18	NRM Profile: NRG.....	1705
1.11.15.18	NRM Profile: Ornicept.....	1708
1.11.16.18	NRM Profile: Mason, Bruce, & Girard.....	1712
1.11.17.18	NRM Profile: The Westervelt Company.....	1715
1.11.18.18	NRM Profile: ARCADIS.....	1720
1.11.19.18	Profile: Parametrix.....	1728
1.11.20.18	Urban Planning.....	1731
1.11.21.18	Fisheries Management Work Mixes Planning with Restoration.....	1740
1.11.19	<i>Cultural Resources</i>	1747
1.11.1.19	Q&A: Christopher Dore.....	1747
1.11.2.19	Q&A: CRM Leader SEARCH.....	1755
1.11.3.19	Overview.....	1764
1.11.20	<i>Environmental Information Systems</i>	1769
1.11.1.20	Instruments & Information Technology Coming of Age.....	1769
1.11.2.20	Enviance On Forefront Of Reliance On “Software As A Service” Model To Deliver Ehs Management Solutions.....	1776
1.11.3.20	Profile: Promium LLC.....	1780
1.11.20.3.1	Q&A: Scot Cocanour.....	1780
1.11.4.20	Profile: 3E Company.....	1783
1.11.20.4.1	Q&A: Uday Virkud.....	1783
1.11.5.20	Profile: Locus Technologies.....	1787
1.11.20.5.1	Q&A: Neno Duplan.....	1787
1.11.21	<i>By-Products Reuse</i>	1795
1.11.22	<i>Pollution Prevention</i>	1800
1.11.23	<i>Green Design</i>	1805
1.11.1.23	Tighe & Bond Focus on Growth in Green Design.....	1805
1.11.2.23	Green Buildings.....	1806
1.11.24	<i>Environmental, Health & Safety Services (EH&S)</i>	1809
1.11.1.24	Keys to EH&S Service Firm Success in The 21st Century.....	1809
1.11.25	<i>Positive Outlook In Solid Waste</i>	1813
1.11.26	<i>Profiles of Consulting Firms in Solid Waste Management</i>	1816
1.11.27	<i>SCS Engineers</i>	1816
1.11.1	<i>WIH Resource Group</i>	1819
1.1	PROFILES OF SELECTED LARGE FIRMS.....	1823
1.1.1	<i>Ramboll Group A/S</i>	1823
1.1.1.1	Q&A: Jens-Peter Saul.....	1823
1.1.2	<i>AECOM</i>	1828
1.1.1.2	AECOM: Q&A in 2014.....	1828
1.1.2.2	AECOM: Q&A in 2011.....	1835

1.1.3.2	AECOM Q&A in 2010	1844
1.1.4.2	AECOM in 2008	1851
1.1.5.2	ENSR (2003 Q&A).....	1856
<i>1.1.3</i>	<i>Stantec: 2011</i>	<i>1863</i>
1.1.1.3	Stantec: 2005	1867
<i>1.1.4</i>	<i>URS Corp.</i>	<i>1871</i>
<i>1.1.5</i>	<i>Golder: 2011</i>	<i>1873</i>
1.1.1.5	Golder Award.....	1878
<i>1.1.6</i>	<i>ERM</i>	<i>1878</i>
1.1.1.6	Q&A: John Alexander.....	1878
1.1.2.6	ERM: 2011.....	1884
1.1.3.6	ERM: 2008.....	1888
<i>1.1.7</i>	<i>Tetra Tech</i>	<i>1908</i>
1.1.1.7	2010 Performance & Acquisitions	1912
1.1.2.7	Foster Wheeler (acq'd by Tetra Tech in 2003)	1914
<i>1.1.8</i>	<i>GENIVAR</i>	<i>1920</i>
<i>1.1.9</i>	<i>ENVIRON Corp.</i>	<i>1921</i>
<i>1.1.10</i>	<i>Weston Solutions</i>	<i>1925</i>
1.1.1.10	Weston Solutions in 2005	1929
<i>1.1.11</i>	<i>Parsons Brinckerhoff</i>	<i>1932</i>
<i>1.1.12</i>	<i>ICF International</i>	<i>1936</i>
1.1.1.12	Q&A: Mark Lee.....	1936
1.1.2.12	ICF International in 2011.....	1943
1.1.3.12	ICF International in 2006.....	1947
<i>1.1.13</i>	<i>Parsons Corp.</i>	<i>1948</i>
<i>1.1.14</i>	<i>Sinclair Knight Merz (SKM)</i>	<i>1951</i>
<i>1.1.15</i>	<i>SLR Consulting</i>	<i>1955</i>
<i>1.1.16</i>	<i>AEA Technology</i>	<i>1959</i>
1.1.1.16	AEA Technology Enters U.S. Market By Acquisition	1962
<i>1.1.17</i>	<i>RSK Group</i>	<i>1966</i>
<i>1.1.18</i>	<i>Haley & Aldrich</i>	<i>1970</i>
<i>1.1.19</i>	<i>Black & Veatch</i>	<i>1972</i>
<i>1.1.20</i>	<i>Kleinfelder 2011</i>	<i>1979</i>
1.1.1.20	Kleinfelder 2008	1984
<i>1.1.21</i>	<i>Battelle Memorial Institute</i>	<i>1987</i>
<i>1.1.22</i>	<i>ARCADIS</i>	<i>1991</i>
1.1.1.22	Malcolm Pirnie (acquired by ARCADIS)	1995
1.1.2.22	ARCADIS acquisition of BBL.....	1998
<i>1.1.23</i>	<i>Waste Management</i>	<i>2002</i>
<i>1.1.24</i>	<i>AMEC Earth & Environmental</i>	<i>2003</i>
<i>1.1.25</i>	<i>Mactec (acquired by AMEC in 2011)</i>	<i>2008</i>
<i>1.1.26</i>	<i>The Shaw Group Inc.</i>	<i>2012</i>
<i>1.1.27</i>	<i>SAIC</i>	<i>2016</i>
1.1.1.27	SAIC Natural Resources Practice	2019
<i>1.1.28</i>	<i>HNTB</i>	<i>2024</i>
1.1.1.28	HNTB 2007.....	2030
<i>1.1.29</i>	<i>TRC Companies, Inc.</i>	<i>2037</i>
1.1.1.29	Q&A: Chris Vincez.....	2038
<i>1.1.30</i>	<i>HDR Inc.</i>	<i>2044</i>
<i>1.1.31</i>	<i>CH2M Hill</i>	<i>2050</i>
1.1.1.31	CH2M Hill: Solid Waste Practice	2056
<i>1.1.32</i>	<i>CDM (Camp Dresser & McKee)</i>	<i>2062</i>
<i>1.1.33</i>	<i>The Washington Group</i>	<i>2065</i>
<i>1.1.34</i>	<i>Atkins plc</i>	<i>2070</i>
<i>1.1.35</i>	<i>MWH Global</i>	<i>2073</i>
1.2	PROFILES OF MID-SIZED C&E FIRMS	2079
1.2.1	Volkert, Inc.	2079

1.2.2	<i>Woodard & Curran Inc.</i>	2084
1.2.1.2	Q&A: Doug McKeown.....	2084
1.2.3	<i>David Evans and Associates, Inc.</i>	2088
1.2.4	<i>Michael Baker Corp.</i>	2092
1.2.5	<i>Pennoni Associates, Inc.</i>	2096
1.2.6	<i>GZA GeoEnvironmental</i>	2099
1.2.7	<i>Barr Engineering Co.</i>	2103
1.2.8	<i>Weston & Sampson</i>	2106
1.2.9	<i>Apex Companies LLC</i>	2109
1.2.10	<i>Cardno Ltd.</i>	2112
1.2.11	<i>Enhesa S.A. (Brussels, Belgium)</i>	2113
1.2.12	<i>WSP Environment & Energy</i>	2113
1.2.13	<i>U.S. Laboratories (acq'd by Bureau Veritas)</i>	2124
1.2.14	<i>WRSCompass</i>	2129
1.2.1.14	Compass Environmental.....	2130
1.2.2.14	WRS Infrastructure & Environment.....	2131
1.2.15	<i>Kennedy/Jenks Consultants</i>	2131
1.2.16	<i>Fuss & O'Neill</i>	2135
1.2.17	<i>Ecology and Environment, Inc.</i>	2139
1.2.18	<i>POWER Engineers</i>	2139
1.2.19	<i>EnSafe: 2011 Q&A</i>	2140
1.2.20	<i>Groundwater & Environmental Services: 2011 Q&A</i>	2145
1.2.1.20	Groundwater & Environmental Services 2008.....	2154
1.2.21	<i>EA Engineering, Science, and Technology</i>	2158
1.2.1.21	Q&A: Michael Battle.....	2162
1.2.22	<i>Natural Resource Group, Inc. (Acquired by Stantec)</i>	2169
1.2.23	<i>Jones & Stokes (acq'd by ICF)</i>	2171
1.2.24	<i>The Cadmus Group, Inc.</i>	2172
1.2.25	<i>Geotechnology Inc.</i>	2175
1.2.26	<i>Hull & Associates</i>	2178
1.2.27	<i>Gannett-Fleming</i>	2182
1.2.1.27	Gannett-Fleming 2005.....	2186
1.2.28	<i>Tighe & Bond</i>	2189
1.2.1.28	Tighe & Bond in 2014.....	2189
1.2.2.28	Tighe & Bond in 2008.....	2193
1.2.29	<i>Hart Crowser</i>	2196
1.2.30	<i>RETEC Inc.</i>	2199
1.2.31	<i>David Evans Associates</i>	2204
1.2.32	<i>RMT Inc.</i>	2209
1.2.33	<i>Langan Engineering and Environmental Services</i>	2213
1.2.34	<i>Normandeau Associates</i>	2217
1.2.35	<i>Birdsall Services Group</i>	2220
1.2.36	<i>GeoEngineers</i>	2222
1.2.37	<i>GRAEF</i>	2223
1.2.38	<i>Hargrove Engineers + Constructors</i>	2225
1.2.39	<i>H&A Architects & Engineers</i>	2226
1.2.40	<i>SWCA Environmental Consultants</i>	2227
1.2.1.40	Q&A: John Thomas.....	2228
1.2.41	<i>Short Elliott Hendrickson Inc.</i>	2234
1.2.42	<i>Dynamac Corp.</i>	2237
1.2.43	<i>Roux Associates</i>	2240
1.2.44	<i>O'Brien & Gere</i>	2244
1.2.45	<i>S&ME</i>	2248
1.2.46	<i>Barr Engineering Co.</i>	2252
1.2.47	<i>Boyle Engineering Corp.</i>	2256
1.2.48	<i>Antea Group</i>	2260

1.2.1.48	Delta Environmental Consultants (Antea in 2011)	2263
1.2.49	Geosyntec Consultants	2267
1.2.50	Cape Environmental Management Inc.	2271
1.2.51	Clayton Group Services	2274
1.2.52	SCS Engineers	2277
1.2.53	Versar Inc.	2280
1.2.54	Komex (acquired by WorleyParsons in 2006)	2286
1.2.55	R. W. Beck Inc. (acquired by SAIC in 2009)	2290
1.2.56	TerranearPMC	2294
1.2.57	Los Alamos Technical Associates Inc. (LATA)	2298
1.2.58	ET Environmental Corp.	2302
1.2.59	Carollo Engineers	2307
1.2.60	PBS&J (acquired by Atkins in 2011)	2310
1.2.61	Geomatrix Consultants	2313
1.2.62	ENVIRON	2317
1.2.63	V3 Companies	2321
1.2.64	TechLaw	2325
1.3	PROFILES OF SMALL C&E FIRMS	2326
1.3.1	E2 ManageTech	2326
1.3.2	Anthesis Group	2329
1.3.3	BBJ Group	2334
1.3.1.3	Q&A: Andy Bajorat	2334
1.3.4	Cumming	2336
1.3.1.4	Q&A: Pete Heald	2336
1.3.5	Gateway Engineers	2337
1.3.1.5	Q&A: Jason Jesso	2337
1.3.6	Wolverton & Associates	2339
1.3.1.6	Q&A: Joe Macrina	2339
1.3.7	Integral Consulting, Inc.	2341
1.3.1.7	Q&A: Larry Marx	2341
1.3.8	Resource Environmental Sollutions, L.L.C.	2347
1.3.1.8	Q&A: Elliot Bouillion	2347
1.3.9	Tectonic Engineering and Surveying Consultants	2352
1.3.1.9	Q&A: Peter Sutherland	2352
1.3.10	Wright-Pierce	2359
1.3.11	Environmental Science Associates	2362
1.3.1.11	ESA Rides the Wave in “Natural Systems Engineering”	2362
1.3.2.11	ESA Acquires Philip Williams	2367
1.3.12	Brisea	2371
1.3.13	EMPSi	2371
1.3.1.13	Q&A: David Batts	2376
1.3.14	EBI Consulting Inc.	2379
1.3.15	EnviroTrac Ltd.	2383
1.3.16	W&M Environmental	2386
1.3.17	Sanborn, Head & Associates	2389
1.3.18	Hard Hat Services	2393
1.3.19	Sovereign Consulting	2394
1.3.20	Chambers Group	2399
1.3.1.20	Chambers Group Q&A	2399
1.3.21	Dade Moeller & Associates	2411
1.3.22	Trihydro Corp.	2412
1.3.23	McKim & Creed	2412
1.3.24	Mabbett & Associates	2413
1.3.25	Marstel-Day LLC	2413
1.3.1.25	Q&A: Rebecca Rubin	2413
1.3.26	ES&H Inc.	2420

1.3.27	<i>The Phylmar Group</i>	2421
1.3.28	<i>Sullivan International Group</i>	2422
1.3.29	<i>Parametrix</i>	2423
1.3.30	<i>Statistical Research, Inc</i>	2426
1.3.31	<i>KCI Technologies</i>	2436
1.3.32	<i>Mead & Hunt Inc.</i>	2439
1.3.33	<i>Trinity Consultants</i>	2444
1.3.34	<i>Benchmark Environmental Consultants</i>	2447
1.3.35	<i>The SI Group</i>	2450
1.3.36	<i>EORM</i>	2453
1.3.1.36	EORM in 2009.....	2456
1.3.2.36	EORM Inc. 2006.....	2461
1.3.37	<i>Treadwell & Rollo (acquired by Langan in 2010)</i>	2464
1.3.38	<i>Millennium Science & Engineering Inc.</i>	2468
1.3.39	<i>Winzler & Kelly Consulting Engineers</i>	2472
1.3.40	<i>PMC</i>	2475
1.3.41	<i>Vertical V</i>	2481
1.3.42	<i>Coto Consulting Inc.</i>	2488
1.3.43	<i>Holguin, Fahan & Associates Inc.</i>	2488
1.3.44	<i>H2M Group</i>	2492
1.3.45	<i>Lincoln Environmental Inc.</i>	2495
1.3.46	<i>Schoor de Palma</i>	2498
1.3.47	<i>Stewart Environmental Consultants Inc.</i>	2501
1.3.48	<i>INTERA Inc.</i>	2504
1.3.49	<i>Environmental Consulting & Technology</i>	2509
1.3.1.49	Q&A: Robert Kloepfer.....	2511
1.3.50	<i>Smith Environmental Management</i>	2518
1.3.51	<i>Environmental Science Associates</i>	2522
1.3.52	<i>Dahl & Associates</i>	2525
1.3.53	<i>Erler & Kalinowski</i>	2528
1.3.54	<i>Kemron</i>	2531
1.3.55	<i>Lexicon</i>	2534
1.3.56	<i>Applied Earth Sciences</i>	2537
1.4	CONCLUSIONS.....	2540

List of Exhibits

Exhibit 1-1	The Global Environmental Market by Segment: USA Share in 2015.....	27
Exhibit 1-2	Environmental Industry Segments.....	28
Exhibit 1-3	Environmental Industry Segments and Numbers of Companies: USA.....	29
Exhibit 1-4	The U.S. Environmental Industry 2006-2011 (\$bil).....	30
Exhibit 1-5	The U.S. Environmental Industry in 2012-2014 (\$bil).....	31
Exhibit 1-6	The U.S. Environmental Industry: Share of Small Companies 2015.....	32
Exhibit 1-7	The U.S. Environmental Industry: Segment Detail 2013-2015.....	33
Exhibit 1-8	Jobs in the U.S. Environmental Industry 2010-2015.....	34
Exhibit 1-9	The U.S. Environmental Industry by Decade: 1970-2010.....	35
Exhibit 1-10	The U.S. Environmental Industry 2014.....	36
Exhibit 1-11	The U.S. Environmental Industry 2015.....	36
Exhibit 1-12	U.S. Environmental Industry Segments by Competitor 2013.....	37
Exhibit 1-13	U.S. Environmental Industry and Forecast: 2013-2018.....	38
Exhibit 1-14	U.S. Environmental Industry Segments by Customer Type 2015.....	39
Exhibit 1-15	U.S. Environmental Industry Revenues from Industry Clients.....	40
Exhibit 1-16	Historical Growth of the U.S. Environmental and C&E Industry, 1992 – 2013.....	41

Exhibit 1-17	Environmental Market Trends 2014-16.....	42
Exhibit 1-18	Ranking of Environmental Industry Client Sectors in 2013 & 2014	44
Exhibit 1-18	Ranking of Environmental Industry Client Sectors in 2016-2017	45
Exhibit 1-19	Client Sectors Rated by 2011 Survey Respondents for Growth in 2011-2013	46
Exhibit 1-20	2008: Best Rated Client Markets for Growth	47
Exhibit 1-21	Customer Markets Ranked for 2009-2010.....	48
Exhibit 1-23	Ranking of Growth Prospects by Service/Media Category: 2016-2017.....	51
Exhibit 1-22	Service Categories Rated by Growth by Survey Respondents in 2009	52
Exhibit 1-23	Ranking of Growth Prospects by Service/Media Category: 2013-2014.....	53
Exhibit 1-24	Service Sectors Rated by Survey Respondents for Growth in 2010-2012	54
Exhibit 1-25	USA Geographic Regions Rated by Respondents for Growth in 2011-2013.....	55
Exhibit 1-26	Geographic Regions Rated by Survey Respondents for Growth in 2010-2012	55
Exhibit 1-25	USA Geographic Regions Rated by Respondents for Growth in 2016-2017.....	56
Exhibit 1-27	U.S. Environmental Industry vs. U.S. GDP Growth.....	57
Exhibit 1-28	Historical and Projected Size of U.S. Environmental Industry.....	57
Exhibit 1-29	Historical Growth of the U.S. Environmental Industry, 1992 – 2015.....	60
Exhibit 1-30	U.S. Environmental Industry: Revenues by Function 2013	64
Exhibit 1-31	U.S. Environmental Industry: Revenues by Function 1997-2011.....	65
Exhibit 1-31	U.S. Environmental Industry: Revenues by Function 2011-2015.....	65
Exhibit 1-32	U.S. Environmental Industry: Revenues by Media in 2013	66
Exhibit 1-33	Historical and Projected Growth in the Environmental Industry in Services, Equipment and Resources, 1970-2020.....	66
Exhibit 1-34	Historical and Projected Growth in the Environmental Industry in Infrastructure & Non- Infrastructure Segments, 1970-2020	67
Exhibit 1-35	How Goes the Recovery as of Mid-Year 2013	69
Exhibit 1-49	The U.S. Environmental Industry 2010-2012.....	72
Exhibit 1-50	Historical and Projected Growth in Environmental Consulting & Engineering	73
Exhibit 1-51	Environmental Consulting and Engineering: Annual Growth Rate, 1975 - 2014.....	76
Exhibit 1-52	Environmental Market Trends 2014-16.....	79
Exhibit 1-53	U.S. GDP Growth vs. Environmental Industry Growth, 1970-2014.....	88
Exhibit 1-54	U.S. Environmental Industry Revenues by Function, 2013	90
Exhibit 1-55	Share of U.S. Environmental Industry Revenues by Function, 1997-2013.....	90
Exhibit 1-36	Key 2015 Forecast Elements	106
Exhibit 1-37	Environmental Services: 4 Key Growth Factors in 2000s	106
Exhibit 1-38	Environmental C&E Industry vs. GDP Growth: 1991-2015	107
Exhibit 1-39	Average Annual Growth in Environmental Services Firms	108
Exhibit 1-40	Ranking of Environmental Industry Client Sectors in 2015-16	108
Exhibit 1-41	Average Operating Margin: 2009-2014.....	109
Exhibit 1-42	Change in Operating Margin From 2013-2014.....	109
Exhibit 1-43	Ranking of Growth Prospects by Service/Media Category: 2015-16	110
Exhibit 1-44	Ranking of Growth Prospects by N.A. Geographic Region: 2015-16	110
Exhibit 1-45	Ranking of Growth Prospects by Geographic Region: 2015-16.....	111
Exhibit 1-46	Hot & Cold: 2015 Market Attractiveness	111
Exhibit 1-47	Expected Oil Price Range in Q4 2015	112
Exhibit 1-48	Oil & Gas Outlook 2015.....	112
Exhibit 1-48	Revenue Performance of U.S. Environmental C&E Firms by Size in 2014-2015 (\$mil)	123
Exhibit 1-61	Revenue Performance of U.S. Environmental C&E Firms by Size in 2013 (\$mil)	124
Exhibit 1-57	U.S. Environmental C&E Market 2004-2013.....	124
Exhibit 1-58	Share of International Revenues Derived by U.S. C&E Firms	125
Exhibit 1-64	Annual Size and Growth of U.S. C&E Industry: 1995-2017.....	125
Exhibit 1-65	Top U.S. Environmental C&E Firms in 2013.....	126
Exhibit 1-66	Top U.S. Environmental C&E Firms in 2015.....	127
Exhibit 1-61	Consolidation of U.S. C&E Industry 1990-2015.....	134
Exhibit 1-62	U.S. GDP Growth vs. Environmental C&E Industry Growth, 1989-2014e (forecast from 2011)	144

Exhibit 1-63	Client Sectors Rated by Survey Respondents for Growth in 2010.....	168
Exhibit 1-64	Client Sectors Rated by Survey Respondents for Growth in 2011-2012	169
Exhibit 1-65	Service Sectors Rated by Survey Respondents for Growth in 2010	170
Exhibit 1-66	Service Sectors Rated by Survey Respondents for Growth in 2011-2012	171
Exhibit 1-67	USA Geographic Regions Rated by Respondents for Growth in 2010.....	172
Exhibit 1-68	USA Geographic Regions Rated by Respondents for Growth in 2011-2013	172
Exhibit 1-69	Geographic Regions Rated by Survey Respondents for Growth in 2010	173
Exhibit 1-70	Geographic Regions Rated by Survey Respondents for Growth in 2011-2012	173
Exhibit 1-71	The U.S. Environmental Industry 2008-2010.....	179
Exhibit 1-72	Client Sectors Rated in 2011 Compared to 2010.....	184
Exhibit 1-73	Client Sectors Rated by Survey Respondents in 2009	185
Exhibit 1-74	Client Sectors Rated by Survey Respondents in 2009 for 2010-2012	186
Exhibit 1-75	Service & Media Sectors Rated by Survey Respondents for 2009 Growth	187
Exhibit 1-76	Service Sectors Rated by Survey Respondents for Growth in 2010-2012	188
Exhibit 1-77	Best Client Sectors Rated by Survey Respondents in 2006 and 2007	198
Exhibit 1-78	Service Sectors Rated by Survey Respondents in 2007.....	201
Exhibit 1-79	Geographic Regions Rated by Survey Respondents in 2007	204
Exhibit 1-80	Geographic Regions Rated by Survey Respondents in 2007	205
Exhibit 1-81	The US C&E Industry: Average Profitability vs. Industry Growth, 1995 - 2012	223
Exhibit 1-82	Average Profitability of U.S. C&E Market, 1999 - 2010	223
Exhibit 1-83	Distribution of Environmental Consulting & Engineering Firms in 2013	228
Exhibit 1-84	Distribution of Environmental Consulting & Engineering Firms in 2012	228
Exhibit 1-85	Distribution of Environmental Consulting & Engineering Firms in 2010	228
Exhibit 1-86	Revenue Distribution of U.S. C&E Market, 2009	228
Exhibit 1-87	Revenue Distribution of U.S. C&E Market, 2008	229
Exhibit 1-88	Revenue Distribution of U.S. C&E Market, 2007	229
Exhibit 1-89	Revenue Distribution of U.S. C&E Market, 2005-2006.....	229
Exhibit 1-90	Consolidation of U.S. C&E Market, 1990-2013.....	229
Exhibit 1-91	U.S. C&E Companies' International Revenues, 1996 - 2013	230
Exhibit 1-92	U.S. C&E Market by Media Type, 2004-2014e	242
Exhibit 1-93	U.S. C&E Industry: Median Profit Margin 1996 - 2013 (\$Million).....	245
Exhibit 1-94	EFCG Zofnass Happiness Quotient: 1996-2014.....	248
Exhibit 1-95	Environmental Consulting and Engineering: Annual Growth Rate, 1975 - 2012	252
Exhibit 1-96	U.S. C&E Market by Customer, 2009	253
Exhibit 1-97	Environmental Consulting & Engineering Market by Client, 2014	254
Exhibit 1-98	Environmental Consulting & Engineering Market by Client, 2013	254
Exhibit 1-99	Environmental Consulting & Engineering Market by Client, 2012	255
Exhibit 1-100	Environmental Consulting & Engineering Market by Client, 2011.....	255
Exhibit 1-101	Environmental Consulting & Engineering Market by Client, 2010.....	256
Exhibit 1-102	Environmental Consulting & Engineering Market by Client, 2009.....	256
Exhibit 1-103	Environmental Consulting & Engineering Market by Client, 2008.....	256
Exhibit 1-104	Environmental Consulting & Engineering Market by Client, 2003.....	257
Exhibit 1-105	Environmental Consulting & Engineering Market by Client, 1999.....	258
Exhibit 1-106	Environmental Consulting & Engineering Market by Media, 2010	258
Exhibit 1-107	Environmental Consulting & Engineering Market by Media, 2008	259
Exhibit 1-108	Environmental Consulting & Engineering Market by Media, 2003	259
Exhibit 1-109	Environmental Consulting & Engineering Market by Media, 1999	260
Exhibit 1-110	Environmental Consulting & Engineering Market by Service, 2012	260
Exhibit 1-111	Environmental Consulting & Engineering Market by Service, 2010	261
Exhibit 1-112	Environmental Consulting & Engineering Market by Service, 2008	261
Exhibit 1-113	Environmental Consulting & Engineering Market by Service, 2003	262
Exhibit 1-114	Environmental Consulting & Engineering Market by Service, 1999	262
Exhibit 1-115	Environmental Consulting and Engineering Client Categories	266
Exhibit 1-116	U.S. C&E Market by Customer, 2010-2018 Forecast.....	267
Exhibit 1-117	U.S. C&E Market by Customer 1998 - 2008 (\$Million)	268

Exhibit 1-120	Distribution of U.S. Environmental Consulting & Engineering Firms in 2015	268
Exhibit 1-120	Distribution of U.S. Environmental Consulting & Engineering Firms in 2014	269
Exhibit 1-120	Distribution of U.S. Environmental Consulting & Engineering Firms in 2013	269
Exhibit 1-121	Distribution of U.S. Environmental Consulting & Engineering Firms in 2012	269
Exhibit 1-122	The C&E Market by Firm Type 2011-2013	270
Exhibit 1-123	The C&E Market by Firm Type 2009-2010	270
Exhibit 1-124	The C&E Market by Firm Type 2000-2008	270
Exhibit 1-125	The C&E Market by Firm Type 1997 – 2001	270
Exhibit 1-126	Public and Private Sector Shares of the C&E Market, 1995	271
Exhibit 1-127	Public Sector Markets for C&E Services, 2001, 2004, 2008, 2010, 2012-14	272
Exhibit 1-128	Private Sector Markets for C&E Services, 2001, 2004, 2008, 2012-14	285
Exhibit 1-129	Environmental Industry Segment Interactions	289
Exhibit 1-130	Environmental Industry Segments	290
Exhibit 1-131	U.S. C&E Market by Service Type, 1997 – 2015e	294
Exhibit 1-132	U.S. C&E Market by Media Type, 2010-2017e	299
Exhibit 1-133	U.S. C&E Market by Media Type, 1997-2008	299
Exhibit 1-134	Total Market for C&E Services (By Media), 2001, 2004, 2008, 2010 and 2012	301
Exhibit 1-136	Markets for Environmental C&E Services by EPA Region	305
Exhibit 1-137	Clean Jobs by State/by Population, 2013	305
Exhibit 1-138	U.S. Environmental Consulting & Engineering By State: 2006 (\$ mil)	306
Exhibit 1-139	State Markets for Environmental C&E Services by Media in 2006	309
Exhibit 1-140	State Markets for Environmental C&E Services by Media in 2010	311
Exhibit 1-141	EFCG: Performance of E/C Firms by Region: 2003-2010	312
Exhibit 1-142	Percentage Growth of Environmental C&E Markets: 2014-2015	312
Exhibit 1-143	Growth of Environmental C&E Markets, 2010 – 2015e	315
Exhibit 1-150	Revenue Performance of U.S. Environmental Consulting & Engineering Firms in 2013-2015 355	
Exhibit 1-158	Top 5 & 10 U.S. Environmental C&E Firms (Gross Environmental C&E Revenues in \$mil) 357	
Exhibit 1-158	Marketshare of Top U.S. C&E Firms by Size Category: 2000-2015	357
Exhibit 1-160	Top U.S. Environmental C&E Firms in 2015	360
Exhibit 1-144	Growth of Environmental C&E Markets by Media, 2004-2018e	370
Exhibit 1-145	Growth of Environmental C&E Markets by Service, 2010-2018e	373
Exhibit 1-155	2014 U.S. C&E Market Matrix by Media by Service (\$mil)	375
Exhibit 1-146	2012 U.S. C&E Market Matrix by Media by Service (\$mil)	376
Exhibit 1-147	2010 U.S. C&E Market Matrix by Media by Service (\$mil)	376
Exhibit 1-148	2006 U.S. C&E Market Matrix by Media by Service (\$mil)	377
Exhibit 1-149	U.S. Environmental Industry Segments by Customer Type, 2012	382
Exhibit 1-150	U.S. Environmental Industry Revenue from Manufacturing Industry by Media	383
Exhibit 1-151	Manufacturing Industries' Pollution Control Expenditures and Emissions, 1988-1992	384
Exhibit 1-152	Manufacturing Industry Top Spenders on Pollution Abatement, 1992	385
Exhibit 1-153	Manufacturing Industry Top Spenders on Pollution Abatement, 1993	386
Exhibit 1-154	Manufacturing Industry Top Spenders on Pollution Abatement, 1994	387
Exhibit 1-155	The Global Environmental Market (\$Billion U.S.): All Segments	432
Exhibit 1-156	The Global Consulting & Engineering Market 2003-2009 (\$bil)	432
Exhibit 1-157	International Breakdown of U.S. C&E Firm Revenues (\$mil) 2009-2015	433
Exhibit 1-158	The Global Environmental Market 1993-2010 (\$Bil)	435
Exhibit 1-159	2008 US Environmental Industry Exports	435
Exhibit 1-160	Global Environmental Industry Trade Flows	436
Exhibit 1-161	The Global Consulting & Engineering Market (\$Mil) 2003-2012	437
Exhibit 1-162	Global Environmental Market by Region, 2013e	446
Exhibit 1-163	Global Environmental Market by Region, 2012	446
Exhibit 1-164	Global Environmental Market by Region, 2011	447
Exhibit 1-165	Global Environmental Market by Region, 2010	447
Exhibit 1-166	U.S. Environmental Trade Balance, 2013	449

Exhibit 1-167	U.S. Environmental Trade Balance, 2012.....	450
Exhibit 1-168	U.S. Environmental Trade Balance, 2011.....	450
Exhibit 1-169	U.S. Environmental Trade Balance, 2010.....	451
Exhibit 1-170	U.S. Environmental Trade Balance, 2009.....	451
Exhibit 1-171	U.S. Environmental Industry Exports Performance, 1990 - 2009.....	452
Exhibit 1-172	Companies and Exporters in the U.S. Environmental Industry.....	452
Exhibit 1-173	International Revenues of U.S. Environmental C&E Firms by Size.....	452
Exhibit 1-174	Environmental Markets in Asia-Pacific, 2001-2010 & 2013.....	454
Exhibit 1-175	Consulting and Engineering Markets in Asia-Pacific, (\$bil) 2003-2009.....	454
Exhibit 1-176	Environmental Markets in Latin America, 2001 – 2010 & 2013.....	455
Exhibit 1-177	Consulting & Engineering Markets in Latin America (\$bil) 2003-2009.....	455
Exhibit 1-178	Environmental Markets in Western Europe, 2001 – 2010 & 2013.....	455
Exhibit 1-179	Consulting & Engineering Markets in Western Europe (\$bil) 2003-2009.....	456
Exhibit 1-180	Environmental Markets in Middle East, 2013.....	456
Exhibit 1-181	Environmental Markets in Africa, 2013.....	456
Exhibit 1-182	Environmental Industry Competitiveness.....	460
Exhibit 1-183	Environmental Consulting and Engineering Firms in Chile in 2010.....	472
Exhibit 1-184	Foreign Leaders in Chilean Environmental C&E.....	474
Exhibit 1-185	UK Environmental Consultancy Market Revenues and Annual Growth 2003-2014e.....	511
Exhibit 1-186	Top 12 in Global Environmental Consulting.....	512
Exhibit 1-187	Regional Leadership in Global Environmental Consulting.....	513
Exhibit 1-188	Market Share by Service Category in Global Environmental Consulting.....	517
Exhibit 1-189	ERM Services: Global Distribution.....	529
Exhibit 1-190	Margin Performance Change: 2010 to 2011.....	586
Exhibit 1-191	CEO Priorities and Concerns, 2006.....	598
Exhibit 1-192	C&E Firm Management Priorities.....	610
Exhibit 1-193	Environmental C&E Growth and Profitability by Size.....	612
Exhibit 1-194	Environmental C&E Growth and Profitability by Size.....	613
Exhibit 1-195	Environmental C&E Revenue Growth by Firm Type.....	613
Exhibit 1-196	Selected Financial Statistics 1995-2001.....	614
Exhibit 1-197	Selected Financial Statistics 1993 and 1996.....	615
Exhibit 1-198	Selected Financial Statistics 1993 and 1996.....	616
Exhibit 1-199	Overhead Costs as a Percentage of Net Revenues.....	616
Exhibit 1-200	Implementation of Cost Cutting Measures.....	617
Exhibit 1-201	Average C&E Industry Pay Raises.....	617
Exhibit 1-202	Short Term Tactical Planning Priorities.....	618
Exhibit 1-203	Midterm Strategic Planning Priorities.....	619
Exhibit 1-204	Contract & Pricing Approaches.....	621
Exhibit 1-205	A/E Principals' Base Salary (medians).....	644
Exhibit 1-206	Effectiveness of Recruitment Sources (Rated 1-10, 10 being highest).....	653
Exhibit 1-207	Difficulty of Recruiting Staff (Rated 1-10, 10 being highest).....	654
Exhibit 1-208	Historical Personnel Analysis: Compensation 2000-2006.....	654
Exhibit 1-209	Effectiveness of Staff Retention Strategy (Rated 1-10, 10 being highest).....	654
Exhibit 1-210	Average Yearly Employee Turnover Rates.....	655
Exhibit 1-211	Employee Turnover Analysis.....	655
Exhibit 1-212	Total Marketing Spending as a Percentage of Net Service Revenue, 1998-2003.....	656
Exhibit 1-213	Marketing Expenditure as Percentage of Operating Budget.....	676
Exhibit 1-214	Marketing Practices.....	676
Exhibit 1-215	Marketing Methods and Effectiveness.....	678
Exhibit 1-216	Marketing Structure.....	678
Exhibit 1-217	Marketing Strategy.....	679
Exhibit 1-218	C&E Firms' Market Research Tactics.....	679
Exhibit 1-219	C&E Operations & Service Development.....	680
Exhibit 1-220	13 Steps to Effective Strategic Planning.....	683
Exhibit 1-226	The U.S. Environmental Industry in 5-Year Cycles: 1990-2015 (\$bil).....	727

Exhibit 1-227	First Half M&A Transactions in the AEC Industry, 2012-2016	731
Exhibit 1-228	First Half 2016 Global AEC Deals by Seller Services	732
Exhibit 1-221	EFCG M&A Activity in E/C Firms: 2003 to 2013	808
Exhibit 1-222	Stock Pricing Multiples by Purpose of Value	808
Exhibit 1-223	Environmental Industry M&A Activity: January to August 2014	809
Exhibit 1-224	Distribution of U.S. C&E Market, 2010	816
Exhibit 1-225	Distribution of U.S. C&E Market, 2009	816
Exhibit 1-226	Consolidation of U.S. C&E Market, 1990-2008	816
Exhibit 1-227	Deal Activity in Consulting & Engineering, 2002-2011	819
Exhibit 1-228	Most Active Acquirors in Consulting & Engineering in 2004-2011	819
Exhibit 1-229	Notable C&E Transactions: January 2011 to April 2011	825
Exhibit 1-230	Merger & Acquisition Activity in AEP Firms in the 2006-2010	829
Exhibit 1-231	Distribution of U.S. C&E Market, 2013	845
Exhibit 1-232	Distribution of U.S. C&E Market, 2012	845
Exhibit 1-233	Distribution of U.S. C&E Market, 2011	846
Exhibit 1-234	Distribution of U.S. C&E Market, 2010	846
Exhibit 1-235	Distribution of U.S. C&E Market, 2009	846
Exhibit 1-236	Distribution of U.S. C&E Market, 2008	846
Exhibit 1-237	Distribution of U.S. C&E Market, 2007	847
Exhibit 1-238	Revenue Distribution of U.S. C&E Market, 2005	847
Exhibit 1-239	Revenue Distribution of U.S. C&E Market, 2004	847
Exhibit 1-240	Revenue Distribution of U.S. C&E Market, 2003	848
Exhibit 1-241	Revenue Distribution of U.S. C&E Market, 2002	848
Exhibit 1-242	Revenue Distribution of U.S. C&E Market, 2001	848
Exhibit 1-243	Revenue Distribution of U.S. C&E Market, 1999	849
Exhibit 1-244	Revenue Distribution of the U.S. C&E Market, 1998	849
Exhibit 1-245	M&A Activity in the Environmental C&E Engineering Industry: 2000-2010	850
Exhibit 1-246	20 Representative Deals of Mid-Sized C&E Firms in 2010-2011	864
Exhibit 1-247	EBJ Stock Index- C&E Performance 2/13/07- 2/12/08*	873
Exhibit 1-248	Prominent M&A Activity in the C&E Sector in 2006	880
Exhibit 1-249	Success Rates in M&As for C&E Firms	900
Exhibit 1-250	M&A in Environmental C&E: Selected Deals, 2004	901
Exhibit 1-251	Significant M&A Transactions in 1999 (Revenues of Acquiree in \$Million)	926
Exhibit 1-252	C&E Industry M&A Activity	928
Exhibit 1-253	Top 650 Environmental Consulting & Engineering Firms, 2013 (\$ mil)	935
Exhibit 1-254	Top 650 Environmental Consulting & Engineering Firms, 2012 (\$ mil)	948
Exhibit 1-255	Top 650 Environmental Consulting & Engineering Firms, 2010 (\$ mil)	962
Exhibit 1-256	Top 450 Environmental Consulting & Engineering Firms, 2009 (\$ mil)	976
Exhibit 1-257	Top 200 Environmental Consulting & Engineering Firms, 2008 (\$ mil)	985
Exhibit 1-258	Top Environmental Consulting & Engineering Firms, 2001 – 2004	989
Exhibit 1-259	Top Environmental Consulting & Engineering Firms in 1999: Major Mergers & Acquisitions and Revenue Growth 1995-99	994
Exhibit 1-260	The Top Hazardous Waste Consulting Firms, 2013 (\$ Mil)	997
Exhibit 1-261	The Top Hazardous Waste Consulting Firms, 2010 (\$ Mil)	1000
Exhibit 1-262	The Top Remediation Consulting Firms, 2013 (\$ Mil)	1001
Exhibit 1-263	The Top Remediation Consulting Firms, 2010 (\$ Mil)	1005
Exhibit 1-264	The Top Water Consulting Firms, 2013 (\$ Mil)	1006
Exhibit 1-265	The Top Water Consulting Firms, 2010 (\$ Mil)	1008
Exhibit 1-266	The Top Wastewater Consulting Firms, 2013 (\$ Mil)	1009
Exhibit 1-267	The Top Wastewater Consulting Firms, 2010 (\$ Mil)	1013
Exhibit 1-268	The Top Air Consulting Firms, 2013 (\$ mil)	1014
Exhibit 1-269	The Top Air Consulting Firms, 2010 (\$ mil)	1016
Exhibit 1-270	The Top Solid Waste Consulting Firms, 2013 (Mil)	1017
Exhibit 1-271	The Top Solid Waste Consulting Firms, 2010 (Mil)	1019
Exhibit 1-272	The Top Natural Resources Consulting Firms, 2013 (\$ Mil)	1020

Exhibit 1-273 The Top Natural Resources Consulting Firms, 2010 (\$ Mil).....	1022
Exhibit 1-274 The Top Private Sector C&E Firms, 2013 (\$ Mil)	1022
Exhibit 1-275 The Top Private Sector C&E Firms, 2010 (\$ Mil)	1026
Exhibit 1-276 The Top Public C&E Firms, 2013 (\$ Mil).....	1029
Exhibit 1-277 The Top Public C&E Firms, 2010 (\$ Mil).....	1033
Exhibit 1-278 The Top International C&E Firms, 2013 (\$ Mil).....	1036
Exhibit 1-279 The Top International C&E Firms, 2010 (\$ Mil).....	1037
Exhibit 1-280 The Top International C&E Firms, 2009 (\$ Mil).....	1039
Exhibit 1-281 The Top International C&E Firms, 1999	1041
Exhibit 1-282 U.S. Climate Change Industry Consulting & Engineering Market (\$Mil) 2008-2009	1062
Exhibit 1-283 U.S. Solar Energy Consulting & Engineering and Construction (\$mil).....	1089
Exhibit 1-284 The U.S. C&E Market	1124
Exhibit 1-285 Sustainability Leaders by Market Sector	1128
Exhibit 1-286 EBJ's Top SEM Companies 2007	1134
Exhibit 1-287 Priority Issues for U.S. City Managers: ICMA 2010 Survey	1164
Exhibit 1-288 Sustainability City Actions Taken by City Managers.....	1169
Exhibit 1-289 Energy Actions Taken by City Managers: Efficiency, Renewables, Alternatives	1169
Exhibit 1-290 Components of the Air Consulting Market	1217
Exhibit 1-291 Top Environmental Consulting & Engineering (C&E) Firms Reporting Revenues in Air Quality Consulting Services, 2009	1218
Exhibit 1-292 Global APC Equipment Sales 2017	1250
Exhibit 1-293 Coal: % of Electricity Generation 2000-2050	1252
Exhibit 1-294 2011 Global Air Pollution Control Market (\$bil)	1252
Exhibit 1-295 2014 Expenditures on Global Base of Coal-Fired Power Plants.....	1253
Exhibit 1-296 New Coal-Fired Boilers Starting up in 2017	1253
Exhibit 1-297 Top U.S. Air Quality Environmental Consulting & Engineering Firms in 2012.....	1253
Exhibit 1-298 Global SCR Sales in 2014.....	1263
Exhibit 1-299 Global Trade in APC Equipment in \$ Million: HS code 842139.....	1263
Exhibit 1-300 Global Coal Consumption by Region: 1965-2012	1358
Exhibit 1-301 Where Environmental Companies Have Worked in Infrastructure Market Segments	1405
Exhibit 1-302 Growth Prospects in Infrastructure Market Segments	1406
Exhibit 1-303 U.S. Water/Wastewater Contract Operations: Top Companies 2001-2004	1424
Exhibit 1-310 The U.S. Water Industry 1993-2016 (\$mil)	1426
Exhibit 1-310 Trends in U.S. Water Withdrawals, 1950-2010.....	1427
Exhibit 1-311 Public Supply Withdrawals, 1950-2010	1427
Exhibit 1-313 U.S. Value of Construction Put in Place, 1993-2020e (\$bil)	1428
Exhibit 1-315 Top Global Water Utility Companies (\$bil in 2015).....	1429
Exhibit 1-315 U.S. Wastewater System Summary: 2008.....	1429
Exhibit 1-316 U.S. Wastewater System Summary: 2015.....	1430
Exhibit 1-312 Annual Change in U.S. Wastewater Rates, 2000-2018e	1430
Exhibit 1-314 The U.S. Water Industry, 2014-2016 (\$bil)	1442
Exhibit 1-315 Do You Believe that there is Political Support for Rate Increases to Provide Funding for Investments in Water Infrastructure?	1451
Exhibit 1-304 Brownfields Impacts of House Budget.....	1506
Exhibit 1-305 Homeland Security: Framework of Opportunities	1552
Exhibit 1-306 U.S. Natural Resources Management Revenues: 1997-2015	1576
Exhibit 1-307 U.S. NRM C&E Revenues: Public vs. Private, 2004-2013 (\$mil).....	1577
Exhibit 1-308 Firms in the U.S. Natural Resources Management Industry.....	1577
Exhibit 1-309 Firms in the U.S. Natural Resources Management Industry.....	1578
Exhibit 1-310 Top Natural Resources Management Firms.....	1584
Exhibit 1-311 Core National Ecosystem Extent (Lower 48 States)	1590
Exhibit 1-312 EBJ's Top Consulting & Engineering Firms in Natural Resources 2009.....	1591
Exhibit 1-313 Deepwater Horizon Oil Spill Natural Resource Damage Assessment: Allocation	1614
Exhibit 1-314 Gulf Environmental Restoration Fund Payment Schedule, 2013-2018 (\$mil)	1615
Exhibit 1-315 Most Important Drivers of Habitat Restoration Projects in States	1620

Exhibit 1-316	Habitat Projects in 2014.....	1623
Exhibit 1-317	Outsourced Habitat Projects	1631
Exhibit 1-318	Breakdown of Habitat Restoration Projects in 2014	1631
Exhibit 1-319	Funding Sources for Government Agency Habitat Restoration Projects	1663
Exhibit 1-320	Cost of a Typical Habitat Restoration Project by Stage	1708
Exhibit 1-321	U.S. Heritage Compliance Industry: CRM Industry Size.....	1754
Exhibit 1-322	U.S. Heritage Compliance Industry: Real Growth in %/year	1755
Exhibit 1-323	The U.S. Cultural Resources Management Industry	1755
Exhibit 1-324	AECOM Acquisitions and Affiliate Companies	1834
Exhibit 1-325	EFCG “Hot & Cold” Sector Analysis, 2012-2014 Surveys	2083