

INTRODUCTION .....	XXIV
STUDY GOAL AND OBJECTIVES .....	XXIV
REASONS FOR DOING STUDY .....	XXIV
INTENDED AUDIENCE.....	XXIV
SCOPE OF REPORT .....	XXIV
METHODOLOGY .....	XXV
INFORMATION SOURCES.....	XXV
ANALYST'S CREDENTIALS.....	XXV
RELATED PUBLICATIONS.....	XXVI
BCC ONLINE SERVICES.....	XXVI
DISCLAIMER .....	XXVI
 SUMMARY.....	 XXVII
<i>SUMMARY TABLE VALUE OF THE GLOBAL MARKET FOR OZONE</i> <i>TECHNOLOGY, THROUGH 2012 (\$ MILLIONS)</i> .....	  XXIX
<i>SUMMARY FIGURE VALUE OF THE GLOBAL MARKET FOR OZONE</i> <i>TECHNOLOGY, 2002-2012 (\$ MILLIONS)</i> .....	  XXX
 MARKET AND TECHNOLOGY OVERVIEW .....	 1
MARKET SUMMARY.....	1
<i>TABLE 1 GLOBAL VALUE OF OZONE TECHNOLOGY BY MAJOR</i> <i>APPLICATION CATEGORIES, THROUGH 2012 (\$ MILLIONS)</i> .....	 1
<i>FIGURE 1 GLOBAL VALUE OF OZONE TECHNOLOGY BY MAJOR</i> <i>APPLICATION CATEGORIES, 2002-2012 (\$ MILLIONS)</i> .....	 2
OZONE DEFINED.....	2
<i>FIGURE 2 CHEMICAL STRUCTURE OF OZONE</i> .....	3
CHEMICAL STRUCTURE.....	3
OZONE GENERATION METHODS.....	3
UV .....	3
CORONA DISCHARGE.....	4
COLD PLASMA.....	4
ELECTROLYSIS .....	5
PROPERTIES OF OZONE .....	5
OZONE APPLICATIONS .....	5
<i>TABLE 2 APPLICATIONS OF OZONE TECHNOLOGY</i> .....	6
HOW OZONE WORKS .....	7
DISINFECTION.....	7
Viruses .....	7
<i>TABLE 3 VIRUSES SUSCEPTIBLE TO OZONE</i> .....	8
Bacteria.....	8
<i>TABLE 4 BACTERIA SUSCEPTIBLE TO OZONE</i> .....	8
<i>TABLE 4 (CONTINUED)</i> .....	9
Fungi and Mold.....	9
<i>TABLE 5 FUNGUS AND MOLD SPORES SUSCEPTIBLE TO OZONE</i> .....	9

Fungal Pathogens.....	10
<i>TABLE 6 FUNGAL PATHOGENS SUSCEPTIBLE TO OZONE</i> .....	<i>10</i>
Protozoa.....	10
<i>TABLE 7 PROTOZOA SUSCEPTIBLE TO OZONE</i> .....	<i>10</i>
Cysts.....	11
<i>TABLE 8 CYSTS SUSCEPTIBLE TO OZONE</i> .....	<i>11</i>
Algae.....	11
<i>TABLE 9 ALGAE SUSCEPTIBLE TO OZONE</i> .....	<i>11</i>
Yeasts.....	11
<i>TABLE 10 YEASTS SUSCEPTIBLE TO OZONE</i> .....	<i>12</i>
OXIDATION .....	12
<i>TABLE 11 COMMON OXIDANTS AND THEIR OXIDIZING</i> <i>POTENTIAL (VOLTS)</i> .....	<i>12</i>
<i>TABLE 12 ORGANICS OXIDIZED BY OZONE</i> .....	<i>13</i>
Micropollutants.....	14
Advanced Oxidation Processes.....	14
Hydrogen Peroxide.....	14
UV.....	15
Elevated pH.....	15
HISTORY .....	15
<i>TABLE 13 HISTORY OF OZONE</i> .....	<i>15</i>
<i>TABLE 13 (CONTINUED)</i> .....	<i>16</i>
COMPETITIVE TECHNOLOGIES .....	16
WATER/WASTEWATER TREATMENT .....	16
Chlorination.....	16
Disinfection Byproducts.....	17
Alternative Forms of Chlorine .....	17
Other Specialty Water Treatment Chemicals .....	17
UV Irradiation .....	18
Membrane Filtration .....	18
Phase-out of Chlorine .....	18
<i>TABLE 14 GLOBAL MARKET FOR COMPETITIVE WATER</i> <i>TREATMENT TECHNOLOGIES, THROUGH 2012 (\$ MILLIONS)</i> .....	<i>19</i>
<i>FIGURE 3 GLOBAL MARKET FOR COMPETITIVE WATER</i> <i>TREATMENT TECHNOLOGIES, 2002-2012 (\$ MILLIONS)</i> .....	<i>19</i>
EQUIPMENT COSTS .....	20
<i>TABLE 15 CAPITAL COSTS OF WATER TREATMENT, BY</i> <i>TECHNOLOGY TYPE (AVERAGE \$/GALLON, BY PLANT SIZE)</i> .....	<i>20</i>
INDOOR AIR TREATMENT .....	20
Mechanical Filtration.....	20
HEPA .....	21
ULPA.....	21
UV .....	21
Ion Generation.....	21

Electronic Units .....	21
Electrostatic Precipitators .....	22
Charged Media Purifiers .....	22
Adsorbents .....	22
POTABLE WATER .....	23
OVERVIEW .....	23
OVERVIEW (CONTINUED) .....	24
<i>TABLE 16 GLOBAL VALUE OF OZONE TECHNOLOGY IN POTABLE     WATER TREATMENT BY TYPE, THROUGH 2012 (\$ MILLIONS)</i> .....	25
<i>FIGURE 4 GLOBAL VALUE OF OZONE TECHNOLOGY IN POTABLE     WATER TREATMENT BY TYPE, 2002-2012 (\$ MILLIONS)</i> .....	26
MUNICIPAL DRINKING WATER TREATMENT .....	26
DISPERSING THE GAS.....	27
Ozone with Hydrogen Peroxide.....	28
DRAWBACKS AND BENEFITS .....	28
Advantages .....	28
Disadvantages.....	29
Bromate.....	29
INSTALLED CAPACITY .....	29
<i>TABLE 17 U.S. OZONE INSTALLATIONS BY YEAR, LOCATION,     MANUFACTURER AND CAPACITY (EXISTING AND PROPOSED,     2007, 1MGD AND LARGER)</i> .....	30
<i>TABLE 17 (CONTINUED)</i> .....	31
<i>TABLE 17 (CONTINUED)</i> .....	32
<i>TABLE 17 (CONTINUED)</i> .....	33
<i>TABLE 17 (CONTINUED)</i> .....	34
<i>TABLE 17 (CONTINUED)</i> .....	35
RESIDENTIAL DRINKING WATER TREATMENT .....	36
BOTTLED WATER TREATMENT .....	36
GLOBAL CONSUMPTION .....	37
<i>TABLE 18 GLOBAL BOTTLED WATER CONSUMPTION, VOLUME BY     COUNTRY, 2004 (BILLIONS)</i> .....	37
<i>FIGURE 5 GLOBAL BOTTLED WATER CONSUMPTION, VOLUME BY     COUNTRY, 2004 (%)</i> .....	38
<i>TABLE 19 WORLD'S LARGEST BOTTLED WATER CONSUMERS, PER     CAPITA BY COUNTRY, 2004</i> .....	39
<i>FIGURE 6 WORLD'S LARGEST BOTTLED WATER CONSUMERS, PER     CAPITA BY COUNTRY, 2004 (%)</i> .....	39
OZONE TREATMENT OF BOTTLED WATER .....	40
Regulating Ozone Dosage.....	40
BOTTLED WATER STANDARDS .....	40
Bottled Water Standards (Continued).....	41
WASTEWATER .....	42

OVERVIEW .....	42
MARKET .....	43
<i>TABLE 20 GLOBAL VALUE OF OZONE TECHNOLOGY IN WASTEWATER TREATMENT, THROUGH 2012 (\$ MILLIONS)</i> .....	44
<i>FIGURE 7 GLOBAL VALUE OF OZONE TECHNOLOGY IN WASTEWATER TREATMENT, 2002-2012 (\$ MILLIONS)</i> .....	44
DOMESTIC WASTEWATER .....	44
<i>TABLE 21 INFECTIOUS AGENTS POTENTIALLY PRESENT IN DOMESTIC WASTEWATER</i> .....	45
OZONE DISINFECTION OF WASTEWATER .....	45
<i>FIGURE 8 WASTEWATER TREATMENT SCHEMATIC</i> .....	46
Advantages .....	47
Disadvantages.....	47
COST.....	47
<i>TABLE 22 TYPICAL COST ESTIMATE OF AN OZONE DISINFECTION SYSTEM (\$)</i> .....	48
INDUSTRIAL WASTEWATER.....	48
COLOR REMOVAL.....	49
CYANIDE, HEAVY METALS.....	49
ADVANTAGES AND DISADVANTAGES OF OZONE IN INDUSTRIAL WASTEWATER TREATMENT.....	50
Advantages .....	50
Disadvantages.....	50
PROCESS WATER .....	51
OVERVIEW.....	51
OVERVIEW (CONTINUED) .....	52
OVERVIEW (CONTINUED) .....	53
MARKET .....	54
<i>TABLE 23 GLOBAL VALUE OF OZONE TECHNOLOGY IN PROCESS WATER TREATMENT, THROUGH 2012 (\$ MILLIONS)</i> .....	54
<i>FIGURE 9 GLOBAL VALUE OF OZONE TECHNOLOGY IN PROCESS WATER TREATMENT, 2002-2012 (\$ MILLIONS)</i> .....	55
PULP AND PAPER PROCESSING .....	55
THE KRAFT PROCESS.....	56
CHLORINE-FREE BLEACHING .....	56
ECF VS. TCF.....	57
<i>TABLE 24 GLOBAL BLEACHED PULP PRODUCTION, BY TYPE, 1990- 2005 (METRIC TONS)</i> .....	58
<i>FIGURE 10 GLOBAL BLEACHED PULP PRODUCTION, BY TYPE, 1990-2005 (METRIC TONS)</i> .....	58
THE OZONE BLEACHING PROCESS .....	59
<i>FIGURE 11 TYPICAL OZONE PULP BLEACHING SYSTEM</i> .....	59
Advantages .....	60
Disadvantages.....	60

COSTS .....	61
<i>TABLE 25 COMPARATIVE COSTS OF OZONE BLEACHING VS.</i>	
<i>CHLORINE BLEACHING</i> .....	61
FOOD PROCESSING .....	61
APPLICATIONS OF OZONE IN THE FOOD INDUSTRY .....	62
<i>TABLE 26 APPLICATIONS OF OZONE IN THE FOOD PROCESSING</i>	
<i>INDUSTRY</i> .....	63
Fruits and Vegetables .....	63
<i>TABLE 27 PRODUCE WASHED COMMERCIALY WITH OZONATED</i>	
<i>WATER</i> .....	64
Meat, Poultry, and Seafood .....	64
Meat.....	64
Poultry.....	65
Seafood .....	65
Commercial Fishing Vessels .....	65
Seafood Processing.....	66
Shellfish .....	66
Finfish .....	66
Wine .....	67
<i>TABLE 28 APPLICATIONS OF OZONE IN THE WINE INDUSTRY</i> .....	67
BENEFITS AND DRAWBACKS OF OZONE IN FOOD	
PROCESSING.....	67
Advantages .....	67
Disadvantages.....	67
EQUIPMENT SANITIZING .....	68
HARD SURFACE SANITIZING.....	68
SANITIZING PACKAGING MATERIAL.....	68
SEMICONDUCTOR MANUFACTURING .....	69
ULTRAPURE DEIONIZED WATER .....	69
<i>TABLE 29 TYPICAL STANDARDS FOR ULTRAPURE</i>	
<i>SEMICONDUCTOR WATER (65NM DEVICES)</i> .....	69
WAFER CLEANING .....	70
PHARMACEUTICALS PRODUCTION.....	70
STERILE MAKEUP WATER .....	71
<i>FIGURE 12 PHARMACEUTICAL PROCESS WATER SYSTEM</i> .....	72
COOLING WATER.....	72
OZONATION OF COOLING WATER .....	73
<i>FIGURE 13 PROCESS FOR OZONE TREATMENT OF COOLING</i>	
<i>WATER</i> .....	74
CONTROLLING MACROFOULANTS .....	75
LEGIONELLA.....	75
Advantages .....	76
Disadvantages.....	76
CLEAN-IN-PLACE .....	77

<i>FIGURE 14 PROCESS WATER DISINFECTION/CIP OZONE SYSTEM SCHEMATIC</i> .....	78
OTHER WATER .....	79
OVERVIEW.....	79
OVERVIEW (CONTINUED) .....	80
MARKET .....	81
<i>TABLE 30 GLOBAL VALUE OF OZONE TECHNOLOGY IN OTHER WATER TREATMENT, THROUGH 2012 (\$ MILLIONS)</i> .....	81
<i>FIGURE 15 GLOBAL VALUE OF OZONE TECHNOLOGY IN OTHER WATER TREATMENT, 2002-2012 (\$ MILLIONS)</i> .....	82
SWIMMING POOLS, SPAS AND OTHER RECREATIONAL WATER .....	82
OVERVIEW .....	82
Advantages .....	83
Disadvantages.....	84
CHOOSING OZONE SYSTEMS FOR POOLS AND SPAS .....	84
SIZING OZONE SYSTEMS FOR POOLS AND SPAS.....	84
AGRICULTURE/AQUACULTURE .....	85
LIVESTOCK WATER .....	85
Dairy Cattle .....	85
Poultry.....	85
AQUARIUMS, SEA PARKS, ZOOS .....	86
<i>TABLE 31 GEOSMONICS INSTALLATIONS AT SEA PARKS, ZOOS AND AQUARIUMS (PARTIAL LIST)</i> .....	87
FISH FARMING.....	88
Global Aquaculture Production.....	88
<i>TABLE 32 AQUACULTURE PRODUCTION BY WORLD REGION, 2004 (MILLION METRIC TONS)</i> .....	89
<i>FIGURE 16 AQUACULTURE PRODUCTION BY WORLD REGION, 2004 (%)</i> .....	89
Fingerlakes Aquaculture Study .....	90
HYDROPONICS.....	90
BALLAST WATER.....	91
ENVIRONMENTAL CLEANUP .....	92
LANDFILL LEACHATE.....	92
Cost.....	93
GROUNDWATER/SOIL REMEDIATION .....	93
<i>TABLE 33 GROUNDWATER CONTAMINANTS SUSCEPTIBLE TO OZONE</i> .....	94
Advantages .....	94
LAUNDRY.....	95
COST.....	95
<i>TABLE 34 SAVINGS POTENTIAL FOR OZONE VERSUS CONVENTIONAL CLEANING IN LAUNDRY APPLICATIONS</i> .....	96
HOUSEHOLD APPLIANCES/PERSONAL CARE PRODUCTS.....	96

RESIDENTIAL SURFACE SANITIZERS .....	97
FACIAL STEAMERS .....	97
FOOT BATHS.....	97
ORAL CARE SYSTEMS .....	97
CONTACT LENS CLEANERS.....	98
FOOTWEAR/APPAREL DEODORIZERS .....	98
GROOMING BRUSHES .....	98
HOMELAND SECURITY.....	98
ANTHRAX CLEANUP .....	99
AIR AND GAS TREATMENT .....	100
OVERVIEW.....	100
OVERVIEW (CONTINUED) .....	101
OVERVIEW (CONTINUED) .....	102
MARKET .....	103
<i>TABLE 35 GLOBAL VALUE OF OZONE TECHNOLOGY IN AIR AND</i>	
<i>GAS TREATMENT, THROUGH 2012 (\$ MILLIONS).....</i>	<i>103</i>
<i>FIGURE 17 GLOBAL VALUE OF OZONE TECHNOLOGY IN AIR AND</i>	
<i>GAS TREATMENT, 2002-2012 (\$ MILLIONS) .....</i>	<i>103</i>
INDOOR AIR POLLUTION .....	104
<i>TABLE 36 INDOOR AIR POLLUTANTS.....</i>	<i>104</i>
<i>TABLE 36 (CONTINUED).....</i>	<i>105</i>
O <sub>3</sub> IN INDOOR AIR POLLUTION .....	105
ODOR CONTROL.....	105
THRESHOLDS.....	106
<i>TABLE 37 MALODOROUS SUBSTANCES AND ODOR THRESHOLDS.....</i>	<i>106</i>
<i>TABLE 37 (CONTINUED).....</i>	<i>107</i>
ODOR CONTROL APPLICATIONS .....	108
<i>TABLE 38 POTENTIAL USERS OF OZONE FOR ODOR CONTROL.....</i>	<i>108</i>
DOSAGES.....	108
<i>TABLE 39 TYPICAL INDUSTRIAL ODOR CONTROL DOSAGES.....</i>	<i>109</i>
BARRIERS .....	109
EPA Recommends against Residential Ozone Air	
Cleaners.....	109
MOLD/SMOKE REMEDIATION .....	110
ADVANTAGES.....	110
DISADVANTAGES .....	111
FOOD STORAGE.....	111
PRODUCE .....	111
MEAT.....	111
MEAT CURING.....	112
CROP PRETREATMENT, FUMIGATION.....	112
GAS PHASE SEMICONDUCTOR PROCESSES .....	113
WAFER CLEANING.....	113
OZONE-ASSISTED LAYER DEPOSITION .....	114

CVD .....	114
ALD .....	114
EXHAUST GASES.....	115
MEDICINE .....	116
OVERVIEW.....	116
OVERVIEW (CONTINUED) .....	117
<i>TABLE 40 GLOBAL VALUE OF OZONE TECHNOLOGY IN MEDICINE,</i> <i>THROUGH 2012 (\$ MILLIONS)</i> .....	118
<i>FIGURE 18 WORLWIDE VALUE OF OZONE TECHNOLOGY IN</i> <i>MEDICINE, 2002-2012 (\$ MILLIONS)</i> .....	118
OVERVIEW.....	118
GENERATING MEDICAL OZONE .....	119
USES FOR MEDICAL OZONE.....	119
<i>TABLE 41 THERAPEUTIC USES OF OZONE</i> .....	120
Bactericidal, Virucidal, and Fungicidal Action .....	120
Cancer Therapy .....	120
AIDS Treatment .....	121
Dentistry .....	121
Veterinary Medicine .....	122
<i>TABLE 42 VETERINARY APPLICATIONS OF OZONE THERAPY</i> .....	122
HOW MEDICAL OZONE IS APPLIED .....	122
Systemic Ozone Treatment .....	123
Topical Ozone Treatment .....	123
Ozone Gas.....	123
Ozonated Water .....	124
Ozonated Ointments.....	124
PATENT REVIEW.....	125
PATENTS BY APPLICATION .....	125
PATENTS BY APPLICATION (CONTINUED).....	126
<i>TABLE 43 PATENTS, BY APPLICATION</i> .....	127
<i>FIGURE 19 PATENTS, BY APPLICATION</i> .....	128
PATENTS BY COMPANY.....	129
<i>TABLE 44 PATENTS, BY COMPANY</i> .....	130
<i>TABLE 44 (CONTINUED)</i> .....	131
<i>TABLE 44 (CONTINUED)</i> .....	132
OZONE RESEARCH .....	133
OVERVIEW.....	133
<i>TABLE 45 ADVANCED OXIDATION TECHNOLOGIES</i> .....	134
<i>TABLE 46 WATER TREATMENT</i> .....	134
<i>TABLE 47 BROMATE CONTROL</i> .....	135
<i>TABLE 48 SYNERGY OF OZONE AND ULTRAVIOLET</i> .....	135
<i>TABLE 49 WATER TREATMENT USING OZONE</i> .....	136



TABLE 50 INDUSTRIAL APPLICATIONS .....	136
TABLE 51 PREOXIDATION IN WATER TREATMENT .....	137
TABLE 52 EMERGING CONTAMINANTS .....	137
TABLE 53 OZONE AND AOT SYSTEM DESIGN.....	138
TABLE 54 WASTEWATER TREATMENT.....	138
TABLE 54 (CONTINUED).....	139
TABLE 55 AGRICULTURE, FOOD, AND BEVERAGE APPLICATIONS.....	139
TABLE 56 OZONE GENERATION .....	140
TABLE 57 OZONE CHEMISTRY AND SOLUBILITY.....	140
TABLE 58 OZONE CONTACTING.....	141
TABLE 59 GENERAL SESSION.....	141
TABLE 60 SOIL AND GROUNDWATER TREATMENT.....	142
TABLE 61 OZONE OPERATIONS FORUM.....	142
TABLE 62 OZONE AND UV-WASTEWATER INDUSTRY (INCLUDING SLUDGE TREATMENT).....	143
TABLE 63 MEDICAL APPLICATIONS OF OZONE.....	143
TABLE 63 (CONTINUED).....	144
TABLE 64 OZONE THERAPY IN OPHTHALMOLOGY.....	144
TABLE 65 OZONE THERAPY IN ORTHOPEDICS.....	145
TABLE 66 OZONIZED OIL IN MEDICINE.....	145
TABLE 67 OZONE THERAPY IN VASCULAR DISEASES AND OTHER APPLICATIONS .....	146
TABLE 68 BIOLOGICAL MODELS AND PRECLINICAL STUDIES .....	146
TABLE 68 (CONTINUED).....	147
INDUSTRY STRUCTURE .....	148
TABLE 69 GLOBAL DEMAND FOR OZONE TECHNOLOGY, BY REGION, 2007 (\$ MILLIONS).....	148
FIGURE 20 GLOBAL DEMAND FOR OZONE TECHNOLOGY BY REGION, 2007 (%).....	149
THE WATER TREATMENT INDUSTRY .....	149
OZONE TECHNOLOGY VENDORS .....	150
CONGLOMERATES .....	150
WATER TREATMENT COMPANIES .....	151
PURE PLAYS .....	151
OTHER TYPES OF OZONE COMPANIES .....	152
MARKET SHARE .....	152
TABLE 70 OZONE COMPANIES MARKET SHARE (%) .....	153
FIGURE 21 OZONE COMPANIES MARKET SHARE (%).....	153
COMPANY PROFILES .....	153
ABSOLUTE SYSTEMS, INC.....	154
AGRIMOND .....	154
AIR PRODUCTS PLC .....	155
ALAB, LLC .....	155
APPLIED MATERIALS, INC.....	156

ARGENTOX OZONE TECHNOLOGY.....	157
<i>TABLE 71 SERIES G1 GENERATORS</i> .....	157
<i>TABLE 72 SERIES G 1.1 GENERATORS</i> .....	158
<i>TABLE 73 SERIES G2 GENERATORS</i> .....	158
<i>TABLE 74 SERIES G3 GENERATORS</i> .....	159
<i>TABLE 75 SERIES G4</i> .....	159
<i>TABLE 76 SERIES G5 GENERATORS</i> .....	160
BWT GROUP.....	160
Steritron Electrolytic Ozone Generators .....	161
Loopo .....	161
Coolzon .....	161
Bewazon .....	162
PairOx .....	162
CB&I HOWE-BAKER ENGINEERS .....	162
CLEARWATER TECH INC.....	163
Clearwater Generators.....	163
CUROZONE USA, INC.....	164
DEGREMONT SA .....	165
Positive Pressure Generators.....	166
TOGC Generators.....	166
OZAT CFS Generators .....	166
<i>TABLE 77 OZAT CFS SERIES</i> .....	167
OZAT CFV Series .....	167
<i>TABLE 78 OZAT CFV SERIES</i> .....	167
OZFIL.....	168
Membrel .....	168
<i>TABLE 79 MEMBREL SERIES</i> .....	168
DEL OZONE.....	168
DEL Generators.....	169
EBARA CORP. ....	169
DRO Generators .....	170
FINNEGAN REZTEK .....	170
FUJI ELECTRIC.....	171
GENERAL ELECTRIC .....	172
HESS MACHINE INTERNATIONAL .....	173
Hess Generators .....	173
IN USA, INC.....	173
ITT INDUSTRIES.....	174
WEDECO AG.....	174
WEDECO Ozone Technologies.....	175
WEDECO Generators.....	175
GSO and GSA Series .....	175
<i>TABLE 80 GSO SERIES GENERATORS</i> .....	176
<i>TABLE 81 GSA SERIES GENERATORS</i> .....	176

SMO and SMA Series .....	177
<i>TABLE 82 SMO SERIES GENERATORS</i> .....	177
<i>TABLE 83 SMA SERIES GENERATORS</i> .....	178
<i>TABLE 84 PDO/PDA SERIES GENERATORS</i> .....	179
KAUFMANN UMWELTECHNIK .....	179
Kaufmann Generators.....	180
KERFOOT TECHNOLOGIES .....	180
C-Sparger .....	180
Perozone .....	181
LENNTECH WATER TREATMENT & AIR PURIFICATION	
HOLDING BV .....	181
LIFETECH SRO .....	182
MEDIZONE INTERNATIONAL .....	182
METSO PAPER.....	183
ZeTrac .....	184
MITSUBISHI ELECTRIC POWER PRODUCTS, INC. ....	184
OS Series.....	185
<i>TABLE 85 OS-JL SERIES (50/60HZ DIRECT COOLED)</i> .....	185
OT-G Series.....	185
<i>TABLE 86 OT-G SERIES (TUBE TYPE MEDIUM OZONIZER, 50/60 HZ</i>	
<i>HEAT EXCHANGER METHOD)</i> .....	185
OS-(O <sub>2</sub> ) and OT-(O <sub>2</sub> ) Series .....	186
<i>TABLE 87 OS-(O<sub>2</sub>) AND OT-(O<sub>2</sub>) SERIES</i> .....	186
<i>TABLE 87 (CONTINUED)</i> .....	187
OG Series .....	187
<i>TABLE 88 OG SERIES (PLATE TYPE OZONIZER)</i> .....	187
OP Series.....	187
<i>TABLE 89 OP SERIES</i> .....	188
MKS INSTRUMENTS .....	188
SEMOZON Generators.....	189
LIQUOZON Ozonated Water Systems .....	189
NORLAND INTERNATIONAL.....	190
NUTECH O <sub>3</sub> .....	190
NUTEK INTERNATIONAL, INC. ....	191
OZOCAN CORP.....	192
OZOMAX, LTD. ....	193
OZONOLOGY, INC.....	194
OZONO ELETTRONICA INTERNAZIONALE.....	194
Ozono Elettronica Generators.....	195
SGP Series.....	195
<i>TABLE 90 SGP SERIES</i> .....	195
MCP Series.....	195
<i>TABLE 91 MCP SERIES</i> .....	196
TPF Series .....	196

<i>TABLE 92 TPF SERIES</i> .....	196
Triozon Steril .....	196
<i>TABLE 93 TRIOZON STERIL</i> .....	197
Ozopool .....	197
<i>TABLE 94 OZOPOOL</i> .....	197
Ozoline, Steriline Plants.....	198
<i>TABLE 95 OZOLINE, STERILINE</i> .....	198
Ozon Dial.....	198
<i>TABLE 96 OZON DIAL</i> .....	199
WWD Plants.....	199
<i>TABLE 97 WWD PLANTS</i> .....	199
Mobilozone.....	199
<i>TABLE 98 MOBILOZONE</i> .....	200
Desozone.....	200
<i>TABLE 99 DESOZONE</i> .....	200
OZOTECH, INC. ....	200
PACIFIC OZONE TECHNOLOGY, INC. ....	201
Pacific Ozone Technology Generators.....	201
PROMINENT DOSIERTECHNIK .....	202
ProMinent Generators.....	203
<i>TABLE 100 OZVA SERIES</i> .....	203
<i>TABLE 101 OZONFILT OMVA SERIES</i> .....	204
<i>TABLE 102 DULCOCLEAN SERIES</i> .....	204
<i>TABLE 103 BONO ZON SERIES</i> .....	205
RGF ENVIRONMENTAL.....	205
SUMITOMO PRECISION PRODUCTS.....	206
TRIPLE O SYSTEMS, INC.....	207
TSO3, INC. ....	207
WASSERTEC OZONE SYSTEMS.....	208
WELLTECH PACIFIC OZONE LTD. ....	209
YANCO INDUSTRIES.....	209
OZONE SERVICES.....	209
ADDITIONAL MANUFACTURERS.....	210
<i>TABLE 104 ADDITIONAL OZONE GENERATOR MANUFACTURERS</i> .....	210
<i>TABLE 104 (CONTINUED)</i> .....	211
<i>TABLE 104 (CONTINUED)</i> .....	212
<i>TABLE 104 (CONTINUED)</i> .....	213
<i>TABLE 104 (CONTINUED)</i> .....	214
<i>TABLE 104 (CONTINUED)</i> .....	215
<i>TABLE 104 (CONTINUED)</i> .....	216
<i>TABLE 104 (CONTINUED)</i> .....	217
<i>TABLE 104 (CONTINUED)</i> .....	218
<i>TABLE 105 OZONE ASSOCIATIONS AND RELATED INDUSTRY ORGANIZATIONS</i> .....	218

TABLE 105 (CONTINUED).....	219
TABLE 105 (CONTINUED).....	220
APPENDIX .....	221
TABLE 106 PATENT SURVEY, 2007 (JANUARY 1 TO JUNE 5) .....	221
TABLE 106 (CONTINUED).....	222
TABLE 106 (CONTINUED).....	223
TABLE 106 (CONTINUED).....	224
TABLE 107 PATENT SURVEY, 2006.....	225
TABLE 107 (CONTINUED).....	226
TABLE 107 (CONTINUED).....	227
TABLE 107 (CONTINUED).....	228
TABLE 107 (CONTINUED).....	229
TABLE 107 (CONTINUED).....	230
TABLE 107 (CONTINUED).....	231
TABLE 107 (CONTINUED).....	232
TABLE 108 PATENT SURVEY, 2005.....	232
TABLE 108 (CONTINUED).....	233
TABLE 108 (CONTINUED).....	234
TABLE 108 (CONTINUED).....	235
TABLE 108 (CONTINUED).....	236
TABLE 108 (CONTINUED).....	237
TABLE 108 (CONTINUED).....	238
TABLE 108 (CONTINUED).....	239
TABLE 109 PATENT SURVEY, 2004.....	240
TABLE 109 (CONTINUED).....	241
TABLE 109 (CONTINUED).....	242
TABLE 109 (CONTINUED).....	243
TABLE 109 (CONTINUED).....	244
TABLE 109 (CONTINUED).....	245
TABLE 109 (CONTINUED).....	246
TABLE 109 (CONTINUED).....	247
TABLE 109 (CONTINUED).....	248
TABLE 109 (CONTINUED).....	249
TABLE 109 (CONTINUED).....	250
TABLE 110 PATENT SURVEY, 2003.....	250
TABLE 110 (CONTINUED).....	251
TABLE 110 (CONTINUED).....	252
TABLE 110 (CONTINUED).....	253
TABLE 110 (CONTINUED).....	254
TABLE 110 (CONTINUED).....	255
TABLE 110 (CONTINUED).....	256
TABLE 110 (CONTINUED).....	257
TABLE 110 (CONTINUED).....	258
TABLE 110 (CONTINUED).....	259

<i>TABLE 110 (CONTINUED)</i> .....	260
<i>TABLE 111 PATENT SURVEY, 2002</i> .....	261
<i>TABLE 111 (CONTINUED)</i> .....	262
<i>TABLE 111 (CONTINUED)</i> .....	263
<i>TABLE 111 (CONTINUED)</i> .....	264
<i>TABLE 111 (CONTINUED)</i> .....	265
<i>TABLE 111 (CONTINUED)</i> .....	266
<i>TABLE 111 (CONTINUED)</i> .....	267
<i>TABLE 111 (CONTINUED)</i> .....	268
<i>TABLE 111 (CONTINUED)</i> .....	269
<i>TABLE 111 (CONTINUED)</i> .....	270