Execution Copy

INCINERATION FACILITIES
LEASE AGREEMENT

among

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

and

THE WATER POLLUTION CONTROL AUTHORITY OF
THE BOROUGH OF NAUGATUCK, as Lessor

and

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

Dated as of

October 25, 2001

As amended by the First Amendment dated as of June 4, 2002

RECORD OF PROCEEDINGS
RELATING TO THE COMMENCEMENT DATE

Document Number	Description of Documents
1.	Certificate of the Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough of Naugatuck as to Approval Period Responsibilities
2.	Certificate of Naugatuck Environmental Technologies LLC as to Approval Period Responsibilities
3.	Estoppel Certificate of Naugatuck Environmental Technologies LLC as to Fluid Bed Permit

4. Closing Certificate of Vivendi Environnement, S.A.

5. Private Management Approval

6. State Air Permit to Construct Fluidized Bed Incinerator

7. Letter of Credit

8. Certificates of Required Leasehold Period Insurance

9. Joint Acknowledgment for Acceptance of Certain Commencement Date Conditions and Other Related Matters

10. Joint Acknowledgment by the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck and Naugatuck Environmental Technologies LLC

11. Contract Administration Memorandum No. IF 2002-1

Doc 1

Document No. 1

CERTIFICATE OF THE BOROUGH OF NAUGATUCK, CONNECTICUT AND THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK AS TO APPROVAL PERIOD RESPONSIBILITIES

Pursuant to subsections 4.2(5) and 4.2(6) of the Incineration Facilities Lease Agreement among the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough of Naugatuck, Connecticut and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee"), dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement"; capitalized terms used but not defined herein are as defined in the Lease Agreement), the undersigned, Joan B. Taf, in her capacity as Mayor of the Borough of Naugatuck, and Ronald Merancy, in his capacity as Chairman of the WPCA, each being familiar with the provisions of the Lease Agreement, hereby certify to the Lessee on behalf of the Lessor that, on the basis of information reasonably available to them:

1. The representations of the Lessor set forth in Section 2.1 of the Lease Agreement are true and correct in all material respects as of the date hereof as if made on and as of such date.

2. Attached hereto as Exhibit A is a General Certificate of the Borough Clerk, certified by Judith E. Crosswait, as the Borough Clerk.

IN WITNESS WHEREOF, the undersigned have caused this Certificate to be executed as of the 15th day of August, 2002.

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By: Joan B. Taf
Joan B. Taf
Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By: Ronald Merancy
Ronald Merancy
Chairman

Exhibit A

General Certificate of the Borough Clerk

GENERAL CERTIFICATE OF THE BOROUGH CLERK

I, JUDITH E. CROSSWAIT, Clerk of the Borough of Naugatuck, Connecticut (the "Borough"), HEREBY CERTIFY as follows:

1. I am the duly appointed and acting Clerk of the Borough, authorized to execute this Certificate on behalf of the Borough.

2. The following named persons are the duly elected Mayor and Burgesses of the Borough as of the date hereof, and the dates of commencement and expiration of their terms of office, are as follows:

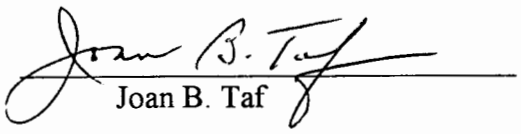
NAME	DATE OF COMMENCEMENT OF CURRENT TERM	DATE OF END OF CURRENT TERM
Mayor Joan B.Taf	May 21, 2001	May 19, 2003
Deputy Mayor Robert A. Mezzo	May 7, 2001	May 5, 2003
Lois A. Ackerman	May 7, 2001	May 5, 2003
Robert J. Burns	May 7, 2001	May 5, 2003
Anthony Campbell	May 7, 2001	May 5, 2003
William J. Goggin Sr.	May 7, 2001	May 5, 2003
Christian A. Herb	May 7, 2001	May 5, 2003
Robert A. Neth	May 7, 2001	May 5, 2003
Patrick J. Scully Sr.	May 7, 2001	May 5, 2003
Robert Woodfield	May 7, 2001	May 5, 2003

3. The following named persons are the duly appointed members of the Board of the WPCA as of the date hereof, and the dates of commencement and expiration of their terms of office, are as follows:

NAME	DATE OF COMMENCEMENT OF CURRENT TERM	DATE OF END OF CURRENT TERM
Ronald Merancy, Chairman	February 5, 2002	February, 2006
Rimas Balsys*	March 5, 2002	February 2005
Erik Krueger	February 5, 2002	February 2004
Sebastain A. Mildolo**	July 2, 2002	February 2003
Vacancy***	-------	February 2007

* Filling the unexpired term of Stephen Moody
** Filling the unexpired term of Richard Brown
*** Unexpired term of Julio Segarra to be filled

4. Set forth below is the true and genuine signature of Joan B. Taf, Mayor of the Borough.



Joan B. Taf

5. Set forth below is the true and genuine signature of Ronald Merancy, Chairman of the WPCA.

Ronald Merancy

6. The seal of the Borough, which is impressed below, is the duly adopted and only official seal of the Borough.

7. Attached to this General Certificate are true copies of the resolutions of the Board of Mayor and Burgesses and Board of the WPCA, as applicable, authorizing the Lease Agreement.

8. Subscribed below is my true and genuine signature.

9. The principal offices of the Borough and the WPCA are located at Town Hall, 229 Church Street, Naugatuck, Connecticut 06770.

IN WITNESS WHEREOF, I have hereunto set my hand and have caused the seal of the Borough to be hereto affixed as of the 15th day of August, 2002.

(SEAL)

By: _____
Judith E. Crosswait
Borough Clerk

I HEREBY CERTIFY that the signature of the Clerk of the Borough, which appears above on the foregoing certificate, is true and genuine and that I know said Clerk and know her to hold the office set opposite her signature.

Signature	Title
_____	Borough Attorney
Kevin H. McSherry	

Resolutions of the Board of Mayor and Burgesses and the Board of the WPCA

BOROUGH OF NAUGATUCK
JUDITH E. CROSSWAIT, BOROUGH CLERK
229 CHURCH STREET
NAUGATUCK, CT 06770
203 / 720-7008
FAX 203 / 720-7099

October 29, 2001

To Whom It May Concern:

CERTIFICATION

I, **JUDITH E. CROSSWAIT**, Clerk of the Borough of Naugatuck, Connecticut, **HEREBY CERTIFY** that the foregoing annexed extract from the minutes of a meeting of the Board of Mayor and Burgesses of said Borough, duly called and held on **October 11, 2001**, has been compared by me with the original minutes as officially recorded in my office in the Minute Book of said Board of Mayor and Burgesses and is a true, complete and correct copy thereof and of the whole of said original minutes so far as the same relate to the subject matters referred to in said extract.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said Borough of Naugatuck this **29th day of October, 2001**.

Judith E. Crosswait
Borough Clerk

(SEAL)

The adoption of the foregoing resolution was seconded by Burgess Neth and duly put to a vote on roll call, which resulted as follows:

AYES: 8 **NOES: 0**

The resolution was declared adopted.

VOTED: Unanimously on motion by Deputy Mayor Mezzo and seconded by Burgess Neth that the Board of Mayor and Burgesses adopt the following resolution:

RESOLUTION OF THE BOROUGH OF NAUGATUCK, CONNECTICUT AND THE BOROUGH OF NAUGATUCK WATER POLLUTION CONTROL AUTHORITY, ADOPTED OCTOBER 11, 2001, AUTHORIZING THE EXECUTION OF (1) A SERVICE CONTRACT FOR WASTEWATER TREATMENT SYSTEM CAPITAL IMPROVEMENTS AND ASSET MANAGEMENT WITH U.S. FILTER OPERATING SERVICES, INC., (2) AN INCINERATION FACILITIES LEASE AGREEMENT WITH NAUGATUCK ENVIRONMENTAL TECHNOLOGIES, LLC, AND (3) CERTAIN OTHER CONTRACTS RELATED TO SUCH SERVICE CONTRACT AND LEASE AGREEMENT AND DETERMINING THAT IT IS IN THE BEST INTERESTS OF THE BOROUGH TO ENTER INTO SUCH CONTRACTS WITHOUT HAVING UTILIZED A FORMAL BIDDING PROCESS.

WHEREAS, the Borough of Naugatuck, Connecticut (the "Borough") owns a wastewater treatment plant (the "Plant"), sludge incinerators (the "Incineration Facilities") and a related wastewater collection system (the "Collection System");

WHEREAS, The Collection System is currently operated and maintained by the Borough, and the Plant and the Incineration Facilities are currently operated by U.S. Filter Operating Services, Inc. ("U.S. Filter") pursuant to an Interim Service Contract by and among the Borough, the Borough of Naugatuck Water Pollution Control Authority (the "WPCA") and U.S. Filter, dated as of April 12, 2001;

WHEREAS, The Borough, on behalf of the Borough and the WPCA, issued a Request for Proposals to Operate and Maintain and Make Improvements to the Borough of Naugatuck Wastewater Treatment Plant and Sludge Incinerators, dated February 5, 1999 (the "RFP") seeking proposals from private companies to operate, maintain, repair, replace and manage the Plant and the Incineration Facilities, and to design, construct, start up, test and achieve acceptance of certain initial capital improvements to the Plant and the Incineration Facilities;

WHEREAS, in response to the RFP, the Borough received proposals on May 25, 1999 from two companies; U.S. Filter and Waste Stream Environmental, Inc.;

WHEREAS, in October 1999, the Borough initiated a post-proposal clarification process with both companies, during which Waste Stream Environmental, Inc. formally withdrew its proposal from further consideration by the Borough.

WHEREAS, following an extensive period of evaluation and clarification of the U.S. Filter proposal, the Borough, on behalf of the Borough and the WPCA, in February 2000 determined U.S. Filter as the most advantageous proposer and authorized the Borough's sub-committee and consultants to proceed with negotiations with U.S. Filter for the long-term contract for the upgrade and management of the Plant and the Incineration Facilities;

WHEREAS, during preliminary negotiations with U.S. Filter on the terms of the proposed long-term contract, U.S. Filer offered to provide certain services with respect to the Collection System that were not requested in the RFP, but which services were contemplated in the Borough resolution adopted on January 21, 1999 authorized the issuance of the RFP;

WHEREAS, the basic terms and conditions of the proposed long-term contract including the additional Collection System services, were memorialized in an Abbreviated Term Sheet (the "Term Sheet") between the Borough and U.S. Filter, which was approved by the Borough, on behalf of the Borough and the WPCA, on July 12, 2000;

WHEREAS, subsequent to the execution of the Term Sheet, one of U.S. Filter's team members, NETCO/RESTEC, withdrew its participation from U.S. Filter's proposal and, at the request of U.S. Filter, the Borough and U.S. Filter negotiated certain modifications to the Term Sheet, which modifications were approved by the Board, on behalf of the Borough and the WPCA, on December 12, 2000;

WHEREAS, in order to implement the terms and conditions of the Term Sheet, it was determined to be in the Borough's best interest to develop two contracts, one to manage the Plant and one to lease the Incineration Facilities, so as to preserve the tax-exemption on the Borough's existing debt for the Plant and the Collection System, to maximize the cost savings to the Borough for the financing of the initial capital improvements to the Plant, and to enable the Borough to issue tax-exempt obligations for Future Plant improvement;

WHEREAS, negotiations for the long-term contracts with U.S. Filter have proved to be successful in the development of (1) a Service Contract for Wastewater Treatment System Capital Improvements and Asset Management (the "Service Contract") which has a twenty-year term addressing all substantive matters relating to the operation, maintenance, repair and replacement of the Plant, maintenance of the Collection System, and the design, permitting, construction, start-up, acceptance testing of the initial capital improvements to the Plant and certain improvements to the Collection System pump stations, and (2) an Incineration Facilities Lease Agreement (the "Lease Agreement") which has a twenty-year term addressing all substantive matters relating to the lease, operation, maintenance, repair and replacement of the Incineration Facilities and the design, permitting construction, start-up, acceptance testing of the initial capital improvements to the Incineration Facilities;

WHEREAS, the obligations of U.S. Filter under the Service Contract and the obligations of Naugatuck Environmental Technologies, LLC under the Lease Agreement will each be guaranteed by Vivendi Environnment, S.A. pursuant to separate Guaranty Agreements;

WHEREAS, U.S. Filter and Naugatuck Environmental Technologies, LLC will enter into a Shared Services Agreement whereby each party agrees to offer one another certain shared services to facilitate the efficient management and operations of the Plant and the Incineration Facilities,

WHEREAS, pursuant to the terms of the negotiated Service Contract, the Borough and U.S. Filter have further agreed to the terms of a Cost Sharing Agreement whereby each party agrees to the share in certain operating and capital costs that may result from the implementation of remedial actions required under the NPDES Permit with respect to the zinc limits thereunder;

WHEREAS, the negotiated Service Contract, Lease Agreement, Guaranty Agreements and Shared Services Agreement together will provide a comprehensive framework which will result in a project advantageous to the interests of the residents of the Borough of Naugatuck and meeting the Borough's goals as set forth in the RFP;

WHEREAS, following execution of the Service Contract and the Lease Agreement, the Borough intends to submit such contracts to the United States Environmental Protection Agency and the State of Connecticut Department of Environmental Protection for their review and approval as required by applicable law;

WHEREAS, Section 11 of the 1953 Special Acts of the General Assembly (Act No. 159), as amended, concerning the creation of the Borough's Department of Finance, provides formal bidding procedures for contracts of the Borough and its departments, offices, agencies, boards or commissions for the purchase of labor, goods or non-professional services involving the expenditure of five thousand dollars or more;

WHEREAS, such Section 11 generally requires that the Controller of the Borough award all such contracts whenever possible to the lowest responsible bidder, unless it shall be determined by a formal recorded vote of two-thirds of the membership of the Board of Mayor and Burgesses (the "Board") present and voting but no less than six members present and voting to be against the best interest of the Borough;

WHEREAS, by resolution adopted on January 21, 1999, the Borough, on behalf of the Borough and the WPCA, heretofore authorized the issuance of a request for the proposals to procure a contract for the long-term operation and maintenance and improvement of the Borough's wastewater treatment plant, sludge incinerators or wastewater collection system and determined that it was in the best interest of the Borough to utilize such a request for proposals; and

WHEREAS, the Borough believes that the awarding the negotiated Service Contract and Lease Agreement which resulted from the aforementioned request for proposals process to the lowest responsible bidder is against the best interests of the Borough and that awarding the such Service Contract to U.S. Filter and Lease Agreement to Naugatuck Environmental Technologies, LLC is in the best interests of the Borough.

THE BOARD OF MAYOR AND BURGESSES OF THE BOROUGH OF NAUGATUCK, CONNECTICUT, ON BEHALF OF THE BOROUGH AND THE WPCA HEREBY RESOLVES (by the favorable vote of not less than two-thirds of all of the members of said Board of Mayor and Burgesses) AS FOLLOWS:

Section 1. The Board hereby determines, in accordance with Section 11 of the 1953 Special Acts of the General Assembly (Act No. 159), as amended, that awarding the Service Contract and the Lease Agreement to the lowest responsible bidder is against the best interest of the Borough.

Section 2. The Board hereby further determines that it is in the best interest of the Borough to authorize the execution of the Service Contract with U.S. Filter and the Lease Agreement with Naugatuck Environmental Technologies, LLC without having utilized a formal bidding process.

Section 3. The Mayor, or her designee, be and she is hereby authorized to execute and deliver (1) the Service Contract with U.S. Filter Operating Services, Inc. for the operation, maintenance, repair and replacement of the Plant, the maintenance of the Collection System, and the design, permitting, construction, start-up, acceptance testing of the initial capital improvements to the Plant and certain improvements to the Collection System pump stations, and (2) the Lease Agreement with Naugatuck Environmental Technologies, LLC for the lease, operation, maintenance, repair and replacement of the Incineration Facilities and the design, permitting, construction, start-up, acceptance testing of the initial capital improvements to the Incineration Facilities. The Service Contract and the Lease Agreement shall be substantially in the forms presented at this meeting with such amendments, modifications, changes and omissions thereto as the Mayor, or her designee, may approve as in the best interests of the Borough and not inconsistent with the terms of this resolution. The execution of the Service Contract and the Lease Agreement shall constitute conclusive evidence of the valid authorization hereunder of any such amendment, modification, change or omission.

Section 4. The Mayor, or her designee, be and she is hereby authorized to execute the acceptance of the Guaranty Agreements executed and delivered to the Borough by Vivendi Environnement, S. A. with respect to each of the Service Contract and the Lease Agreement substantially in the forms attached as Transaction Form A to each of the Service Contract and the Lease Agreement with such amendments, modification, changes and omissions as may be approved by the Mayor, or her designee. The execution by the Mayor, or her designee, of the acceptance of the Guaranty Agreements shall constitute conclusive evidence of the authorization hereunder of any such amendments, modification, changes or omissions to such Guaranty Agreements.

Section 5. The Mayor, or her designee, be and she is hereby authorized to execute the acceptance of the Shared Services Agreement between U.S. Filter and Naugatuck Environmental Technologies, LLC substantially in the form presented at this meeting with such amendments, modification, changes and omissions as may be approved by the Mayor, or her designee. The execution by the Mayor, or her designee, of the acceptance of the Shared Services Agreement shall constitute conclusive evidence of the authorization hereunder of any such amendments, modifications, changes or omissions to such Shared Services Agreement.

Section 6. The Mayor, or her designee, be and she is hereby authorized to execute and deliver the Cost Sharing Agreement with U.S. Filter substantially in the form presented at this meeting with such amendments, modifications, changes and omissions as may be approved by the Mayor, or her designee. The execution by the Mayor, or her designee, of the acceptance of the Cost Sharing Agreement shall constitute conclusive evidence of the authorization hereunder of any such amendments, modifications, changes or omissions to such Cost Sharing Agreement.

Section 7. The Mayor, or her designee, is hereby authorized to execute and deliver any and all other papers, instruments, opinion, certificates, affidavits and other documents, and to do and cause to be done any and all acts necessary or proper in connection with or for carrying out this resolution and the execution and delivery of the Service Contract and the Lease Agreement, including applying for all appropriate permits, proceeding with the issuance of Borough obligations to fund the initial capital improvements to the Plant and the Incineration Facilities and similar matters.

Section 8. The Mayor, or her designee, is hereby authorized to make all filings and submissions, make all contract revisions as the Mayor, or her designee, may approve as in the best interests of the Borough and not inconsistent with the terms of this resolution, and do or cause to be done any and all other acts and things which may be required by or advisable under applicable law in connection with the review and approval of the Service Contract and the Lease Agreement by United States Environmental Protection Agency and the State of Connecticut Department of Environmental Protection.

Section 9. All actions heretofore taken by the Board with respect to the issuance of a request for proposals, selection of U.S. Filter as the most advantageous proposer negotiation with U. S. Filter of the Term Sheet, and negotiation with U.S. Filter and Naugatuck Environmental Technologies, LLC of the Service Contract and the Lease Agreement respectively, and hereby ratified, confirmed and approved.

Section 10. This resolution shall be effective immediately provided that all contacts specified herein are fully executed by the parties on or before October 25, 2001.

ROLL CALL VOTE

FOR:	**OPPOSED:**	**ABSTAIN:**
L. Ackerman	None	None
R. Burns		
W. Goggin Sr.		
C. Herb		
R. Neth		
P. Scully Sr.		
R. Mezzo		
Mayor Taf		

Motion Carried 8-0-0"

BOROUGH OF NAUGATUCK
JUDITH E. CROSSWAIT, BOROUGH CLERK
229 CHURCH STREET
NAUGATUCK, CT 06770
203 / 720-7008
FAX 203 / 720-7099

August 14, 2002

To Whom It May Concern:

I, **Rosanne Asselin,** do hereby certify that I am the **Assistant Borough Clerk** of the **BOROUGH** of **NAUGATUCK,** a municipal corporation organized and existing under the laws of the State of Connecticut having its principal place of business at **229 Church Street, Naugatuck, Connecticut 06770,** that I have been duly appointed and qualified and am the keeper of the corporate records along with Borough Clerk Judith E. Crosswait and having custody of the seal of the town of **Naugatuck,** hereby certify that the attached are a true, correct and complete copy of :

Two (2) Pages - Resolution of the Borough of Naugatuck, Connecticut, adopted May 14, 2002, authorizing the execution of (1) A First Amendment to the service contract for wastewater treatment system capital improvements and asset management with U.S. Filter Operating Services, Inc. and (2) a First Amendment to the Incineration Facilities Lease Agreement with Naugatuck Environmental Technologies LLC.
As recorded in the May 14, 2002 Minutes of the Special Meeting of the Board of Mayor and Burgesses.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the town of **Naugatuck,** this **14th Day of August 2002 A.D.**

ATTEST:

Rosanne Asselin
Assistant Borough Clerk

cc: File

Motion by Deputy Mayor Mezzo and seconded by Burgess Scully that the Board of Mayor and Burgesses adopt the following resolution:

RESOLUTION OF THE BOROUGH OF NAUGATUCK, CONNECTICUT, ADOPTED MAY 14, 2002, AUTHORIZING THE EXECUTION OF (1) A FIRST AMENDMENT TO THE SERVICE CONTRACT FOR WASTEWATER TREATMENT SYSTEM CAPITAL IMPROVEMENTS AND ASSET MANAGEMENT WITH U.S. FILTER OPERATING SERVICES, INC. AND (2) A FIRST AMENDMENT TO THE INCINERATION FACILITIES LEASE AGREEMENT WITH NAUGATUCK ENVIRONMENTAL TECHNOLOGIES, LLC.

WHEREAS, The Borough of Naugatuck (the "Borough"), the Water Pollution Control Authority of the Borough of Naugatuck ("WPCA") and U.S. Filter Operating Services, Inc. ("U.S. Filter") have heretofore executed a Service Contract for Wastewater Treatment System Capital Improvements and Asset Management dated as of October 25, 2001 (the "Service Contract"); and

WHEREAS, the Borough, the WPCA, and Naugatuck Environmental Technologies, LLC have heretofore executed an Incineration Facilities Lease Agreement dated October 25, 2001 (the "Lease Agreement"); and

WHERES, in the course of completing their Approval Period responsibilities under each contract, the parties have determined that certain provisions of the Service Contract and the Lease Agreement should be clarified or modified.

NOW, THEREFORE, THE BOARD OF MAYOR AND BURGESSES OF THE BOROUGH OF NAUGATUCK, CONNECTICUT, HEREBY RESOLVES AS FOLLOWS:

Section 1. The Mayor, or her designee, be and she is hereby authorized to execute and deliver (1) the First Amendment to the Service Contract with U.S. Filter, as modified by the riders to such First Amendment relating to the scope of U.S. Filter's Collection System responsibilities under the Service Contract (the "First Amendment to the Service Contract"), and (2) the First Amendment to the Lease Agreement with Naugatuck Environmental Technologies, LLC (the "First Amendment to the Lease Agreement") the First Amendment to the Service Contract and the First Amendment to the Lease Agreement shall be substantially in the forms presented at this meeting with such amendments, modifications, changes and omissions thereto as the Mayor, or her designee, may approve as in the best interests of the Borough and not inconsistent with the terms of this resolution. The execution of the First Amendment to the Lease Agreement shall constitute conclusive evidence of the valid authorization hereunder of any such amendment, modification, change or omission.

Section 2. The Mayor, or her designee, is hereby authorized to execute and deliver any and all other papers, instruments, opinions, certificates, affidavits and other documents,

and to do and cause to be done any and all acts necessary or proper in connection with or for carrying out this resolution and the execution and delivery of the First Amendment to the Service Contract and the First Amendment to the Lease Agreement.

Section 3. This resolution shall be effective immediately.

ROLL CALL VOTE

FOR:		**OPPOSED:**	**ABSTAIN:**
L. Ackerman	R. Mezzo	W. Goggin Sr.	None
R. Neth	Mayor Taf	P. Scully Sr.	
R. Woodfield			

Motion Carried 5-2-0

BOROUGH OF NAUGATUCK
JUDITH E. CROSSWAIT, BOROUGH CLERK
229 CHURCH STREET
NAUGATUCK, CT 06770
203 / 720-7008
FAX 203 / 720-7099

August 14, 2002

To Whom It May Concern:

I, **Rosanne Asselin,** do hereby certify that I am the **Assistant Borough Clerk** of the **BOROUGH** of **NAUGATUCK,** a municipal corporation organized and existing under the laws of the State of Connecticut having its principal place of business at **229 Church Street, Naugatuck, Connecticut 06770,** that I have been duly appointed and qualified and am the keeper of the corporate records along with Borough Clerk Judith E. Crosswait and having custody of the seal of the town of **Naugatuck,** hereby certify that the attached are a true, correct and complete copy of :

Pages 278 & 279 - Resolution of the Water Pollution Control Authority of the Borough of Naugatuck, Connecticut, adopted May 16, 2002, authorizing the execution of (1) A First Amendment to the service contract for wastewater treatment system capital improvements and asset management with U.S. Filter Operating Services, Inc. and (2) a First Amendment to the Incineration Facilities Lease Agreement with Naugatuck Environmental Technologies.
As recorded in the May 16, 2002 Minutes of the Regular Meeting of the Water Pollution Control Authority

In Witness Whereof, I have hereunto set my hand and affixed the seal of the town of **Naugatuck,** this **14th Day of August 2002 A.D.**

ATTEST:

Rosanne Asselin
Assistant Borough Clerk

cc: File

Motion was made by Rimas Balsys and seconded by Erik Krueger to table this matter to the next meeting.

Discussion: None **Vote: 3 in favor** **Abstained: 0** **Opposed: 0**

8. **Sewer Connection, Use and Assessment Fee discussion**
Sewer Use Fee
Jim Stewart stated that the Town of Naugatuck bills Beacon Hill East Condos and some Beacon Falls residents $125.00 per unit per year for sewer use. The residents of the Town of Naugatuck do not pay a sewer use fee. Discussion was held on ways to calculate an appropriate sewer use fee. Additional research will be done concerning this matter.

Sewer Connection Fee
Jim Stewart stated that there is $2,500 sewer connection fee in the Prospect/North Main Street area. Jim stated he would like to make the fee town wide. Additional research will be done concerning this matter.

Motion was made by Erik Krueger and seconded by Rimas Balsys to add to the agenda: First Amendment to the Service Contract for Wastewater Treatment System Capital Improvements and Asset Management

Discussion: None **Vote: 3 in favor** **Abstained: 0** **Opposed: 0**

Discussion was held concerning the First Amendment to the Service Contract for Wastewater Treatment System Capital Improvements and Asset Management.

Erik Krueger made a motion that the following be adopted: Resolution of the Water Pollution Control Authority of the Borough of Naugatuck, Connecticut, adopted May 16, 2002, authorizing the execution of (1) a First Amendment to the Service Contract for Wastewater Treatment System Capital Improvements and Asset Management with U.S. Filter Operating Services, Inc. and (2) First Amendment to the Incineration Facilities Lease Agreement with Naugatuck Environmental Technologies.

WHEREAS, the Borough of Naugatuck (the "Borough"), the Water Pollution Control Authority of the Borough of Naugatuck ("WPCA") and U.S. Filter Operating Services, Inc. ("U.S. Filter") has heretofore executed a Service Contract for Wastewater Treatment System Capital Improvements and Asset Management dated as of October 25, 2001 (the "Service Contract"); and

WHEREAS, the Borough, the WPCA, and Naugatuck Enviromental Technologies, LLC have heretofore executed an Incineration Facilities Lease Agreement dated as of October 25, 2001 (the "Lease Agreement"); and

WHEREAS, in the course of completing their Approval Period responsibilities under each contract, the parties have determined that certain provisions of the Service Contract and the Lease Agreement should be clarified or modified.

NOW, THEREFORE, THE BOARD OF THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, CONNECTICUT, HEREBY RESOLVES AS FOLLOWS:

Section 1. The Chairman, or his designee, be and he is hereby authorized to execute and deliver (1) the First Amendment to the Service Contract with U.S. Filter to such First Amendment relating to the scope of U.S. Filter's Collection System responsibilities under the Service Contract (the "First Amendment to the Service Contract"), and (2) the First Amendment to the Lease Agreement with Naugatuck Environmental Technologies, LLC (the "First Amendment to the Lease Agreement"). The First Amendment to the Service Contract and the First Amendment to the Lease Agreement shall be substantially in the forms presented at this meeting with such amendments, modifications, changes and omissions thereto as the Chairman, or his designee, may approve as in the best interest of the WPCA and not inconsistent with the terms of this resolution. The execution of the First Amendment to the Service Contract and the First Amendment to the Lease Agreement shall constitute conclusive evidence of the valid authorization hereunder of any such amendment, modification, change or omission.

Section 2. The Chairman, or his designee, is hereby authorized to execute and deliver any and all other papers, instruments, opinions, certificates, affidavits and other documents, and to do and cause to be done any and all acts necessary or proper in connection with or for carrying out this resolution and execution and delivery of the First Amendment to the Service Contract and the First Amendment to the Lease Agreement.

Section 3. This resolution shall be effective immediately.

The adoption of the foregoing resolution was seconded by Board Member Rimas Balsys and duly put to a vote on roll call, which resulted as follows:

AYES:	**NOES**
Rimas Balsys	**None**
Ronald Merancy	
Erik Krueger	

The resolution was declared adopted.

DOC 2

Document No. 2

CERTIFICATE OF NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC AS TO APPROVAL PERIOD RESPONSIBILITIES

Pursuant to subsections 4.1(A)(8) and 4.1(A)(12) of the Incineration Facilities Lease Agreement among the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough of Naugatuck, Connecticut and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee"), dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement"; capitalized terms used but not defined herein are as defined in the Lease Agreement), the undersigned, Joseph J. Tomashosky, in his capacity as Vice President of the Lessee, being familiar with the provisions of the Lease Agreement, hereby certify to the Lessor that, on the basis of information reasonably available to him:

1. As of the date hereof, the Lessee is in substantial compliance with all laws, regulations, rules and orders applicable to its business, noncompliance with which would have a material and adverse effect upon its business or its ability to perform its obligations under the Lease Agreement.

2. The representations of the Lessee set forth in Section 2.2 of the Lease Agreement are true and correct in all material respects as of the date hereof as if made on and as of such date.

3. Attached hereto as Exhibit A are true copies of the Lessee's Articles of Organization, certified resolution(s) authorizing the Lease Agreement and an incumbency certificate.

IN WITNESS WHEREOF, the undersigned has caused this Certificate to be executed as of the 15th day of August, 2002.

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By:_____
Joseph J. Tomashosky
Vice President

Exhibit A

Articles of Organization, Certified Authorizing Resolution(s) and Incumbency Certificate

ARTICLES OF ORGANIZATION

Domestic Limited Liability Company
Office of the Secretary of the State
30 Trinity Street / P.O. Box 150470 / Hartford, CT 06115-0470 / Rev. 12/1999

Please see reverse for instructions

Space for office use only

1. NAME OF THE LIMITED LIABILITY COMPANY:

Naugatuck Environmental Technologies LLC

2. NATURE OF BUSINESS TO BE TRANSACTED OR THE PURPOSES TO BE PROMOTED OR CARRIED OUT:

The transportation and treatment of water and wastewater treatment residuals, septage, and other residuals, and any other lawful act or activity for which a limited liability company may be formed under the Connecticut Limited Liability Company Act.

3. PRINCIPAL OFFICE ADDRESS: (Provide complete address. See instructions for further details.)

500 Cherry Street, Naugatuck, CT 06770

4. APPOINTMENT OF STATUTORY AGENT FOR SERVICE OF PROCESS:

Name of agent:	Business address: (P.O. Box is not acceptable)
C T Corporation System	One Commercial Plaza, Hartford, CT 06103
	Residence address: (P.O. Box is not acceptable)

Acceptance of appointment

C T Corporation System
By: Margaret E. Routzahn MARGARET E. ROUTZAHN
Special Assistant Secretary
Signature of agent

5. MANAGEMENT:

(Place a check mark next to the following statement *only* if it applies)

X The management of the limited liability company shall be vested in one or more managers.

6. EXECUTION:

Donald R. Rodgers, Jr.	Donald R. Rodgers Jr.
Print or type name of organizer	Signature

Secretary of the State
30 Trinity Street
Hartford, CT 06106

DESIGNATION OF ADDRESS
Limited Liability Company

Pursuant to P.A. 93-267 §71(b) of the Connecticut General Statutes,

Naugatuck Environmental Technologies LLC
(name of business)

a limited liability company organized and existing under the laws of the State of

Connecticut , and having its principal office at
(name of state or jurisdiction)

500 Cherry Street, Naugatuck, CT 06770
(street number, if any; street; city; state)

respectfully requests that all matters required or permitted by Connecticut Public Act 93-267 be mailed to it by the Secretary of the State to the following address, and to no other address of the business:

40-004 Cook Street
Palm Desert, CA
92211

IN WITNESS WHEREOF, said limited liability company has caused this certificate to be

signed by its President on this 30th
Capacity of Signatory

day of August, 2001.

Donald R. Rodgers, Jr.
Print Name

Donald R Rodgers, Jr.
(Signature)

Rev. 10/93
J150.11

BUSINESS FILING REPORT

WORK ORDER NUMBER:2001155473-007
BUSINESS FILING NUMBER: 0002316206

BUSINESS NAME:

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC

BUSINESS LOCATION:

500 CHERRY STREET
NAUGATUCK,CT 06770

** END OF REPORT **

SECRETARY OF THE STATE
30 TRINITY STREET
P.O. BOX 150470
HARTFORD, CT 06115-0470

SEPTEMBER 10,2001

GARY
CT CORPORATION SYSTEM
ONE COMMERCIAL PLAZA
HARTFORD, CT 06103-3597

RE: Acceptance of Business Filing

This letter is to confirm the acceptance of the following business filing:

Business Name:
NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC

Work Order Number: 2001155473-007
Business Filing Number: 0002316206
Type of Request: ARTICLES OF ORGANIZATION
File Date/Time: SEP 07 2001 02:27 PM
Effective Date/Time:
Work Order Payment Received: 1750.00
Payment Received: 85.00
Account Balance: 23505.00
Customer Id: 007625
Business Id: 0690008

If applicable for this type of request, a summary of the business information now on our records for this business is enclosed.

If you would like copies of this filing you must complete a Request for Corporate Copies and submit it with the appropriate fee.

FRANK GOULD
Commercial Recording Division
860-509-6003

61-66
Rev. 2/94

Office of the Secretary of the State of Connecticut

I, the Connecticut Secretary of the State, and keeper of the seal thereof, DO HEREBY CERTIFY, that

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC

organized under the laws of Connecticut as a Limited Liability Company, was filed in this office on September 7, 2001 and is in existence as of the date of this certificate.

Susan Bysiewicz

Secretary of the State

Date Issued: May 29, 2002

61-66
Rev. 2/94

Office of the Secretary of the State of Connecticut

I, the Connecticut Secretary of the State, and keeper of the seal thereof, DO HEREBY CERTIFY, that

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC

organized under the laws of Connecticut as a Limited Liability Company, was filed in this office on September 7, 2001 and is in existence as of the date of this certificate.

Secretary of the State

Date Issued: August 5, 2002

Certification of Secretary:

The undersigned, T. Michael O'Brien, the duly appointed Vice President and Secretary of Naugatuck Environmental Technologies LLC (the "Company"), a limited liability company organized pursuant to the laws of the State of Connecticut, hereby certifies that the foregoing is a true and correct copy of the **RESOLUTION** of the Managers of the Company dated October 10, 2001, and that except as set forth in the Amended and Restated Consent of Manager to Resolution of Managers dated as of April 1, 2002, such **RESOLUTION** and actions taken thereby have not in any way been modified, repealed or rescinded, but remain in full force and effect.

IN WITNESS WHEREOF, I have set my hand and seal of the Company this 15th day of August, 2002.

By: _____
T. Michael O'Brien
Vice President and Secretary

SEAL

RESOLUTIONS OF THE MEMBERS
OF THE MANAGEMENT COMMITTEE
OF NAUGATUCK ENVIRONMENTAL TECHNOLOGIES, L.L.C.

October 10, 2001

The undersigned, being all of the Managers of Naugatuck Environmental Technologies, L.L.C., a Connecticut limited liability company (the "Company"), hereby consent to the taking of the following action in lieu of a meeting of the Management Committee of the Company and hereby waive any notice whatsoever required to be given in connection therewith.

WHEREAS, this Company is in the business of engaging in the transportation and treatment of water and wastewater treatment residuals, septage, and other residuals, and any other lawful business purpose or activity for which a limited liability company may be formed under the Connecticut Limited Liability Company Act, except as restricted by such Act;

BE IT RESOLVED that the Managers of the Company have been given the following authority:

General Authority. Except for situations in which the approval of the Members is required under Section 5.2(c) of the Company's Operating Agreement or by applicable law, (i) the powers of the Company shall be exercised by or under the authority of, and the business and affairs of the Company shall be managed under the direction of, the Managers; and (ii) the Managers may make all decisions and take all actions for the Company not otherwise provided in the Company's Operating Agreement, including, without limitation, the following:

(a) entering into, making, and performing contracts, agreements, and other undertakings binding the Company that may be necessary, appropriate, or advisable in furtherance of the purposes of the Company and making all decisions and waivers thereunder;

(b) opening and maintaining bank and investment accounts and arrangements, drawing checks and other orders for the payment of money, and designating individuals with authority to sign or give instructions with respect to those accounts and arrangements;

(c) maintaining the assets of the Company in good order;

(d) collecting sums due the Company;

(e) to the extent that funds of the Company are available therefor, paying debts and obligations of the Company;

(f) acquiring, utilizing for Company purposes, and selling, assigning, transferring, exchanging, mortgaging, pledging, granting of security interests, or otherwise disposing or encumbering (including, without limitation, by operation of law) any asset of the Company;

(g) borrowing money or otherwise committing the credit of the Company for Company activities and voluntary prepayments or extensions of debt;

(h) selecting, removing, and changing the authority and responsibility of lawyers, accountants, and other advisers and consultants;

(i) obtaining insurance for the Company; and

(j) determining distributions of Company cash and other property as provided in Article VI of the Company's Operating Agreement.

The Managers hereby delegate the authorization to approve expenditures, subject to the following limitations: (1) the authority to approve expenditures within the annual budget or annual capital budget adopted by the Managers is hereby delegated to the President or any Vice President of the Company, subject to an expenditure limit of $250,000.00, and the authority to approve expenditures within the annual budget or annual capital budget adopted by the Managers is hereby delegated to Richard Lavoie, serving as Project Manager, in an amount of up to $100,000.00; (2) the authority to approve expenditures in excess of the annual budget or annual capital budget adopted by the Managers shall require the approval of a majority of the Managers.

The Managers further delegate the authorization to sign checks on behalf of the Company in accordance with the following provisions and limitations: (1) the authority to sign checks in an amount up to $10,000 is hereby delegated to the Treasurer or any Assistant Treasurer; (2) the authority to sign checks in an amount equal to or greater than $10,000 is delegated to the Treasurer and Assistant Treasurers and shall require the signature of at least two (2) officers who have been designated as the Treasurer or Assistant Treasurer of the Company or two signatures of a Treasurer or Assistant Treasurer of the Company in combination with a Manager of the Company.

BE IT FURTHER RESOLVED, that the following individuals are elected to serve as officers of the Company in the following capacities until their successors are duly elected and qualified or until their earlier resignation:

Donald R. Rogers, Jr.	President
W. Christopher Chisholm	Vice President, Controller and Treasurer
Kent S. Richardson	Treasurer

Joseph J. Tomashosky	Vice President and Assistant Treasurer
G. Douglas Eichman	Assistant Treasurer
William P. McCormick	Assistant Treasurer
Brian J. Clarke	Vice President and Secretary
Steven J. Kruger	Vice President
Thomas A. Witt	Assistant Secretary
Duane R. Huennekens	Assistant Secretary
Lisabeth W. Huddleston	Assistant Secretary

BE IT FURTHER RESOLVED, that the Treasurer and Assistant Treasurers or any agent appointed in writing by the Treasurer of the Company are authorized for and on behalf of the Company:

(1) To open checking accounts with banks or other financial institutions and to sign any and all checks, drafts, orders or their instruments for payment of money, including orders or directions, in informal or letter form, against any funds or accounts at any time standing to the credit of the Company and authorize said banks or other financial institutions to honor any and all checks, drafts and orders so signed or which include the facsimile signature of any such individual, howsoever such facsimile signature is affixed, including those drawn to the individual order of any such person or persons signing the same, without further inquiry or regard to the authority of said person or persons or the use of the checks, drafts, orders or other instruments or payment of money, or the proceeds thereof, consistent with the signature authority granted herein;

(2) To identify, approve and/or guarantee the endorsement of any payee of endorser of any checks, drafts, or orders for the payment of money drawn by the Company on said banks or other financial institutions aforesaid; and

(3) To waive presentment, demand, protest and/or notice of dishonor or protest and to give instructions in regard to handling or delivery of any negotiable or nonnegotiable papers or documents involved in any transaction authorized by these resolutions.

WHEREAS, the Secretary and Assistant Secretaries, in connection with bidding on projects, are from time to time required to supply a certificate concerning the express authority of officers of the Company to execute bids, contracts and other documents; and

WHEREAS, in order to enable the Secretary or Assistant Secretaries to provide such a certificate to customers and clients of the Company without the need to have a specific resolution passed by this Board for each contract; now therefore it is:

RESOLVED, that any employee elected to serve as an officer of the Company and any employee designated in writing by an officer of the Company to have authority to act on behalf of the Company is expressly authorized and empowered to execute bids, contracts, leases, and financial, credit, and other legal documents on behalf of the Company. The Secretary or any

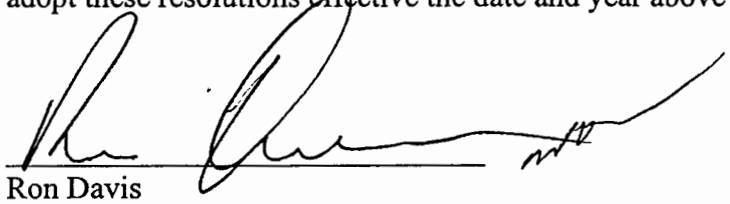
Assistant Secretary is further authorized and empowered to attest to such documents and to affix the company seal thereto; and

WHEREAS, the Company intends to have installed waste incineration facilities to provide incineration services to the Borough of Naugatuck, Connecticut and to other parties, and

WHEREAS, the Company will install and operate incineration facilities on property provided by the Borough of Naugatuck;

BE IT FURTHER RESOLVED that Donald R. Rodgers, Jr. and Ron Davis, specifically, and any of the duly elected officers of the Company, are hereby authorized to approve and execute the Lease Agreement by and between the Company and the Borough of Naugatuck and the Shared Services Agreement by and between the Company and U.S. Filter Operating Services, Inc. and to further approve and execute all further and ancillary commitments, contracts, leases and other related documents in furtherance of the transactions related to the installation and operation of the incinerator facility.

The undersigned, being all of the Managers of the Company, hereby unanimously ratify and adopt these resolutions effective the date and year above stated.



Ron Davis

Brian J. Clarke

W. Christopher Chisholm

Assistant Secretary is further authorized and empowered to attest to such documents and to affix the company seal thereto; and

WHEREAS, the Company intends to have installed waste incineration facilities to provide incineration services to the Borough of Naugatuck, Connecticut and to other parties, and

WHEREAS, the Company will install and operate incineration facilities on property provided by the Borough of Naugatuck;

BE IT FURTHER RESOLVED that Donald R. Rodgers, Jr. and Ron Davis, specifically, and any of the duly elected officers of the Company, are hereby authorized to approve and execute the Lease Agreement by and between the Company and the Borough of Naugatuck and the Shared Services Agreement by and between the Company and U.S. Filter Operating Services, Inc. and to further approve and execute all further and ancillary commitments, contracts, leases and other related documents in furtherance of the transactions related to the installation and operation of the incinerator facility.

The undersigned, being all of the Managers of the Company, hereby unanimously ratify and adopt these resolutions effective the date and year above stated.

_____

Ron Davis

_____

Brian J. Clarke

_____

W. Christopher Chisholm

Assistant Secretary is further authorized and empowered to attest to such documents and to affix the company seal thereto; and

WHEREAS, the Company intends to have installed waste incineration facilities to provide incineration services to the Borough of Naugatuck, Connecticut and to other parties, and

WHEREAS, the Company will install and operate incineration facilities on property provided by the Borough of Naugatuck;

BE IT FURTHER RESOLVED that Donald R. Rodgers, Jr. and Ron Davis, specifically, and any of the duly elected officers of the Company, are hereby authorized to approve and execute the Lease Agreement by and between the Company and the Borough of Naugatuck and the Shared Services Agreement by and between the Company and U.S. Filter Operating Services, Inc. and to further approve and execute all further and ancillary commitments, contracts, leases and other related documents in furtherance of the transactions related to the installation and operation of the incinerator facility.

The undersigned, being all of the Managers of the Company, hereby unanimously ratify and adopt these resolutions effective the date and year above stated.

_____

Ron Davis

_____

Brian J. Clarke

_____

W. Christopher Chisholm

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC
CONSENT OF SOLE MEMBER / ACTION OF SOLE MEMBER

April 1, 2002

The undersigned, being the sole Member and Majority-In-Interest of Naugatuck Environmental Technologies LLC, a Connecticut limited liability company (the "Company"), does hereby consent to the taking of the following actions in lieu of a meeting of the Members, and does hereby take the following actions pursuant to the Naugatuck Environmental Technologies LLC Operating Agreement dated October 10, 2001 (the "Operating Agreement"):

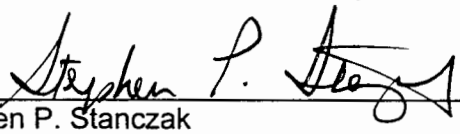
1. Effective upon April 1, 2002, pursuant to Section 5.1(c) of the Operating Agreement, W. Christopher Chisholm and Ron Davis are removed as Managers, and the following persons are appointed as Managers:

T. Michael O'Brien
Donald R. Rodgers, Jr.

Brian J. Clarke shall continue to serve as a Manager.

WITNESS the due execution hereof as of April 1, 2002:

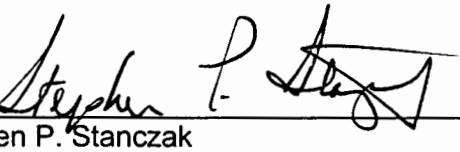
U.S. FILTER WASTEWATER GROUP, INC.

By: 
Stephen P. Stanczak
Vice President and Assistant Secretary

Certification of Secretary:

The undersigned, Stephen P. Stanczak, the duly appointed Vice President and Assistant Secretary of U.S. Filter Wastewater Group, Inc. ("Corporation"), a corporation organized pursuant to the laws of the State of Delaware, hereby certifies that the foregoing is a true and correct copy of the Consent of Sole Member/Action of Sole Member taken as of April 1, 2002, and that such Consent of Sole Member/Action of Sole Member has not in any way been modified, repealed or rescinded, but remains in full force and effect.

IN WITNESS WHEREOF, I have set my hand and seal of the Corporation this 12th day of August, 2002.

By: 
Stephen P. Stanczak
Vice President and Assistant Secretary

SEAL

Certification of Secretary:

The undersigned, T. Michael O'Brien, the duly appointed Vice President and Secretary of Naugatuck Environmental Technologies LLC (the "Company"), a limited liability company organized pursuant to the laws of the State of Connecticut, hereby certifies that the foregoing is a true and correct copy of the **AMENDED AND RESTATED CONSENT OF MANAGERS TO RESOLUTION OF MANAGERS** taken as of April 1, 2002, and that such resolution and actions taken thereby have not in any way been modified, repealed or rescinded, but remain in full force and effect.

IN WITNESS WHEREOF, I have set my hand and seal of the Company this 15th day of August, 2002.

By: _____
T. Michael O'Brien
Vice President and Secretary

SEAL

NAUGATUCK ENVIORNMENTAL TECHNOLOGIES LLC
AMENDED AND RESTATED CONSENT OF MANAGERS TO RESOLUTION OF MANAGERS
Effective Date: April 1, 2002

The undersigned, being the Managers of Naugatuck Environmental Technologies LLC, a Connecticut limited liability company (the "Company") do hereby consent to the taking of the following actions in lieu of a meeting of the Managers pursuant to the Naugatuck Environmental Technologies LLC Operating Agreement dated October 10, 2001 (the "Operating Agreement"):

1. RESOLVED, that all actions taken by the Managers and officers of the Company since the last meeting of the Managers be and is hereby ratified, confirmed and adopted.

2. FURTHER RESOLVED, that the following persons be, and they hereby are, elected as officers of the Company, to serve until replaced or removed in accordance with the Operating Agreement, or until his or her resignation, removal or death:

Name	Office
Donald R. Rodgers, Jr.	President
Brian J. Clarke	Vice President and Assistant Secretary
T. Michael O'Brien	Vice President and Secretary
Steven J. Kruger	Vice President
Joseph J. Tomashosky	Vice President
Kent S. Richardson	Treasurer
Lisabeth W. Huddleston	Assistant Secretary
Duane R. Huennekens	Assistant Secretary
Thomas A. Witt	Assistant Secretary
Douglas Eichman	Assistant Treasurer
William P. McCormick	Assistant Treasurer

2. FURTHER RESOLVED, that any officer of the Company, or any other person or persons who may from time to time be so authorized in writing by any such officer of the Company, is hereby authorized, empowered, and directed, in the name and on behalf of the Company and under its seal where required, to take such action, execute such documents, and do such other acts and things as may be reasonably determined by such officer to be necessary and convenient to carry out the purposes and intent of the Company.

3. FURTHER RESOLVED, that the officers of the Company are authorized to sign, execute, certify to, verify, acknowledge, deliver, accept, file and record any and all instruments and documents and to take or cause to be taken any and all such action in the name and on behalf of the Company or otherwise, as in such officer's judgment shall be necessary, desirable, or appropriate in order to effect the purposes of the foregoing resolutions.

WITNESS the due execution hereof as of the Effective Date set forth above:

Brian J. Clarke

T. Michael O'Brien

Donald R. Rodgers, Jr.

NAUGATUCK ENVIORNMENTAL TECHNOLOGIES LLC
AMENDED AND RESTATED CONSENT OF MANAGERS TO RESOLUTION OF MANAGERS
Effective Date: April 1, 2002

The undersigned, being the Managers of Naugatuck Environmental Technologies LLC, a Connecticut limited liability company (the "Company") do hereby consent to the taking of the following actions in lieu of a meeting of the Managers pursuant to the Naugatuck Environmental Technologies LLC Operating Agreement dated October 10, 2001 (the "Operating Agreement"):

1. RESOLVED, that all actions taken by the Managers and officers of the Company since the last meeting of the Managers be and is hereby ratified, confirmed and adopted.

2. FURTHER RESOLVED, that the following persons be, and they hereby are, elected as officers of the Company, to serve until replaced or removed in accordance with the Operating Agreement, or until his or her resignation, removal or death:

Name	Office
Donald R. Rodgers, Jr.	President
Brian J. Clarke	Vice President and Assistant Secretary
T. Michael O'Brien	Vice President and Secretary
Steven J. Kruger	Vice President
Joseph J. Tomashosky	Vice President
Kent S. Richardson	Treasurer
Lisabeth W. Huddleston	Assistant Secretary
Duane R. Huennekens	Assistant Secretary
Thomas A. Witt	Assistant Secretary
Douglas Eichman	Assistant Treasurer
William P. McCormick	Assistant Treasurer

2. FURTHER RESOLVED, that any officer of the Company, or any other person or persons who may from time to time be so authorized in writing by any such officer of the Company, is hereby authorized, empowered, and directed, in the name and on behalf of the Company and under its seal where required, to take such action, execute such documents, and do such other acts and things as may be reasonably determined by such officer to be necessary and convenient to carry out the purposes and intent of the Company.

3. FURTHER RESOLVED, that the officers of the Company are authorized to sign, execute, certify to, verify, acknowledge, deliver, accept, file and record any and all instruments and documents and to take or cause to be taken any and all such action in the name and on behalf of the Company or otherwise, as in such officer's judgment shall be necessary, desirable, or appropriate in order to effect the purposes of the foregoing resolutions.

WITNESS the due execution hereof as of the Effective Date set forth above:

Brian J. Clarke

T. Michael O'Brien

Donald R. Rodgers, Jr.

DOC 3

Document No. 3

ESTOPPEL CERTIFICATE OF
NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC
AS TO FLUID BED PERMIT

The undersigned, Donald R. Rodgers, Jr., in his capacity as President of Naugatuck Environmental Technologies LLC (the "Lessee") being familiar with the provisions of the Incineration Facilities Lease Agreement among the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough of Naugatuck, Connecticut and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee"), dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement") hereby certify to the Lessor as follows. (For purposes of this certificate, capitalized terms used but not defined herein are as defined as set forth in the Lease Agreement.)

1. The Lessee received from the Lessor the State air permit to construct and operate the fluidized bed incinerator portion of the Initial Capital Improvements, entitled "New Source Review Permit to Construct and Operate a Stationary Source", Permit Number 0081, issued by the DEP on April 1, 2002 (the "Fluid Bed Permit"), a true copy of which is attached to this Record of Proceedings as Document Number 5.

2. In obtaining the Fluid Bed Permit, the Lessor has satisfied the Lessor's obligations under Section 4.2(2) of the Lease Agreement.

3. Subject to paragraph 4 below and the Lessee's satisfying its other necessary conditions to construct and operate the fluidized bed incinerator portion of the Initial Capital Improvements under the Lease Agreement, the terms, conditions and requirements of the Fluid Bed Permit provide sufficient authority to construct and operate the fluidized bed incinerator portion of the Initial Capital Improvements under the Lease Agreement and do not constitute a "Change in Law" under the Lease Agreement as to which the Lessor intends to seek price, schedule or performance relief under Section 14.2 of the Lease Agreement.

4. To the extent that the Fluid Bed Permit references to and incorporates the requirements of various Federal and State regulations and guidelines, all such references are deemed to be such regulations and guidelines in effect as of the Contract Date, and the Lessee reserves the right to assert that any change in the requirements imposed by such regulations or guidelines in effect as of the Contract Date, to the extent incorporated into the Fluid Bed Permit, constitute a "Change in Law" under the Lease Agreement. To the extent that the Fluid Bed Permit purports to allow the DEP to amend or modify the Fluid Bed Permit, the Lessee further reserves the right assert that any such amendment or modification constitutes a "Change in Law" under the Lease Agreement.

IN WITNESS WHEREOF, the undersigned has caused this Certificate to be executed as of the 15th day of August, 2002.

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By: _____
Joseph J. Tomashosky
Vice President

DOC 4

VIVENDI
Environnement

CLOSING CERTIFICATE OF
VIVENDI ENVIRONNEMENT, S.A.

Pursuant to Sections 4.1(A)(9) and 4.1(A)(12) of the Incineration Facilities Lease Agreement dated as of October 25, 2001 (the "Lease Agreement"), between the Borough of Naugatuck, Connecticut, a political subdivision organized and existing under the laws of the State of Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck, a water pollution control authority established by the Borough of Naugatuck pursuant to Chapter 103 of the Connecticut General Statutes (the Borough of Naugatuck and the Water Pollution Control Authority of the Borough of Naugatuck are collectively referred to herein as the "Lessor"), and Naugatuck Environmental Technologies LLC, a limited liability corporation organized and existing under the laws of the State of Connecticut and authorized to do business in the State of Connecticut, and in connection with the related Guaranty Agreement from Vivendi Environnement, S.A. ("Guarantor") to the Borough dated October 25, 2001 (the "Guaranty"), the undersigned, Jérôme Contamine, in his capacity as Chief Financial Officer, being familiar with the provisions of the Lease Agreement, hereby certifies to the Lessor that, on the basis of information reasonably available to him:

1. The Guaranty is and remains in full force and effect.

2. The representations of the Guarantor set forth in Section 2.1 of the Guaranty are true and correct in all material respects as of the Commencement Date, as defined in the Lease Agreement.

IN WITNESS WHEREOF, the undersigned has caused to be executed this certificate as of the 15th day of August 2002.

VIVENDI ENVIRONNEMENT, S.A.

By: _____

Name: Jérôme Contamine

Title: Chief Financial Officer

SIÈGE SOCIAL
36, avenue Kléber
75799 Paris Cedex 16 / France

ADRESSE PROVISOIRE
52, rue d'Anjou
75384 Paris Cedex 08 / France

SOCIÉTÉ ANONYME À DIRECTOIRE ET CONSEIL DE SURVEILLANCE
au capital de 4 673 361 892,50 €
RCS PARIS 403 210 032

DOC 5

Document No. 5

PRIVATE MANAGEMENT APPROVAL

A. Letter of G. Tracy Mahan, III, Assistant Administrator of the United States Environmental Protection Agency, dated January 29, 2002.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 29 2002

OFFICE OF WATER

Honorable Joan B. Taf
Mayor
Borough of Naugatuck
Borough Hall
229 Church Street
Naugatuck, CT 06770

Dear Mayor Taf:

I am pleased to approve the Borough of Naugatuck's request to privatize its Federally-funded wastewater treatment facilities under its agreements with U.S. Filter Operating Services, Inc. (USFOS) and Naugatuck Environmental Technologies, LLC (NET). Since these agreements constitute a disposition of the federal interest under Executive Order (E.O.) 12803, the Environmental Protection Agency must review and approve the agreements. A review of these agreements and other documents by the Agency revealed that the criteria set forth in E.O. 12803 have been met by the Borough. Therefore, I am approving your request under the authority provided in Section 3(c) of the Order. This action together with the approval of the following deviations will officially end the federal government's interest in the Borough of Naugatuck's wastewater treatment facilities which received federal grant awards prior to the date of this approval.

The Agency's approval of the proposed 20-year agreements to provide operational services and capital improvements for the Borough's wastewater treatment facilities is conditioned on the Agency's approval of deviations from 18 CFR §601.26(m) (1966) and 18 CFR §601.27(1) (1968) of the Agency's construction grant regulations. I am approving deviations from these regulations under the authority provided in the "Class Deviation for Privatization Approvals" issued on April 14, 2000, by Bruce M. Feldman, Acting Director, Grants Administration Division. This letter shall constitute the Agency's official review and approval of the grant deviations required for the Borough of Naugatuck to enter the proposed arrangements with USFOS and NET.

The Agency's review and approval of the Borough's proposed agreements is based on the "Service Contract for Wastewater Treatment System Capital Improvements and Asset Management among The Borough of Naugatuck and The Water Pollution Control Authority of the Borough of Naugatuck and U. S. Filter Operating Services, Inc.", "Incineration Facilities Lease Agreement among The Borough of Naugatuck, as Lessor, and The Water Pollution Control Authority of the Borough of Naugatuck, as Lessor, and Naugatuck Environmental Technologies, LLC, as Lessee", "Executive Summary Privatization Request For Approval", plus additional information and documents that were provided to the Agency during its review process.

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It is the Agency's understanding that the Borough of Naugatuck's wastewater treatment facilities provide wastewater treatment services to an approximate population of 52,500 people with a wastewater flow of about 5.5 million gallons per day. The facilities provide wastewater treatment service for the Borough and the communities of Middlebury, Oxford, and a portion of Beacon Falls. The facilities utilize activated sludge, nitrification, and partial denitrification processes to treat the wastewater. The facilities' sludge treatment is currently accomplished using two multiple hearth incinerators. The capital improvements to be constructed by USFOS and NET under their service and lease agreements include wastewater treatment upgrades for nitrogen removal, new instrument control systems, odor controls, pumping stations, and replacing the existing multiple hearth sludge incinerators with a fluidized bed sludge incinerator.

The Borough proposes to establish a 20-year service contract with USFOS to manage and upgrade the wastewater treatment operations and a 20-year lease with NET to improve, operate and maintain the sludge treatment facilities as a merchant sludge facility. It is the Borough's goal for the sludge facilities to generate sufficient revenues to offset the wastewater treatment operation and maintenance costs plus the Borough's share of the debt service costs for the capital improvements. The wastewater treatment facilities' capital improvements of approximately $3 million will be accomplished by USFOS and financed under a tax-exempt municipal lease-purchase agreement with a third-party lender. The sludge incinerator's capital improvements of about $23 million will be accomplished by NET and financed by a third-party under a taxable municipal lease-purchase agreement.

The Borough has included various provisions in the agreements to assure continued wastewater services in the event of nonperformance by USFOS or NET. The Borough shall retain ownership, oversight, and permit authority during the period of the service contract and lease agreement. The Borough has notified the State of Connecticut that USFOS and NET will be operating the Borough's wastewater treatment facilities. The Borough will be responsible for the collection of the funds necessary to pay for its share of the debt service costs. The agreements provide the Agency with reasonable assurances that the environment and public health will be protected and the wastewater treatment facilities will continue to serve their intended purpose as set forth in Section 4(b)(i) of E.O. 12803.

The Borough used competitive procurement procedures to select USFOS and NET for negotiations of the final service contract and lease agreement. Therefore, approval of the Borough's service contract and lease agreement by the Director of the Office of Management and Budget was not required under Section 1(d) of E.O. 12803.

The Borough has conducted various public notification activities related to the agreements. The Borough plans to supplement these activities in the future as dictated by specific events and the level of public comments. The level of public notification and hearings have been limited since the Borough anticipates that the service contract and lease agreement will allow the continuation of its current policy of no user costs for wastewater treatment services.

The Borough's goal is to continue its policy of no user costs for the duration of the service contract and lease agreement. However, the Borough has contractual revenue payments from USFOS and NET which assure that the policy of no user costs will be in place for the first five years of the agreements. Thereafter, under a worse case scenario, the Borough will have to pay approximately one-half of the annual debt service costs if there are no distributable revenues available from the incinerator's operations . It is estimated that if the Borough would incur these "worse case" debt service costs, the costs would amount to an annual cost of about $60 per residential household user/tax payer. This potential residential user cost would represent about 0.1 percent of the residential user's current median household income. This level of user costs represents a very low-range financial impact and a very low financial burden on the residential wastewater users according to financial capability guidance published by the Agency. This level of user fees meets the requirements of Section 2(d) and Section 4(b)(ii) of E.O. 12803 which discourages unreasonable increases in such fees.

The Borough will not receive any specified concession payments under the agreements but it will share in any profits generated by the operations of the incineration facilities. The profits generated by the incinerator will be used by the Borough to pursue its policy of no user costs. This action by the Borough meets the conditions of Section 4(a) of E.O. 12803 for the use of concession fees.

The Borough received grant funds of $9,654,550 from the Agency to construct its wastewater treatment facilities. The facilities were placed in service on November 27, 1968 and August 13, 1975. The unamortized Federal grant amounts equal zero using the Internal Revenue Service Modified Accelerated Cost Recovery System (MACRS) depreciation schedules based on the dates the grant projects were placed in service. Therefore, the Borough does not have to reimburse any grant funds to the Federal government under Section 3(c) of E.O. 12803.

Thank you for the materials and assistance your staff have provided the Agency in our review of the Borough of Naugatuck's application to privatize its Federally-funded wastewater treatment facilities under E.O. 12803.

I want to convey my best wishes to the Borough of Naugatuck for the successful execution of its service contract and lease agreement with USFOS and NET to operate and upgrade the Borough's wastewater treatment facilities. If you have any questions about this approval, please feel free to contact me or have your staff call Haig Farmer of the Municipal Support Division at (202) 564-0592.

Sincerely,

G. Tracy Mehan, III
Assistant Administrator

Doc 6

Document No. 6

STATE AIR PERMIT TO CONSTRUCT FLUIDIZED BED INCINERATOR

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APR 0 1 2002

Ms. Dorothy K. Austin, P.E.
Alternative Resources, Inc.
9 Pond Lane
Concord, MA 01742

Dear Ms. Austin:

Enclosed is a certified copy of the Borough of Naugatuck original permit to construct and operate a fluidized bed sewage sludge incinerator at 500 Cherry Street in Naugatuck, CT.

This letter does not relieve you of the responsibility to comply with the requirements of other appropriate Federal, State, and municipal agencies. The permit is not transferable from one permittee to another (without prior written notification), from one location to another (unless the subject equipment is a portable rock crusher or stripping facility), or from one piece of equipment to another. The permit must be posted for easy access at the site of operation.

Permit renewal applications must be filed at least one hundred twenty (120) days prior to the permit expiration date, if applicable. Pursuant to Section 22a-174-3a of the Regulations of Connecticut State Agencies, the Borough of Naugatuck must apply for a permit modification in writing if it plans any physical change, change in method of operation, or addition to this source which constitutes a "modification" as defined in Section 22a-174-1. Any such changes should first be discussed with Mr. Allan B. Pilver of the Bureau of Air Management, by calling (860) 424-3686. Such changes shall not commence prior to the issuance of a permit modification.

Sincerely,

Gary S. Rose

Gary S. Rose
Director
Engineering and Technical Services
Bureau of Air Management

GSR:jad
Enclosure

APR – 3

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE
A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statues and Section 22a-174-3a of the Regulations of Connecticut State Agencies.

Owner/Operator:	Borough of Naugatuck
Address:	229 Church Street Naugatuck, CT 06770
Premises Location:	500 Cherry Street Naugatuck, CT 06770
Equipment Description:	Zimpro fluidized bed sewage sludge incinerator

Permit Number:	0081
Town/Premises Numbers:	109/11
Permit Issue Date:	APR 0 1 2002
Expiration Date:	

Arthur J. Rocque, Jr.
Commissioner

4/1/02
Date

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART I. PROCESS DESCRIPTION

A. General Process Description

The Zimpro fluidized bed incinerator has a sludge design feed rate of 3.125 DT/hr. Sludge is fed to the bottom of the sand bed where air is injected at high pressure under the bed, fluidizing the sand and the sludge. Processing of sludge within the sand bed consists of evaporation of water and pyrolysis of organic material. The remaining carbon and combustible gases are burned in the freeboard area above the sand bed. Oil lances are located within the sand bed in order to deliver auxiliary fuel to maintain the desired combustion temperature if necessary. All ash generated in the combustion chamber leaves the top of the incinerator.

The incinerator includes a sludge dryer system integral to the incinerator, to reduce the consumption of auxiliary fuel. The sludge dryer system is used to evaporate water from the sludge prior to injecting the sludge into the incinerator. A waste heat recovery unit extracts heat from the incinerator flue gas to generate steam or heat a thermal oil transfer fluid. The steam or hot oil is used to indirectly heat the sludge in the dryer. Water is evaporated from the heated sludge and is collected by cooling. The non-condensable exhaust gases from the dryer are fed to the incinerator; therefore, the dryer does not generate any air emissions directly to the atmosphere. The dried sludge is then fed to the incinerator where it is combusted with a reduced need for auxiliary fuel.

A single burner is located near the air injection at the bottom of the bed. This burner is used to pre-heat the incinerator during start up. Lances are used to inject fuel into the bed to control bed temperature. Higher fuel injection rates are necessary when sludge solids content are lowest and moisture highest.

After the flue gas passes through the waste heat recovery unit, particulate is removed by a combined venturi and impingement tray scrubber system, and wet electrostatic precipitators (WESP). The venturi section consists of a narrow, adjustable throat, which increases gas velocity, turbulence and contact with added water, in

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART I. PROCESS DESCRIPTION, continued

order to collect ash particles and acid gases. The impingement tray scrubber provides cool plant effluent, which removes additional particulate and acid gases. There are two identical WESPs located in parallel. When the WESP system is operating (i.e., when not out of service for occasional maintenance and repair), only one of the two WESPs will be in use. Each WESP collects small particles. An electric field is set up and particles are collected on plates. The particles are removed by flushing the collecting plates with water.

A System Control and Data Acquisition System (SCADA) is used to control the incineration system and to historically log operations. Air, sludge feed rate, and auxiliary fuel feed rate are automatically controlled to maintain the process in balance. Significant features of the process instrumentation and control include:

- Automatic control of auxiliary fuel based on incinerator combustion temperature;
- Manual adjustment of sludge feed rate and required combustion and excess air;
- An alarm system to proactively warn the operator of system imbalances, including, for example, low air flow to the incinerator, high incinerator outlet temperature, and low scrubber water flow; and,
- Electrical interlocks to prevent improper sequencing of startup and to prevent the system from operating outside of certain permitted limits.

B. Equipment and Process Specifications

Fluidized Bed Incinerator Manufacturer: U.S. Filter/ Zimpro Products

Incinerator Rated Capacity: 3.125 dry tons sludge per hour (DT/hr)

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART I. PROCESS DESCRIPTION, continued

Gas Flow Rate: 11,050-14,250 scfm @ 68°F, wet at stack exit

Incinerator Combustion Temperature: 1550°F typical during normal steady state or quasi-steady state operations

Incinerator Residence Time: 3-6 seconds during normal steady state or quasi-steady state operations

Sludge Heat Content: 7,000-8,000 Btu/lb, moisture free basis, typical

Start Up Burner Auxiliary Fuel Rate: ≤ 85 gph for no. 2 oil; ≤ 12,070 cu. ft./hr for natural gas

Lance Burner Auxiliary Fuel Rate: ≤ 225 gph for no. 2 oil; ≤ 32,000 cu. ft./hr for natural gas

Wet Electrostatic Precipitator (WESP) Manufacturer and Model: each is a Sonic Environmental Systems, Sonickleen, Model WESP-61-10H13.

Scrubber Type: Venturi with concurrent flow plus impingement tray with countercurrent flow

C. Stack Parameters

Stack Number: 4
Exhaust gas flow rate: normal range is 14,835 ACFM - 17,387 ACFM
Minimum distance to property line: 206 ft.
Minimum stack height: 150 ft.
Exit gas temperature range: 150-250 °F (typical at normal operating conditions)

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STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS

PRIOR TO START-UP OF THE FLUIDIZED BED INCINERATOR, THE EAST MULTIPLE HEARTH SEWAGE SLUDGE INCINERATOR (PERMIT NUMBER 109-0002) SHALL BE PERMANENTLY SHUT DOWN. THE WEST MULITPLE HEARTH SEWAGE SLUDGE INCINERATOR (PERMIT NUMBER 109-0001) SHALL BE PERMANENTLY SHUT DOWN NO LATER THAN NINETY (90) DAYS FOLLOWING START-UP OF THE FLUIDIZED BED INCINERATOR. FOR PURPOSES OF THIS PERMIT, START-UP SHALL BE DEFINED AS THAT TIME WHEN SEWAGE SLUDGE IS INITIALLY CHARGED TO, AND COMBUSTED IN, THE FLUIDIZED BED INCINERATOR. THE WEST MULTIPLE HEARTH INCINERATOR AND THE FLUIDIZED BED INCINERATOR SHALL NO SIMULTANEOUSLY COMBUST SEWAGE SLUDGE AT ANY TIME DURING THE NINETY (90) DAY PERIOD FOLLOWING FLUIDIZED BED INCINERATOR START-UP. IN ADDITION, POLLUTANT ANNUAL EMISSION LIMITS STATED IN THIS PERMIT FOR THE FLUIDIZED BED INCINERATOR SHALL NOT BE EXCEEDED DURING THE PERIOD COMMENCING WITH THE FLUIDIZED BED INCINERATOR START-UP DATE AND ENDING ONE (1) YEAR THEREAFTER, AND SUCH ANNUAL EMISSION LIMITS SHALL INCLUDE OPERATION OF BOTH THE FLUIDIZED BED AND WEST MULTIPLE HEARTH INCINERATORS. THE INDIVIDUAL POLLUTANT ACTUAL ANNUAL EMISSIONS DETERMINED FOR THIS ONE (1) YEAR PERIOD SHALL BE CALCULATED BY SUMMING EACH POLLUTANT'S EMISSIONS FROM BOTH OF THE WEST MULTIPLE HEARTH AND FLUIDIZED BED INCINERATORS.

SPECIAL MONITORING, RECORDING AND REPORTING REQUIREMENTS FOR THE ONE (1) YEAR PERIOD FOLLOWING FLUIDIZED BED INCINERATOR START-UP ARE STATED IN PART IV.L AND PART V.C.

THE PERMITTEE'S ANNUAL EMISSION STATEMENT THAT IS SUBMITTED TO THE DEP FOR THE CALENDAR YEAR IN WHICH THE FLUIDIZED BED INCINERATOR ACHIEVES START-UP, SHALL INCLUDE THE PERMITTEE'S STATEMENT THAT THE EAST MULTIPLE HEARTH SEWAGE SLUDGE INCINERATOR HAS BEEN PERMANENTLY SHUTDOWN. THE PERMITTEE'S ANNUAL EMISSION STATEMENT THAT IS SUBMITTED TO THE DEP FOR THE CALENDAR YEAR THAT INCLUDES THE NINETIETH (90TH) DAY FOLLOWING FLUIDIZED BED INCINERATOR START-UP SHALL INCLUDE THE PERMITTEE'S STATEMENT THAT THE WEST MULTIPLE HEARTH SEWAGE SLUDGE INCINERATOR HAS BEEN PERMANENTLY SHUTDOWN.

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

Notwithstanding the design specifications or description provided in Part I, above, the permittee of the subject source shall comply with the following operating requirements.

A. Operating Parameter Limitations

1. Equipment

   i. Maximum Sludge Charging Rate: 3.125 DT/hr

   ii. Maximum Annual Quantity of Sludge Burned: 27,375 DT/yr

   iii. Allowable Fuel: Only sewage sludge, number 2 fuel oil, natural gas and liquefied petroleum gas (LPG) may be fired in this unit. Any substance which is considered "municipal-type solid waste," as defined in Title 40 of the Code of Federal Regulations (CFR) Part 60, Section 60.51a, or "hazardous waste," as defined in Section 22a-115 of the Connecticut General Statutes is prohibited from being introduced to this unit. For the purpose of this permit, sewage sludge is defined as any solid, semi-solid or liquid residue from the pretreatment or primary, secondary or advanced treatment by a POTW of domestic sewage, industrial wastewater, septage, portable toilet pumpings, and grease traps.

   iv. Auxiliary Fuel Type: Number 2 oil or natural gas. (LPG may be used for pilot lighting)

   v. Maximum Auxiliary Fuel Oil Sulfur Content: 0.3%

   vi. Maximum Auxiliary Fuel Annual Usage: 1.97 million gallons of no.2 oil; 280 million cubic feet of natural gas; but the combination of no.2 oil and natural gas usage shall not exceed 280,000 MMBTUs in one year.

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

vii. Furnace Exhaust Duct Oxygen Content: Sewage sludge shall cease being introduced into the incinerator if the percent oxygen is less than 2% wet, based on a 5-minute rolling average. Sewage may be reintroduced to the incinerator when the oxygen percent is at least 2% wet, based on a 5-minute rolling average. Normal steady state or quasi-steady state oxygen content range is 3 to 3.5%, wet.

2. Controls

i. The overall control efficiency shall be at least 99.91% for the removal of particulate matter. The efficiency is based on the venturi scrubber, impingement tray scrubber and WESP.

ii. Wet Electrostatic Precipitator (2 identical units, only one unit operates at a time): normal steady state or quasi-steady state operating voltage across each of the precipitator's plates shall be in the range 40-65 kV, and the minimum shall be 40 kV (1-hour block average) to assure the proper corona. The WESP normal operating limits do not apply when the WESP is being bypassed. The WESP may be taken out of service occasionally for maintenance and repair.

iii. Venturi Scrubber (normal steady state or quasi-steady state operating conditions): scrubbing liquid flow rate shall be in the range 250-500 gpm during normal operating conditions. Minimum scrubber liquid flow rate shall be 250 gpm (1-hour block average) during normal operating conditions. The preliminary minimum gas pressure drops (1-hour block average) across the scrubber shall be 15 inches H_2O and 40 inches H_2O, with the WESP operating and without the WESP operating, respectively, during normal operating conditions. The minimum pressure drop values shall be established by the permittee after start up but not later than the time of the Part III initial stack emission

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

tests. Permittee shall submit to the DEP Bureau of Air Management's Engineering & Technical Services Division a written report that states the minimum scrubber pressure drops required to achieve proper emissions control. The written report shall be submitted no later than 30 days following stack testing.

iv. Impingement Tray Scrubber (normal steady state or quasi-steady state operating conditions): minimum scrubber liquid flow rate shall be 300 gpm (1-hour block average) during normal operating conditions. The preliminary minimum gas pressure drop is in the range 6 to 14 inches H_2O (1-hour block average). Permittee shall submit to the DEP Bureau of Air Management's Engineering & Technical Services Division a written report that states the minimum scrubber pressure drops required to achieve proper emissions control. The written report shall be submitted no later than 30 days following stack testing.

v. Fluidized Bed Combustion Temperature Normal Steady State or Quasi-steady State Operating Range: 1300-1500 °F in the sand bed.

vi. Fluidized Bed Combustion Temperature Normal Steady State or Quasi-steady State Operating Range: 1400-1750 °F in the freeboard volume and the exhaust duct. Permittee shall terminate sludge feed if the exhaust duct temperature is less than 1400 °F for a five (5) minute period on a rolling basis or greater than 1750 °F (instantaneous) during normal operating conditions.

vii. Fluidized Bed Excess Oxygen Normal Steady State or Quasi-Steady State Operating Condition: 2% minimum on wet volume basis and 5-minute rolling average.

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

B. O&M Requirements

The permittee shall operate and maintain the fluidized bed incinerator system and pollution control equipment in accordance with manufacturer's written recommendations.

C. Emission Limits and Standards

The permittee shall not exceed the emission limits stated herein at any time, except start up, shutdown or malfunction.

Criteria Pollutants

Criteria Pollutant	lb/DT	Dry Sludge Content	lb/MMBTU	TPY
PM-10				7.4
	0.45	< 30% ash		
	0.53	≥ 30% ash		
SOx				55.0
	3.0	< 1.5% sulfur		
	4.0	≥ 1.5% sulfur		
NOx	4.0		0.33	55.0
VOC	0.36			4.9
CO	1.6			22.0
Pb	0.023			0.32

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

Hazardous Air Pollutants

Hazardous Air Pollutant	Rate
Be	0.022 lb/24-hr period (10 grams/24-hr period)
Hg	7.055 lb/24-hr period (3200 grams/24-hr period)
HCl	0.36 lb/DT
H_2SO_4	0.36 lb/DT

Opacity

The permittee shall comply with the opacity requirements of Regulations of Connecticut State Agencies (RCSA) Section 22a-174-18.

PM-10 Emission Rate

The PM-10 emission rate permit limits were developed from information that was based on only the front half catch (filterable particulate) of the EPA Method 5 sampling train. The permittee may be required to include the back half (condensable) fraction of the EPA Method 5 sampling train to determine PM-10 emission rates to comply with Part III stack testing requirements. If the permittee is required to conduct the PM-10 stack tests using measurements from EPA Method 5 front half and back half catches, and the PM-10 emission rates determined from such test results exceed the permit emission limits stated above, then the permittee shall apply for permit changes to incorporate appropriate PM-10 emission limits. The permittee's application to

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

change the PM-10 limit shall include supporting documentation. Similarly, the permittee shall apply for a change to the minimum required particulate matter control efficiency as may be necessary.

The permittee shall be deemed to be in compliance with the permit PM-10 emission rate limit and control efficiency if the PM-10 emission rate from the front half catch measured in the EPA Method 5 train samples is less than the PM-10 permit emission rate limit stated above.

D. Applicable Connecticut Regulations

The permittee shall operate the source in accordance with RCSA Sections 22a-174-18(b) and -18(c) regarding control of particulate emissions.

The permittee shall not cause or allow the emission of any substance or combination of substances from the incinerator which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23.

The permittee shall comply with RCSA Section 22a-174-29 "Hazardous Air Pollutants."

At all times, operations of the facility shall be carried out in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations under RCSA Section 22a-69-1 through 22a-69-7.4, inclusive.

The above regulations are not intended to be all inclusive - other sections of the RCSA may apply.

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART II. OPERATING REQUIREMENTS, continued

E. Applicable Federal Regulations

The permittee shall comply with the following federal regulations:

1. 40 CFR, Part 60, Subpart A, General Provisions
2. 40 CFR, Part 60, Subpart O, Standards of Performance for Sewage Treatment Plants
3. 40 CFR, Part 61, Subpart A, General Provisions
4. 40 CFR, Part 61, Subpart C, National Emission Standards for Beryllium
5. 40 CFR, Part 61, Subpart E, National Emission Standards for Mercury
6. 40 CFR, Part 503, Technical Standards for the Use and Disposal of Sewage Sludge, Subpart E, Incineration

PART III. STACK EMISSION TEST REQUIREMENTS

A. Pollutants

Stack emission/performance testing shall be required for the following:

1. Criteria Pollutants*: TSP, SOx, NOx, VOC, CO, Pb
2. PM-10
3. Acid Gases: HCl, H_2SO_4
4. Hydrocarbons

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PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART III. STACK EMISSION TEST REQUIREMENTS, continued

5. Metals: As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Se, Zn

6. Opacity

7. PM-10 control efficiency with and without the WESP in operation. For the purposes of this measurement, the uncontrolled particulate matter mass rate shall be determined based on sludge ash content and the amount of sludge introduced into the incinerator during the particulate matter stack emissions testing.

* NOx and VOC are precursors for the criteria pollutant Ozone. NOx is also a criteria pollutant.

B. Discussion

1. Stack emission testing for the criteria pollutants shall be made to determine compliance with their lb/DT limits. This testing shall include PM-10. Particulate matter emission testing shall be performed with both the scrubbers and WESP operating, and only with the scrubbers operating.

2. Stack emission testing is required to determine compliance with the 40 CFR Part 60 Subpart O particulate (TSP) emission limit of 1.3 lb/ ton dry sludge input.

3. The stack emissions testing for PM-10 shall include determination of the percent ash content in the sludge.

4. The stack emission testing for SOx shall include determination of the percent sulfur content in the sludge.

5. The stack emission testing for NOx shall include a determination of the emission rate in units of lb/MMBTU as well, in order to ascertain compliance the RCSA Section 22a-174-22 of 0.33 lb/MMBTU.

ORIGINAL

PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART III. STACK EMISSION TEST REQUIREMENTS, continued

6. In accordance with 40 CFR Part 61 Subparts C (Section 61.33) and E (Section 61.53) stack testing shall be performed to determine compliance with the 24-hour period limits for beryllium and mercury, respectively.

7. Stack emission testing for HCl and H_2SO_4 shall be made to determine compliance with their lb/DT limits.

8. The stack emission testing for hydrocarbons to comply with Public Act No. 01-204, shall be performed to determine the concentration ($\mu g/m^3$) of total hydrocarbons in the stack exhaust gas, and the emission rate (lb/DT).

9. The stack emission testing for metals to comply with Public Act No. 01-204, shall be performed to determine their presence in the exhaust gas. The individual metal concentrations ($\mu g/m^3$) shall be determined in the exhaust gas.

C. General Requirements

See Appendix B for the General Requirements.

D. Additional Test Requirements

1. Annual stack testing for mercury, metals and hydrocarbons shall be conducted as required by Public Act No. 01-204.

2. Each stack emission test shall include determination of the sludge hourly feed rate and the auxiliary fuel hourly feed rate.

3. Stack emission tests for metals' emissions rates and emissions concentrations shall be conducted both with and without the WESP in operation.

ORIGINAL

PERMIT FOR PROCESS EQUIPMENT

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT

PART III. STACK EMISSION TEST REQUIREMENTS, continued

4. The permittee shall determine the percent oxygen, wet, in the fluidized bed incinerator exhaust duct, based on a five (5) minute rolling average. The percent oxygen in the exhaust gas shall be determined whenever the tests of Part III.B are performed.

5. The permittee shall determine the removal efficiency of the emission control system when stack testing for particulate matter.

6. Within fourteen (14) months, but not prior to ten (10) months following the initial stack testing subsequent to plant start up, the permittee shall conduct a follow up stack test for SOx, NOx, PM-10, CO, VOC, and Pb as required under Parts III.B and III.C herein. The requirements under Part III.D.2 through III.D.5 shall apply as well. The purpose of the testing will be determination of the source's continuing ability to be in compliance with permit emission limitations, including under conditions of potential changes in sludge composition.

7. The permittee shall perform the following stack testing once every five (5) years from the date of the previous such test. The stack testing shall be conducted for SOx, NOx, PM-10, CO, VOC, and Pb as required under Parts III.B and III.C herein. The requirements under Part III.D.2 through III.D.5 shall apply as well. The permittee shall conduct such testing during the fifth year following the date of the previous, similar test.

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PART IV. MONITORING AND RECORD KEEPING REQUIREMENTS

A. The permittee shall install, calibrate, maintain and operate the following monitoring and record keeping equipment:

1. A continuous flow measuring and recording device that can be used to determine either the mass or volume of sludge charged to the incinerator. The flow device shall be certified by the manufacturer to have an accuracy of ±5% over the operating range and shall be calibrated at least yearly in accordance with the manufacturer's instructions.

2. A monitoring device that continuously measures and records the venturi and impingement tray scrubbers' combined gas flow pressure drop. The pressure drop of the gas flow through the combined scrubber system shall be continuously monitored. Each device shall be certified by the manufacturer to be accurate within ±1 inch of water gauge and shall be calibrated at least yearly in accordance with the manufacturer's instructions. Pressure drop determinations shall be made based on a 1-hour block average.

3. Monitoring devices that continuously measure and record the venturi and impingement tray scrubbers' liquid flow rate. Each device shall be certified by the manufacturer to be accurate within ±5% over its operating range and shall be calibrated at least yearly in accordance with the manufacturer's instructions. Liquid flow rate determinations shall be made based on a 1-hour block average.

4. A monitoring device that continuously measures and records the oxygen content (wet) of the incinerator exhaust gas. The oxygen monitoring device shall be certified by the manufacturer to have an accuracy of ±5% over its operating range and shall be calibrated in accordance with the manufacturer's instructions at least once each 24-hour period,

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PART IV. MONITORING AND RECORD KEEPING REQUIREMENTS, continued

unless a waiver or applicability determination by EPA allows an alternate calibration period. Exhaust gas oxygen content determination shall be based on a 5-minute rolling average.

5. Continuous temperature measuring and recording devices in the incinerator bed and in the incinerator freeboard outlet area. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of ±5% over its operating range and shall be calibrated at least yearly per the manufacturer's recommendations.

6. A monitoring device for each auxiliary fuel type that continuously measures and records the auxiliary fuel flow to the incinerator. The auxiliary fuel flow measuring devices shall be certified by the manufacturer(s) to have an accuracy of ±5% over its operating range and shall be calibrated at least once yearly per the manufacturer's recommendations. Auxiliary fuel flow rate determinations shall be made based on a 1-hour block average.

7. A monitoring device that continuously measures and records the voltage across the wet electrostatic precipitator. The device shall be certified by the manufacturer to have an accuracy of ±5% over its operating range and shall be calibrated at least once yearly per the manufacturer's recommendations. WESP voltage determinations shall be based on a 1-hour block average.

8. An opacity monitor subject to the requirements of Appendix A.

B. Continuous monitors and recorders shall be installed, calibrated, maintained and operated in a manner acceptable to the Commissioner of the Department of Environmental Protection. Continuous Emission Monitors (CEMS) as required by 40 CFR 503 shall be installed, calibrated, maintained and operated in accordance with US EPA performance and siting specifications, 40 CFR 60, Appendices B &

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PART IV. MONITORING AND RECORD KEEPING REQUIREMENTS, continued

F, and Connecticut's CEM Guideline dated August 19, 1996. All monitors shall be incorporated into a CEM Plan and certified in accordance with the aforementioned specifications.

C. The permittee shall collect and analyze a well-mixed representative grab sample of the sludge fed to the incinerator at least once per day. The dry sludge content and the volatile solids content of the sample shall be determined in accordance with the method specified under 40 CFR Section 60.154(b)(5), except that the determination of volatile solids, step (3)(b) of the method, shall not be deleted. Daily records of the total solids and volatile solids content of the sludge charged to the incinerator shall be kept.

D. The permittee shall determine the hourly dry sludge feed rate (DT/hr) in accordance with the following procedure.

The volumetric wet sludge feed rate shall be continuously monitored. Wet sludge density shall be monitored once per month. The mass of dry solids in the sludge shall be monitored once per day. The wet sludge density is expected to be approximately constant. The mass of dry solids will be determined from the daily sludge grab sample. A dry solids hourly feed rate (DT/hr) shall be calculated, for each hour of operation in each day, from the most recent hourly average of the volumetric wet sludge feed rate, the most recent monthly wet sludge density determination and the most recent daily dry solids mass determination. A daily average dry solids hourly feed rate (DT/hr) shall be determined by averaging the day's hourly feed rates.

The permittee shall compute a rolling 30 day average dry solids hourly feed rate by adding the current daily average (DT/hr) to the previous 29 daily averages (DT/hr) and calculating the average value. The rolling 30 day average dry solids hourly feed rate

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calculated by this method shall be used to determine compliance with the maximum allowable dry sludge feed rate. The 30 day average method will be used to address variation in daily dry solids content.

The permittee shall keep records of the hourly sludge feed rate determination results.

E. The permittee shall calculate the annual dry sludge charge rate (DT/yr) and annual auxiliary fuel consumption on a rolling twelve (12) month basis obtained by adding the current month's charge rate (or auxiliary fuel consumption) to that of the previous eleven (11) months. Calculations shall be made separately for each auxiliary fuel. Records of fuel consumption shall be kept in units of gallons of no. 2 oil per year, cubic feet of natural gas per year, and MMBTUs/yr. The units of MMBTU/yr shall represent oil plus natural gas usage.

F. The permittee shall monitor and record monthly and annual criteria pollutant emissions. VOCs and NOx shall be monitored and recorded as precursors for ozone. Specifically, monthly emissions of PM-10, SOx, NOx, VOC, and Pb shall be calculated based on lb/DT emission factors derived from the most recent stack test results, in conjunction with the quantity of sludge feed during the month (DT/month). Monthly emissions of CO shall be calculated based on the monthly average concentration of CO measured by the CEMS system (ppmdv @ 7% O_2), the average quantity of stack gas generated per dry ton of sludge fed based on the most recent stack test (dscfm @ 7% O_2/DT), and the quantity of sludge fed during the month (DT/month). Annual emissions shall be based on every consecutive twelve (12) time period and shall be determined by adding the current month's emissions to that of the previous eleven (11) calendar months.

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PART IV. MONITORING AND RECORD KEEPING REQUIREMENTS, continued

G. Each fuel oil shipment shall include a shipping receipt from the fuel supplier and a certification from the fuel supplier certifying the type of fuel in the shipment and the weight percent of sulfur in the fuel. The shipping receipt and/or certification shall include the name of the oil supplier, the sulfur content of the oil and the method used to determine the sulfur content of the oil. The permittee shall maintain records of each shipping receipt and certification.

H. The permittee shall keep calibration and maintenance records and original instrument chart recordings for all continuous monitoring instruments and equipment.

I. The permittee shall keep records of the results of any incinerator performance tests.

J. The permittee shall maintain records on site for a period no less than five (5) years from the date of creation and shall be submitted to the DEP Bureau of Air Management or EPA Administrator upon request.

K. The permittee of this incinerator is subject to the notification and record keeping requirements of 40 CFR Part 60, Section 60.7.

L. The permittee shall monitor and record operating times for the fluidized bed and West multiple hearth sewage sludge incinerators during the ninety (90) day period following fluidized bed incinerator start-up. The operating times shall coincide with the time each incinerator is combusting sewage sludge.

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PART IV. MONITORING AND RECORD KEEPING REQUIREMENTS, continued

The permittee shall monitor and record pollutant emissions from the fluidized bed and West sewage sludge incinerators during the period commencing with fluidized bed incinerator start-up and ending one (1) year later. The permittee shall record pollutant emissions at the end of each current month and add those emissions to the prior month's total to record a monthly running total for each pollutant. The first and last months of this one (1) year period can represent less than a full month's incinerator operations if the fluidized bed incinerator start-up occurs on a day other than the first day of the month.

PART V. REPORTING REQUIREMENTS

A. The permittee of this incinerator shall submit a written report to the DEP Bureau of Air Management and to EPA Region I for each semi-annual period ending June 30 and December 31 of each year. All semi-annual reports shall be postmarked by the 30th day following the end of the semi-annual period and shall be mailed to:

EPA: Office of the Director
Air, Pesticides & Toxics
Management Division
U.S. EPA Region I
JFK Federal Building
Room 2311
Boston, MA 02203

DEP: Office of Assistant Director
Compliance & Field Ops. Div.
Bureau of Air Management
Dept. of Environmental
Protection
79 Elm Street
Hartford, CT 06106

This report shall contain the following:

1. A record of the average scrubber pressure drop measurements for each period of fifteen(15) minutes duration or more during which the pressure drop of the scrubber was less than, by a percentage specified in 40 CFR Part 60, Subpart O, Section 60.155(a)(1), the average pressure drop measured during the

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PART V. REPORTING REQUIREMENTS, continued

most recent performance test.

2. A record of the average oxygen content in the incinerator exhaust for each period of 1-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than three percent (3%), unless a waiver or applicability determination by EPA allows otherwise.

3. For each calendar day that a decrease in scrubber pressure drop or increase in oxygen content of the exhaust gas is reported, a record of the following:

   i. Scrubber pressure drop averaged over each 1-hour incinerator operating period.

   ii. Oxygen content in the incinerator exhaust averaged over each 1-hour incinerator operating period.

   iii. Temperatures of the bed and outlet of the incinerator averaged over each 1-hour incinerator operating period.

   iv. Rate of sludge charged to the incinerator averaged over each 1-hour incinerator operating period.

   v. Incinerator fuel use averaged over each 8-hour incinerator operating period.

   vi. Moisture and volatile solid content of the daily grab sample of sludge charged to the incinerator.

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PART V. REPORTING REQUIREMENTS, continued

B. The permittee shall comply with the Appendix A reporting requirements as may be required therein. Notwithstanding the quarterly reporting requirements of Section 5 of Appendix A, CEM reports for CO and O_2 shall be submitted bi-annually and cover the periods January through June and July through December. Opacity reports shall be submitted quarterly per Appendix A requirements.

C. The permittee shall submit a report to DEP that states total operating time for the fluidized bed incinerator and total operating time for the West multiple hearth incinerator during the ninety (90) day period following fluidized bed incinerator start-up. The report shall be submitted within twenty-one (21) days following end of the ninety (90) day period.

The permittee shall submit monthly reports to DEP that state the total pollutant emissions that occurred during the period from the fluidized bed incinerator start-up through the last day of the current month. The final report may include a partial month as the last month if the fluidized bed start-up occurred on a day other than the first day of the month. Monthly reports shall be submitted within twenty-one (21) days following the last day of each month.

The permittee shall submit the above described reports to the CT DEP, Bureau of Air Management, Director of the Division of Engineering & Technical Services.

PART VI. ADDITIONAL TERMS AND CONDITIONS

A. This permit does not relieve the permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.

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PART VI. ADDITIONAL TERMS AND CONDITIONS, continued

B. Any representative of the DEP may enter the permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.

C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.

D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons of municipalities who are not parties to this permit.

E. Any document, including any notice, which is required to be submitted to the Commissioner under this permit shall be signed by a duly authorized representative of the permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in the documents and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense." Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense in accordance with Connecticut General Statutes §22a-6, under §53a-157 of the Connecticut General Statutes.

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PART VI. ADDITIONAL TERMS AND CONDITIONS, continued

F. Nothing in this permit shall affect the Commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the permittee by the Commissioner.

G. Within fifteen days of the date the permittee becomes aware of a change in any information submitted to the Commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the permittee shall submit the correct or omitted information to the Commissioner.

H. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.

I. Any document required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to: Office of Assistant Director; Compliance & Field Operations Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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Appendices attached (Applicable if -X- checked):

☒ A Continuous Emission Monitoring Requirements

☒ B Stack Emission Test Requirements

☒ C New Source Performance Standards

☒ E Control Equipment Specifications

Town No: 109 Premise No: 11 Permit No: 0081 Stack No: 04

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APPENDIX A

CONTINUOUS EMISSION MONITORING REQUIREMENTS

CONTINUOUS EMISSION MONITORING GUIDELINE

AMENDED: AUGUST 19, 1996

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT
79 Elm Street
Hartford, CT 06106-5127

ACKNOWLEDGEMENTS

The following Bureau of Air Management staff played key roles in this revision of the Continuous Emissions Monitoring (CEM) Guideline:

Mr. Christopher D. Nelson, Air Pollution Control Engineer II
Mr. Stephen Anderson, Air Pollution Control Engineer III

Also acknowledged for contributions to earlier versions of the CEM Guideline are the following:

The CEM Workgroup formed in conjunction with the Connecticut Business and Industry Association and the State Implementation Plan Review and Advisory Council.

The CEM Workgroup formed by the Northeast States for Coordinated Air Use Management.

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Attachments:
Appendix A - CEM Plan Summary Form
Appendix B - Reporting Forms
Appendix C - CMS Downtime - Categories & Examples

Note: All EPA documents referenced in this document can be ordered from the National Technical Information Service (NTIS) by calling (703) 487-4650

Acronyms used in this document

AE..... Administrative Enforcement
BAM..... Bureau of Air Management
CAAA..... Clean Air Act Amendments of 1990
CD..... Calibration Drift
CE..... Combustion Efficiency
CEM..... Continuous Emissions Monitoring
CERMS..... Continuous Emission Rate Monitoring System
CFR..... Code of Federal Regulations
CGA..... Cylinder Gas Audit
CMS..... Continuous Monitoring System
CO..... Carbon Monoxide
CO_2..... Carbon Dioxide
DAS..... Data Acquisition System
DEP..... Department of Environmental Protection
EER..... Excess Emission Report
EPA..... United States Environmental Protection Agency
ES..... Emission Standard
ITT..... Intent to Test
MWC..... Municipal Waste Combustor
NIST..... National Institute of Standards and Technology
NO_X..... Nitrogen Oxide
NSPS..... New Source Performance Standard
NSR..... New Source Review
OTP..... Operational Trial Period
PST..... Performance Specification Test
QA/QC..... Quality Assurance/Quality Control
RA..... Relative Accuracy
RACT..... Reasonably Available Control Technology
RATA..... Relative Accuracy Test Audit
RM..... Reference Method
SO_2..... Sulfur Dioxide

SECTION 1 : INTRODUCTION AND PROGRAM CONTACTS

1.1 Introduction

With the recent proposal and promulgation of new EPA regulations and standards specified by the Clean Air Act Amendments of 1990 (CAAA), it has become necessary for the Connecticut Department of Environmental Protection's Bureau of Air Management (BAM) to provide an updated version of this Continuous Emissions Monitoring Guideline. The BAM has been diligent in pursuing Continuous Emission Monitoring (CEM) regulations which will ultimately work in conjunction with (or replace) this document. It is anticipated that promulgation of these regulations will provide the BAM and the regulated community with more explicit CEM program requirements. Furthermore, CEM regulations are needed to work in conjunction with the DEP's Nitrogen Oxides Reasonably Available Control Technology (NOx RACT) regulations, New Source Review (NSR) and Operating Permits regulations and Acid Rain regulations promulgated pursuant to Title IV of the CAAA.

This document provides instructions and guidance to all sources required to install and operate CEM systems. Once the CEM requirements are determined, a regulated source can use this document to assist in the implementation of the source's CEM program. Questions and comments regarding this document may be submitted to the BAM CEM Group.

Major changes made to this document since the last "draft" document, dated July 1, 1992, include the following:

- A new CEM Plan Summary Form has been added and is discussed in Section 2. The form, attached in Appendix A, will be submitted along with the CEM Plan for new sources or submitted on its own for existing sources.

- In Section 3, Performance Testing, more explicit guidance is provided as a result of experience gained since the document was first drafted in 1990.

- Changes have been made to the timetable for submission of documentation related to CEM. Submission of the CEM Plan is now required at least sixty (60) days prior to commencement of CEM performance tests, instead of prior to the purchase of the CEM equipment.

- In Section 4, Quality Assurance (QA), the numbering system for the plan has been removed and replaced with a broader requirement to provide a minimum number of sections with specified content. The various sections will address the QA needs specific to the equipment located at the particular site. DEP hopes this will provide sources with more flexibility in preparing and updating QA/QC Plans.

- In Section 5, Enforcement Protocol, the reporting formats have been modified to better define the BAM's needs. New report submittal forms are attached in Appendix B.

1.2 Guideline Applicability Exemptions

Sources required to install and operate CEM equipment pursuant to the Federal Acid Rain Regulations (40 CFR 75) do not have to follow this CEM Guideline for those pollutant and parameter monitors which are installed solely for the purpose of satisfying the requirements of 40 CFR 75. If the CEM equipment meets the requirements of 40 CFR 75 (for certification, ongoing quality assurance, etc.), the CT DEP will consider this equipment to be sufficient.

However, for CEMs subject to 40 CFR 75 which are being used to demonstrate compliance with other requirements (ex., NO_x monitor being used for CT DEP NO_x RACT), some additional testing, reporting and recordkeeping requirements may apply. Such additional requirements would be specified by regulation, permit or state order.

Opacity monitors used at sources subject to 40 CFR 75 which have requirements based in other applicable regulations, permits or state orders shall be subject to the requirements of this CEM Guideline. The installation, certification, ongoing quality assurance and operation of such opacity monitors shall be conducted in accordance with this CEM Guideline.

1.3 The CEM Plan

The CEM Plan shall describe the CEM system components and how they will be installed, tested, certified and operated. The CEM Plan shall also describe interim quality assurance procedures and source specific enforcement provisions. The CEM Plan should be submitted to the BAM CEM Group at least sixty (60) days prior to initiation of CEM certification tests. A CEM Plan Summary Form (attached as Appendix A of this guideline) shall be completed and submitted by both new and existing sources.

1.4 The Quality Assurance/Quality Control (QA/QC) Plan

An interim QA/QC Plan is required for the purposes of initial operation, maintenance and testing of the CEM equipment. Because the BAM recognizes that experience must be gained with operation and maintenance of the CEM equipment before a final QA/QC Plan can be prepared, the source has 180 days from the date of CEM certification to submit its final QA/QC Plan.

1.5 Bureau of Air Management (BAM) CEM Program Contacts

The BAM CEM Group can be reached at the following address and phone numbers:

Department of Environmental Protection

Bureau of Air Management
CEM Group
79 Elm Street
Hartford, CT 06106-5127

PHONE: (860) 424-3028
FAX: (860) 424-4064

1.6 CEM Certification Timetable

Following is a timetable which may be used as general guidance to track milestones during the implementation of the CEM program. Certain requirements may not apply to a particular facility, depending on specific air pollution permit, enforcement order or regulatory requirements.

Submission/Testing Requirement	Due Date
CEM Plan Summary Form	Within ninety (90) days after effective date of the CEM Guideline **for existing sources**
CEM Plan and CEM Plan Summary Form	At least sixty (60) days prior to commencement of CEM performance testing **for new sources**
CEM equipment to be installed and operational as specified by Section 3.6 of the CEM Guideline	Prior to conducting source compliance testing
Notification of beginning of thirty (30) day Operational Trial Period (OTP) for gas CEMs	At initiation of OTP
Notification of beginning of CEM Calibration Drift (CD) tests	At initiation of CD tests
Submit Relative Accuracy Test Audit (RATA) intent-to-test form and RATA test protocol from test contractor	At least sixty (60) days prior to the proposed RATA date. Source should confirm final date 20 days prior to testing.
Submit data and results of CEM OTP	At least 14 days prior to conducting RATA
Conduct four-point linearity test on gas CEMs	Prior to initial RATA
Submit full CEM certification test report and all associated data	Within thirty (30) days after completion of certification testing
All CEM performance tests successfully completed including, temperature and process monitors, reports submitted to DEP	Within one-hundred eighty (180) days from issuance of facility permit to operate, unless otherwise specified by DEP in an applicable regulation, air pollution permit or enforcement order
Begin implementation of ongoing CEM QA/QC audits	Next succeeding calendar quarter after the date of CEM certification
Submit final CEM QA/QC Plan	Within 180 days from the date of CEM certification

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SECTION 2 : CEM PLAN FORMAT

Sources subject to CEM requirements shall submit two copies of the CEM Plan, one copy to the CEM Group and one copy to either the Permit or Enforcement sections (as applicable). The CEM Plan shall be submitted for approval prior to equipment installation or as otherwise required by DEP permits, enforcement orders or regulations. A draft plan should be submitted during the construction permit review phase in order to minimize potential problems later in the project. The CEM Plan shall include the following information:

- Facility Overview: General CEM Requirements;
- CEM Equipment Design and Installation Description;
- CEM Performance and Certification Testing;
- Enforcement Protocol;
- Interim Quality Assurance Plan;
- CEM Reporting Formats.

Along with the CEM Plan, sources shall complete and submit a CEM Plan Summary Form (attached as Appendix A of this guideline). Existing sources that have already submitted a CEM Plan shall submit just the CEM Plan Summary Form.

2.1 Facility Overview: General CEM Requirements

This section of the CEM Plan should present a description of the source, the specific CEM requirements of the DEP permit, enforcement order or applicable regulations and other information as indicated below to provide a general understanding of the facility. The source specific issues should include at a minimum:

- identification of appropriate DEP permits, enforcement orders or applicable regulations;
- facility name and location including a list of all contacts and their responsibilities sufficient to indicate continuous coverage by staff with full authority to implement the requirements of the plan including, but not limited to, authorizing a facility shutdown;
- estimated milestones for facility construction (if applicable), start-up, CEM performance testing and full-scale operation.
- a listing of all pollutants and/or parameters to be monitored by CEM equipment, including any CEM parameter which is an indirect measurement of pollutant emissions such as temperature or combustion efficiency.

- description of the air pollution control system(s);

- description of the process including capacities, variations, and any unique considerations;

2.2 CEM Equipment Design and Installation Description

This section of the CEM Plan shall describe the sampling, analytical and data handling equipment. Manufacturer's performance specification data should be included for each piece of equipment. The following details should be included in the equipment description:

- **CEM System design** (i.e., monitor make and model number if available, detailed descriptions of analyzer design technique and sampling system design)

- **CEM accuracy and precision requirements**

- **Monitor calibration technique**

- **Long term monitor performance**

- **Data Acquisition System (DAS) capabilities** (i.e., performance of required statistical calculations, data storage, report generation and remote data telemetering (if required))

- **CEM system auditing provisions**

- **A discussion concerning initial cost savings versus long term maintenance costs and potential downtime penalties for the CEM system selected**

- **A discussion concerning time-shared CEM system vs. dedicated CEM system,** (i.e. - applicability for the particular source type, etc.)

- **Facility drawings and location of CEM system.** Scaled facility drawings should identify exhaust gas flow paths, process components, pollution control equipment, and location of the CEM system components (including instrumentation housing). Detailed drawings of CEM sampling probe locations relative to the ductwork shall also be included.

- **CEM equipment protection** Since CEM analyzers include electronics sensitive to environmental exposure, the CEM Plan should address provisions for the protection of sensitive CEM components. Physical accessibility of CEM components for ease of maintenance should also be addressed. (CEM equipment should not be located in adverse

environments within the facility)

NOTE: The Department does not endorse any vendors of CEM hardware or software. However, the applicant may obtain information on CEM equipment in the US EPA guideline document Continuous Air Pollution Monitoring Systems Handbook (US EPA 625/6-79-005).

2.3 CEM Performance and Certification Testing

An overview of the CEM performance testing procedures used in Connecticut is contained in Section 3 of this guideline. This section of the CEM Plan should address all applicable certification requirements specified in this section **and** any additional certification requirements required by a permit, enforcement order or regulation.

2.4 Enforcement Protocol

A CEM enforcement matrix should be prepared by each source for inclusion in the CEM Plan. The averaging and reporting periods for each pollutant and/or parameter with CEM requirements contained in the facility's permit, enforcement order or applicable regulations should be incorporated into the enforcement matrix.

The CEM Plan enforcement matrix forms the basis for establishing the appropriate arrangements of the data acquisition and remote telemetry systems (if required). Changes to these limits are anticipated only if source-specific factors render compliance technically infeasible or if federal NSPS requirements are modified. The enforcement matrix format should include, but not be limited to, the following:

- **Constituents Monitored:** All pollutants or parameters monitored at the source using continuous emissions monitors as required by a DEP permit, enforcement order or regulation;
- **Emission Limitations and Reporting Units:** The applicable CEM emission limitation for each constituent and the units in which each constituent is reported;
- **Reportable Averaging Period:** The reportable averaging period for each CEM constituent at the source as specified by the Department issued air pollution permit, enforcement order or applicable regulation;
- **Source Response:** The corrective actions or response to be implemented when a specific emission limit is exceeded.

- **Start-Up, Shut-Down, Malfunction:** The applicable exemptions (if any) regarding start-up, shut-down or malfunction conditions for the source.

The Enforcement Protocol section of the CEM Plan shall also include a summary of the reporting requirements established in the facility's permit, enforcement order or the applicable regulation for each CEM unit and an example of each reporting format. A description of the minimum contents for each required report are contained in Section 5 of this guideline.

2.5 CEM Report Formats

The formats to be used for reporting CEM excess emissions and data are contained in Appendix B of this guideline. This section of the CEM Plan should include a sample of each report format.

2.6 Interim Quality Assurance Plan

An overview of the format to be used in preparing the source specific Quality Assurance/Quality Control (QA/QC) Plan is contained in Section 4 of this guideline. An interim quality assurance plan should be submitted to the BAM, as part of the CEM Plan, describing the quality assurance procedures to be used during the CEM certification testing and initial operation of the CEM equipment. The interim QA/QC Plan should include, as a minimum, a draft of each of the following sections for all CEM measured parameters:

- Preventative Maintenance
- Calibration
- Calibration Drift
- Data Handling.

It is generally understood that QA/QC issues are a function of experience gained in the operation of the CEM system. Therefore, it is expected that the QA/QC Plan will be periodically updated and modified as both the facility operators and the BAM develop sufficient understanding of each system.

SECTION 3 : PERFORMANCE TESTING

3.1 General Test Specifications

This section of the Guideline is applicable to those sources certifying new CEM systems and/or those sources replacing components of an existing CEM system and thus triggering recertification requirements (as specified in Section 4.5 of this Guideline). Performance tests shall be conducted to demonstrate the accuracy, precision and reliability of each CEM system. Accuracy and precision for opacity CEM equipment, gaseous CEM equipment and Continuous Emission Rate Monitoring Systems (CERMS) shall be demonstrated according to 40 CFR 60, Appendix B (Specifications 1-6). Additionally, other performance tests may supersede or be used in conjunction with these performance specification tests, as required by an individual permit, enforcement order or regulation. The following are the current performance specifications contained in 40 CFR 60, Appendix B:

Performance Specification 1 - Opacity
- Design Specification Data
- Laboratory (manufacturer) Performance Spec. Data
- Calibration Drift Test

Performance Specifications 2, 3, 4, 4a, 5 and 6 - Gaseous CEMs
- Calibration Drift Test
- Relative Accuracy Test

Temperature and other process monitoring systems shall be certified in accordance with the requirements of the air pollution permit, enforcement order or other applicable regulation. Sources that are required to monitor process operational parameters (i.e., temperature, feed rates, flow rates, etc.) must develop methods to demonstrate the accuracy and precision of the measurement systems. Whenever possible, the measurement system shall be calibrated against a National Institute of Standards and Technology (NIST) traceable source.

For any source subject to Section 22a-193 of the Connecticut General Statutes (Resource Recovery Facilities) which is required to demonstrate compliance with a minimum combustion temperature, the accuracy of the thermocouples utilized shall be demonstrated in accordance with the Bureau of Air Management's Resource Recovery Facility Guideline: Thermocouple Calibration/Retention Time Determination Procedures. This document is available from the Bureau of Air Management's New Source Review section.

All stack gas flow rate monitoring devices used for determining mass emission rates (e.g., pounds/hour) shall meet the following minimum specifications:

- CEM systems which employ stack gas volumetric flow rate measurement devices for producing pollutant emission rates shall complete performance tests in accordance with 40 CFR Part 52, Appendix E to demonstrate compliance with the Appendix E specifications.

- Differential pressure flow monitoring devices shall have an automatic blow-back purge system installed. Differential pressure flow monitoring devices shall also have the ability to drain the sensing lines in wet stack emissions conditions;

- Stack flow monitoring devices shall have the ability to perform on-line manual transducer calibrations and zero checks;

- Stack flow monitoring devices shall have the ability to display the individual parameters used in the final calculation of stack flow. For example, a differential pressure monitoring system shall have the ability to display instantaneous values of differential pressure, stack temperature and other constants which may be used in the calculation including the assumed static pressure, assumed effluent gas molecular weight and the pitot tube coefficient.

3.2 Calibration Drift

The source shall conduct precision (calibration drift) testing in accordance with 40 CFR 60, Appendix B for opacity, gaseous CEM monitors, and CERMS or as required by the applicable parts of 40 CFR. These tests require recording the daily monitor values for various calibration levels, without adjustment, over a specified time period. These tests shall be conducted according to the following minimum specifications:

- The source shall notify the Department, in writing, at the initiation of the tests. If a failure occurs during the test, another test may be started immediately. A written report shall be submitted to the CEM Group regarding the nature of the test failure and the dates/times of the new test schedule.

- Each monitoring system shall be tested according to the applicable performance specification. Calibration gas must be introduced at a point in the sampling system as close to the sample probe inlet as practical. The calibration gas injection point, however, must as a minimum be located prior to pumps, filters, scrubbers, conditioners or any other sampling system components so that all sampling and analytical components are tested as a complete system.

- Each CEM system shall meet minimum specifications contained in 40 CFR 60 or the applicable part of 40 CFR with the following exception:

For the performance specifications for Carbon Monoxide, Section 2.2 of 40 CFR 60 Appendix B, Performance Specification 4 and Section 2.4 of 40 CFR 60 Appendix B, Performance Specification 4A shall be modified to read as follows: "The CEMS calibration drift must not drift or deviate from the reference value of the calibration gas by more than 2.5% of the established span value".

- Any source subject to any Department issued air pollution permit which cites 40 CFR 60, Appendix B as the applicable performance standard, the process shall operate at a rate not less than 50% of normal load during calibration drift tests, unless otherwise specified in the air pollution permit or 40 CFR 60 Subpart. The normal load determination shall be based on an average over the entire seven day period using the steam load or other applicable load demonstration as typically measured continuously for the subject source.

- Test results shall be reported in accordance with the specifications of 40 CFR 60 or the applicable regulation for the subject source.

3.3 Operational Trial Period for Gas CEM Equipment

A 30-day Operational Trial Period (OTP) shall be completed prior to conducting initial relative accuracy tests on gas CEM equipment. The OTP shall be conducted according to the following specifications:

a. The facility shall notify the Department, in writing, at the initiation of the tests;

b. CEMs shall meet the % data availability requirements contained in Section 4 of this guideline, except that during the OTP, percent data availability shall be calculated using the following equation:

$$\text{Data Availability} = \frac{\text{Unit Operating Time - Total CMS Downtime}}{\text{Unit Operating Time}} \times 100$$

Where:

Unit Operating Time = Total number of hours that the unit (or process) was operated at > 50% of load during the OTP.

Total CMS Downtime = Total time during periods of operation (Unit Operating Time) in which invalid CMS data or no CMS data is collected due to any reason. This includes periods of QA activities such as calibration,

preventative maintenance, and audits which result in periods of invalid data, and "out-of-control" periods.

c. The process shall operate at greater than 50% of normal load during the OTP. The normal load determination shall be based on an average over the entire thirty day period using the steam load or other applicable load demonstration as typically measured continuously for the facility. This trial period may be interrupted by any number of process failures, as long as the CEM remains operable and 30 days of acceptable CEM data is produced with the source operating at greater than 50% of normal load.

d. The facility shall take the necessary steps to repair or replace a CEM that fails to meet the OTP acceptance criteria.

e. After successful completion of the OTP, the Applicant shall submit a report to the Department which includes the CEM raw data (in ASCII format on floppy diskette, or as otherwise recorded by the CEM's data acquisition system subject to approval by DEP) and calibration drift data corresponding to the dates/times of the OTP.

f. The facility shall not proceed with the Relative Accuracy portion of the CEM performance testing until approval has been granted by the Department.

3.4 Linearity Test

A four-point linearity test shall be performed by each source subject to any Department issued air pollution permit prior to the initial Relative Accuracy Test Audit for each gaseous CEM channel. The linearity test will be conducted using the Cylinder Gas Audit (CGA) procedures described in 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, in conjunction with a daily check and a high range audit gas between 80 and 90% of the CEM channel's full scale, except that, the mean difference between the calibration gas value and the monitor response value at each of the four points shall be less than 5% of the reference gas value for pollutant analyzers and less than 0.5% O_2 or CO_2 for diluent analyzers. A certified calibration gas (+/-2% accuracy) may be used for the high range audit point and the CEM zero check may be used for the zero audit point. Three non-consecutive measurements will be made for each of the calibration points (e.g., zero, low, mid, high, zero, low, mid, high, etc.);

3.5 Relative Accuracy

The facility shall complete Relative Accuracy (RA) testing on all gaseous CEMs according to 40 CFR 60, Appendix B and Appendix F specifications. In addition, the following specifications shall apply to sources subject to any NSPS or a Department issued air pollution permit or

enforcement order:

a. A Relative Accuracy Intent-to-Test form, as prescribed by the Commissioner of Environmental Protection, and a Relative Accuracy Test Audit (RATA) protocol shall be submitted to the Department at least sixty (60) days prior to the proposed RATA test date;

b. Carbon Monoxide (CO) CEM systems shall demonstrate compliance by meeting the requirements of 40 CFR 60 Appendix B or by simultaneously meeting both of the mean difference criteria specified below. The mean difference criteria evaluation shall be performed on the raw (uncorrected for diluent) emission concentration values.

(1) Mean Difference : $|\bar{d}| \leq 10$ *ppm*

(2) Mean Difference (with confidence coefficient) : $|\bar{d}| + |cc| \leq 15$ *ppm*

where, $|\bar{d}|$ *= Absolute value of the mean of the differences ,* $|cc|$ *= the confidence coeffi*

c. When performing relative accuracy tests at a source which has a combustion efficiency (CO/ Carbon Dioxide (CO_2)) emission limitation, both the CO and the CO_2 monitoring systems shall successfully meet the applicable relative accuracy specifications simultaneously;

d. Any CEM systems that measure emission concentrations on a wet basis shall perform moisture analyses in accordance with 40 CFR 60, Appendix A, Reference Method 4. The moisture data shall be used for determining accuracy of diluent analyzers utilized with dilution extractive systems **and** shall be included with the Relative Accuracy Test Audit report for all affected CEM systems;

e. Each day Relative Accuracy tests are conducted, the daily calibration drift must indicate that the system to be tested is in compliance with 40 CFR Part 60, Appendix F drift criteria or other applicable criteria. A CEM system channel that is Out-of-Control must be corrected using the procedures established in the source's CEM quality

assurance/quality control (QA/QC) Plan. Any deviance from the source's written CEM QA/QC procedures may require, at the Department's discretion, submission of a QA/QC Plan revision. Such revision shall be made within 30 days from the source's receipt of written notification from the Department;

f. Relative Accuracy tests shall be conducted with the CEM system operating in the normal sampling mode and may be witnessed by representatives of the Department. CEM systems which use one analyzer to monitor two or more sample locations shall not be operated in a manner that would increase the sampling time over normal operation (e.g., the data system may not be allowed to lock on one channel during the Relative Accuracy tests);

g. During all Relative Accuracy testing, daily calibration checks shall be conducted using the normal procedures as established by the source specific CEM QA/QC Plan. The RA tests may be aborted, at the discretion of the source, if unscheduled maintenance or adjustment becomes necessary. However, if corrective actions other than routine adjustments (as determined by a representative of the Department's Bureau of Air Management CEM Division) are required, at the discretion of the Department representative, a twenty-four (24) hour period shall elapse to verify that the CEM system is in compliance with CEM QA/QC Plan and 40 CFR 60 Appendix F drift requirements before a new Relative Accuracy test is initiated;

h. Relative accuracy testing shall be conducted with the source operating under normal and representative conditions. Operating conditions shall be approved by the Department prior to testing of the CEMs and shall be suitable for evaluating the monitor's performance effectively;

i. Any source with a CEM system or instrument which fails to meet applicable Relative Accuracy acceptance criteria shall conduct no more than two additional relative accuracy test programs. At the discretion of the Department, failure on the third certification attempt shall be adequate cause for requiring replacement of the subject CEM system, instrument(s) and/or sampling system(s).

3.6 CEM Requirements Prior to Stack Testing

Prior to conducting source emission compliance (stack) testing, CEM equipment shall be installed and operational per the CEM manufacturers written instructions. For the purposes of making

this determination, all CEM performance testing required by section 3, with the exception of the requirements of section 3.5 regarding relative accuracy testing, shall be successfully completed by the facility.

SECTION 4 : QUALITY ASSURANCE AND QA/QC PLAN

4.1 Introduction

The purpose of this section of the Guideline is to assist sources with issues related to ongoing quality assurance. A written CEM QA/QC Plan is imperative for prolonged acceptable operation of a CEM system. Each source should develop a plan to be maintained by a designated QA/QC officer. The QA/QC Plan shall be submitted to the BAM for review. The source shall be responsible for updating its QA/QC Plan and for notifying BAM of any substantive changes to the QA/QC Plan. This section presents the general guidelines for CEM QA/QC that are the minimum necessary for quality control and assessment of data submitted to the BAM CEM Group. The guidelines presented are based on 40 CFR 60, Appendix F and the EPA Quality Assurance Handbook for Air Pollution Measurement Systems (EPA 600/4-77-027b), which contains four sections dedicated to CEM. These sections are listed below:

Section	Title
3.0.4	"Procedure For NBS Traceable Certification of Compressed Gas Working Standards Used For Calibration and Audit of Continuous Source Emission Monitors (Rev. 6/9/87)"
3.0.7	"Calculation and Interpretation of Accuracy For Continuous Emission Monitoring Systems (Rev. 11/5/85)"
3.0.9	"Continuous Emission Monitoring (CEM) Systems: Good Operating Practices (Rev. 6/1/86)"
3.0.10	"Guideline For Developing Quality Control Procedures For Gaseous Continuous Emission Monitoring Systems (CEMS) (Rev. 11/26/85)"

Quality assurance consists of two distinct and equally important functions: 1) The assessment of the quality of the monitoring data; and 2) The control and improvement of the CEM data quality through implementation of quality control policies, procedures, and corrective actions. These two functions form a control loop. When the assessment function indicates that the data quality is inadequate, the control effort must be increased until the data quality is acceptable.

Each applicant must develop and implement a QA/QC program consisting of procedures, specifications and documentation necessary to:

- Provide data of adequate quality to meet monitoring objectives

- Minimize loss of data due to malfunctions or out-of-control conditions

4.2 CEM QA/QC Plan Format

Procedures pertaining to the QA/QC for each continuous emissions monitoring system shall be contained in the CEM QA/QC Plan. It is strongly suggested that the source take responsibility for QA/QC activities and modify its CEM QA/QC Plan in response to experience gained from system operation and performance. The QA/QC Plan will be a working reference document to be used in the day-to-day operation of all required CEM equipment. The minimum information required is specified below:

1. **Method Summary:** A discussion of the measurement method and sample extraction method (including a diagram of the flow path of the sample), the theory of instrument operation, and any other information pertinent to the operation of the instrument(s);

2. **System Operation:** Discussion of CEM operation including, but not limited to, sampling system configuration and design, daily and periodic checks, troubleshooting and corrective actions. Forms to be used for daily system performance tracking shall be included;

3. **Equipment Calibration:** Discussion should include levels of standards, calibration intervals, calibration record keeping system and a basic description of the calibration equipment and procedures for operation. Data sheets should be included to record pertinent data;

4. **Calibration Drift Determination:** Discussion must include method(s) to determine calibration drift. Calibration drift should be determined for the entire sampling system (i.e., pass the calibration gas through all filters, scrubbers, conditioners, and other monitor components used during normal sampling, and as much of the sampling probe as practical). Control limits should be established and response actions for out-of-control conditions must be specified. Automatic calibration adjustment should be discussed in relation to calibration drift when applicable;

5. **Preventative Maintenance:** A description of procedures and tracking systems to be used to insure proper maintenance of CEM equipment including forms to be used to track maintenance items. A list of spare parts to be inventoried and a description of the system to be used to replenish the inventory should also be included;

6. **Equipment Repair or Replacement:** A description of the steps to be taken in the event an analyzer must be repaired or replaced including, but not limited to, the following:

- interim monitoring;

- notification protocol;
- equipment certification procedures;
- interim data reporting;

7. **Accuracy Auditing:** Descriptions of audit frequency, method and equipment are to be discussed in this section;

8. **Standards and Traceability:** A description of certification procedures for all standards involved in auditing and calibrating are to be included;

9. **Data Recording, Calculations and Reporting:** A description of procedures for correcting and/or rejecting data, data reduction methods, data communication, precision and accuracy assessments and reporting should be discussed in this section.

4.3 Data Validation

The goal of the QA/QC program is to minimize CEM downtime and provide data complying with accuracy and precision criteria specified in any DEP permit, enforcement order or the applicable regulations for the facility. These criteria should be considered a minimum and the source is encouraged to develop more stringent guidelines to ensure the precision, accuracy and completeness of data submitted to the BAM. CEM data that does not comply with EPA's accuracy and precision criteria can not be counted toward minimum data capture requirements.

A. Calibration Drift - Precision Assessment

Precision shall be determined daily based upon calibration drift (CD) measurements for opacity and gaseous CEMs; other CEMs may also be subject to daily CD measurements if specified by DEP. Failure to meet minimum drift requirements will result in the system being considered out-of-control until corrective action is taken and a successful drift test is completed. The following paragraphs specify adjustment and acceptance criteria for gaseous monitors.

System calibrations are required to be performed once every 24 hours (Ref. 40 CFR 60.13(d) and 40 CFR 60, Appendix F, Section 4.1). This can be done either manually or automatically, but it is commonly initiated automatically by the CEM system controller or computer. The calibration check is conducted at two levels: at a low-level value (zero or a value between 0 and 20 percent of the span value) and at a high-level value (between 50 and 100 percent of the span value).

Out-of-control conditions for excessive calibration drift, as defined in 40 CFR 60, Appendix F, can occur due to either of the following criteria:

1. When either the low-level (zero) or high-level calibration check result is greater than two times (2x) the calibration drift specification for 5 consecutive days, the out-of-control period begins at the time at which the fifth (5th) check is conducted and ends when the system next passes a calibration drift check.

2. When either the low-level (zero) or high-level calibration check result is four times (4x) the calibration drift specification for any one day, the out-of-control period begins at the time at which the calibration check conducted on the previous day was completed and ends when the system next passes a calibration drift check.

Data recorded during an out-of-control period is considered invalid data and shall not be counted toward quarterly data availability.

The instrument operator may not have to rezero or recalibrate the system every 24 hours when the values are checked. Small values for drift might be due to system noise. The requirements of 40 CFR 60.13(d) specify that the system needs to be adjusted only when the drift is twice (2x) the PST drift specification. For example, because the drift specification is 2.5 percent of the span value for SO_2 ,NO_x and CO analyzers, the system does not have to be adjusted until the drift exceeds 5 percent of the span value for these monitors. In any case, it is required that the unadjusted concentrations be recorded **prior to** any adjustments. The amount of adjustment should also be recorded.

Opacity Calibration Drift Criteria

In addition to the requirements set forth in 40 CFR 60, opacity CEMs operated pursuant to a DEP issued permit or regulation must comply with the following precision specifications:

- At a minimum, each opacity CEM shall be calibrated (adjusted) whenever the opacity CEM zero or upscale value daily calibration exceeds (+/-) 2% opacity.

- An out-of-control period, determined from daily calibration drift, shall be defined as the time when either the zero or upscale value exceeds the manufacturer's specified value by (+/-) 2% opacity for five consecutive days or (+/-) 5% opacity on any one day. The out-of-control period begins with either the fifth consecutive occurrence of a drift value exceeding (+/-) 2% opacity or with the last daily check preceding the single occurrence of a drift value exceeding (+/-) 5% opacity. The out-of-control period ends with the calibration drift check, conducted after corrective action, within the allowed limits. Data collected during an out-of-control period cannot be counted towards meeting minimum data capture requirements.

The following table may be used as guidance in determining the applicable calibration drift tolerance.

Monitor	Level at which CEM shall be adjusted	Level at which CEM is Out-of-Control	
		Any one day	Any five consecutive days
Pollutants (e.g., SO_2, NO_X, CO)	5% of span	10% of span	5% of span
Diluents (e.g., CO_2, O_2)	1.0% CO_2 or O_2	2.0% CO_2 or O_2	1.0% CO_2 or O_2
Opacity	2% opacity	5% opacity	2% opacity

B. **Quarterly Audits - Accuracy Assessment**

Quarterly audits must be conducted by the source on opacity and gaseous CEMs; other CEMs may also be subject to quarterly audits if specified in a DEP permit, enforcement order or applicable regulation. The source should submit written notification to the DEP at least 30 days prior to the proposed test dates for quarterly cylinder gas audits, relative accuracy audits or opacity monitor audits, and at least 60 days prior to the proposed test dates for relative accuracy test audits.

Each CEM system must be audited at least once each calendar quarter. Failure of any accuracy audit results in out-of-control conditions until corrective actions are taken and a successful audit is completed. Data collected during an out-of-control period cannot be counted toward minimum data capture requirements. The following paragraphs specify the minimum acceptable accuracy and the required audit procedures for opacity and gaseous CEMs.

Quarterly Audits for Opacity Monitors: Audits for opacity monitors shall be conducted quarterly in accordance with procedures contained in the EPA document, Performance Audit Procedures for Opacity Monitors, EPA document # 450/4-92-010. A clear path zero alignment and calibration, as described in Section 9 of Performance Audit Procedures for Opacity Monitors, shall be performed annually by the source during scheduled shutdown or as otherwise described by the source's CEM QA/QC Plan. If adequate audit procedures are not contained in Performance Audit Procedures for Opacity Monitors for the opacity vendor chosen by the facility, the procedures shall be modified and must be approved, in writing, by the DEP. As a minimum, the criteria contained in Performance Audit Procedures for Opacity Monitors

shall be used to determine compliance. In addition to the requirements contained in this paragraph, the following additional information shall be supplied for each neutral density filter used in any opacity monitor accuracy assessment:

- Each audit filter's original calibration date and spectrophotometer data/trace, as reported by the manufacturer of the audit filter, meeting the requirements of paragraph 1 of Section 7.1.3 of Performance Specification 1. This shall indicate the actual (and original) value of the audit filters;

- Submit the audit filter manufacturer's written specification of the period over which the audit filter is to remain stable, along with any special instructions for the storage and handling of the audit filters;

- If a lab quality transmissometer (secondary instrument) was used to check the stability of the filters used for opacity performance audits, provide the serial number of the transmissometer and the data which indicates that the opacity monitor was properly calibrated during the time that the subject audit filters were analyzed (e.g., serial numbers, spectrophotometer data/traces and dates of calibration of the attenuators used to calibrate the lab quality transmissometer and the associated data confirming calibration of the transmissometer);

- Submit a statement with the current date of calibration of the audit filter and the current value of the audit filter and a statement certifying the values and certifying that the procedure specified by section 7.1.3 of 40 CFR 60, Performance Specification 1, or equivalent, was adhered to.

Quarterly Audits for Gas CEMs: Audits should be conducted according to 40 CFR Part 60, Appendix F. Each CEMS must be audited at least once each calendar quarter. Successive quarterly audits shall occur at least two months apart. A Relative Accuracy Test Audit (RATA) must be conducted at least once every four calendar quarters. The RATA shall be conducted in accordance with section 3.5 of this Guideline. Cylinder Gas Audits (CGAs) may be conducted in three of four calendar quarters, but in no more than three quarters in succession. As specified in 40 CFR Part 60 Appendix F, inaccuracy must not exceed 15% determined with a Cylinder Gas Audit (CGA) and 20% (or 10% of the emission standard) determined with a Relative Accuracy Test Audit (RATA).

In addition to the requirements above, the following additional information shall be supplied in each quarterly audit report:

- Proof of cylinder gas certification;
- CEMS and reference method responses;
- Assessment of CEMS data accuracy and the date of assessment.

The following table may be used as guidance in determining the allowable accuracy tolerances for CEMs.

Monitor	Audit Type	Frequency Performed	Accuracy Specification
Pollutants (e.g., SO_2, NO_x, CO), and Diluents (e.g., CO_2, O_2)	Cylinder Gas Audit (CGA) or Relative Accuracy Audit (RAA)	Quarterly	+/-15% of the average audit gas value or +/-5 ppm for CGA and +/-15% of the Reference Method (RM) or +/-7.5% of the Emission Standard (ES) for the RAA
Opacity	Opacity Performance Audit	Quarterly	+/- 3% calibration error
Flow	Relative Accuracy Audit	Quarterly	+/-10% of RM
Moisture	Relative Accuracy Audit	Quarterly	+/-15% of RM
Pollutants (e.g., SO_2, NO_x, CO)	Relative Accuracy Test Audit	Annually	+/-20% of RM or +/-10% of ES for SO_2 and NO_x, +/-10% of RM, +/-5% of ES or +/-10 ppm mean difference for CO
Diluents (e.g., CO_2, O_2)	Relative Accuracy Test Audit	Annually	+/-20% of RM or +/-1.0% mean difference
Opacity	Opacity Clear Stack Zero Audit	Annually	+/-3% calibration error

C. Data Availability

Minimum data capture shall be maintained in accordance with the following specifications:

- CEM percent data availability shall be calculated on a quarterly basis and the results of the calculation shall be included with the CEM quarterly report information. All gaseous CEMs must comply with 40 CFR 60 Appendix F drift criteria.

- For data reduction purposes, the data block period shall be one (1) hour for gaseous and parameter monitors and six (6) minutes for opacity monitors. In order to consider CEM data valid for determining compliance with minimum data capture requirements, each CEM data block period must contain valid data points for at least seventy-five percent (75%) of such data block period.

- Percent data availability shall be calculated using the following equation:

$$\text{Data Availability} = \frac{\text{Unit Operating Time - Total CMS Downtime}}{\text{Unit Operating Time}} \times 100$$

Where:

Unit Operating Time = Total number of hours that the unit (or process) was operated at any level.

Total CMS Downtime = Total time during periods of operation (Unit Operating Time) in which invalid CMS data or no CMS data is collected due to any reason and results in the invalidation of a data block period. This includes periods of QA activities such as calibration, preventative maintenance, and audits which result in periods of invalid data, and "out-of-control" periods.

- CMS downtime should be determined and compiled on a data block period basis. For example, if downtime occurred for 25 minutes during a 1-hour data block period for a gaseous CEM, the entire 1-hour block would be counted as downtime because less than 75% of the data points in that data block period were valid. Conversely, if invalid data occurred for 8 minutes during a 1-hour data block period for a gaseous CEM, the entire 1-hour block would be counted as valid data. If calibration of an opacity monitor lasted 10 minutes, 12 minutes would be counted as downtime (two 6-minute data blocks). Total CMS downtime should be a multiple of 1 hour for gaseous and parameter monitors and a multiple of 6 minutes for opacity monitors.

- Percent data availability for opacity CEMs should not be less than 95% in any one quarter. Percent data availability for gaseous CEMs should not be less than 90% in any one quarter. If the percent data availability for any CEM is determined to be less than these applicable levels in any one quarter, an engineering evaluation should be submitted to the DEP detailing the reason(s) for the insufficient data availability, corrective actions taken to prevent further loss of CEM data and a description of any changes made to the source QA/QC Plan.

4.4 System Audits

Gas and opacity CEM systems may be inspected and audited periodically by the DEP. The source shall be responsible for incorporating audit provisions into the CEM system hardware. Such provisions shall include audit gas inlet ports, located as close to the sampling probe tip as possible for gas CEMs or audit jigs to hold neutral density filters on opacity monitors, as necessary. Opacity audits will be conducted according to the EPA procedures contained in Performance Audit Procedures For Opacity Monitors (EPA-450/4-92-010). The DEP will provide audit materials including EPA Protocol 1 gas and NIST traceable neutral density filters for conducting these audits. Failure of any DEP conducted CEM audits shall require the source to consider the CEM data out of control. Corrective action must be taken immediately and the data shall be deemed invalid data until a successful audit is passed. Follow-up audits will be conducted by the source or by an independent contractor at the expense of the source.

When practicable, DEP will try to provide the source with at least 15 days notice prior to conducting any system audits.

4.5 Equipment Repair and Replacement

The CEM QA/QC Plan should specify, as explicitly as possible, when recertification of a CEM would be performed after repair or replacement of monitoring system components. It is difficult, if not impossible, to cite every case which would require recertification of a CEM system. In general, the following guidelines can be used to determine if recertification of a CEM system would be necessary after repair or replacement of monitoring system components:

- Manufacturer's written instructions and the CEM QA/QC Plan should be used as guidance when making any repairs or replacements of monitoring system components. If necessary, checks should be made with EPA Protocol gases or certified neutral density filter (for opacity CEMs) after significant repairs;

- Recertification is necessary if the sampling system design is changed or if a significant repair is made to the sampling system (i.e., a repair which could affect the ability of the CEM system to pass certification tests). For example, if a condenser fails which is already part of the sampling system design and the source owner or operator replaces the condenser with the same design or type, it would probably not be necessary to recertify the CEM system. However, if the facility changes the condenser design (e.g., from a three stage condenser to a two stage), a recertification may be necessary. Replacement of an existing heated sampling line (same type and length) probably would not require recertification. Essentially, if the source owner or operator can demonstrate that the repairs or modifications do not affect the ability of the CEM system to pass certification tests, DEP would not require recertification. In any case, DEP should be consulted regarding the need to repeat certification under these circumstances;

- Recertification is not necessary if a gas analyzer or opacity control unit is replaced with the same make and model number as the old analyzer or opacity control unit;

- If a Data Acquisition System (DAS) is replaced or modified, the operation of the new DAS must be proven to the satisfaction of the DEP. For example, sufficient proof of the accuracy of all constants, calculations and DAS reports must be submitted for DEP to determine if a recertification test would be necessary;
- QA/QC Plans should be updated with any CEM system component or design changes;

- DEP must be notified promptly in the event that the monitoring system breakdown, failure or shutdown is expected to continue for longer than 72 hours;

- The burden of proof regarding the certification status is always on the source owner or operator. If changes are made to the CEM system which invalidate previous QA/QC test results, data could be considered invalid by the DEP and data availability would be affected.

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SECTION 5 : ENFORCEMENT AND REPORTING

5.1 Enforcement Issues

One purpose of the Enforcement Matrix included in the CEM Plan is to provide the basis for a source to report the compliance status which the facility has achieved with respect to the emission limits established by a permit, enforcement order or applicable regulation.

For the purposes of this section, an exceedence shall be defined as a period when valid CEM data for a constituent exceeds the applicable emission limitation for that constituent over the applicable reportable averaging period. Monitor downtime shall be defined as periods of unit/process operation in which no CEM data or invalid CEM data is collected due to any reason.

5.2 Reporting and Notification Requirements

Sources required to install and operate CEM equipment pursuant to permits, state orders or applicable regulations are required, as a minimum, to submit the CEM reports and notifications described below. (Please be aware that the reports listed below may not be a complete list of reporting requirements. Some unit/process types may also have additional reporting or notification requirements.) A description of the minimum contents for each required report or notification are as follows:

A. Quality Assurance Testing Notification

When a source plans to conduct QA testing on its CEM system, written notification must be submitted to the Department. For CGAs and opacity audits, notification should be submitted thirty (30) days prior to the proposed test date. For RATAs, a Relative Accuracy Intent to Test form (attached in Appendix B) shall be completed and submitted with the test protocol to the Department sixty (60) days prior to the proposed relative accuracy test date.

B. Notification of Exceedence

If required by a source's operating permit, a written and certified (by signature) report shall be submitted to the Department within three (3) working days of any exceedence. The report shall contain a description of the exceedence, the time of the exceedence, the exceedence level and duration, a summary of action taken by the source to return to compliant operation, and a notation of the hour(s) during which any start-up, shut-down or malfunction occurred, if applicable. (Form attached in Appendix B).

C. Quarterly Emissions and Quality Assurance Report

In an effort to get all CEM sources in Connecticut to submit Quarterly Reports compiled in a consistent manner, following are some brief instructions for completing the quarterly

summary forms (attached in Appendix B). If the Commissioner modifies any report summary form(s), the source shall commence reporting with the new form(s) within thirty (30) days after the end of the succeeding calendar quarter.
As required by 40 CFR 60, **the Quarterly Emissions and Quality Assurance Report must be submitted by the 30th day following the end of each calendar quarter.** The following information, as a minimum, shall be included:

1. **"Continuous Source Monitoring Quarterly Summary Report" form**

This form shall be completed once for each facility. For companies which include several facilities in one Quarterly Report, this form must be completed for each separate facility.

If there are several units at a facility, the questions on this sheet should be answered for each unit (where applicable).

EX. "Were there any CEM monitor system failures this quarter?"
ANS. Unit 1 - yes, Unit 2 - yes, Unit 3 - no

This form shall also includes the Quarterly Report Certification which must be signed for each separate facility. The company representative signing this form shall be responsible for verifying the accuracy of all submitted information for that facility.

2. **"Continuous Source Monitoring Performance Report" form**

This form shall be completed for each monitor at a facility. Data Availability shall be calculated on a quarterly basis. The equation which shall be used is noted on the bottom of the form.

Please note the explanation of "Total CMS Downtime." This includes time in which the monitoring system itself is not down, but the data the system is producing is invalid. Also note that downtime due to daily calibrations and downtime due to other QA activities are categorized differently.

As explained in section 4.3.C of this Guideline (page 21), total CMS downtime should be a multiple of 1 hour for gaseous and parameter monitors and a multiple of 6 minutes for opacity monitors.

Attached in Appendix C of this Guideline are some examples of how periods of CMS Downtime are catagorized. Appendix C is a working document which may be updated independently from this Guideline in order to add more examples as they are encountered by sources.

3. **"Quarterly Excess Emission Report" form**

This form shall be completed for each monitored pollutant at a facility which has an emission limitation. In the "Emission Limit" section, please list the length of the averaging period and indicate whether the averaging time being used

is a block average or a rolling average.

When compiling the "Excess Emissions Data Summary" section, the exceedence must be recorded any time a permit limit is exceeded for the applicable averaging period. This includes periods during start-up when a different fuel may be used to start up a unit (i.e. - gas or oil is used to bring a MWC unit up to proper temperature.) Following on page 28 (section 5.2.D) is guidance to help identify and quantify periods of excess emissions.

Periods which the CMS reports as exceedences but are actually misreadings caused by invalid data or CEM malfunctions should not be included on this form. These periods should be included on a **list of exceedences** and labeled as "false exceedences".

4. **List of Exceedences**

In addition to the three forms discussed above, the source shall submit a list which at a minimum includes the date and time of all exceedences (both actual and "false"), the applicable emission limit, and the magnitude and duration of each exceedence. For "false" exceedences (i.e. - misreadings caused by invalid data or CEM malfunctions), an explanation of why the exceedence was "false" shall be included. The source shall also note which exceedences were caused by start-up or shut down. No form has been developed for the list at this time, so sources can use an existing format as long as all the required information is included. Below is an example of how this information could be presented.

EX. MWC - UNIT 1
SO2 - 0.32 lb/mmBTU - 3 hour block

DATE	TIME	MAGNITUDE	COMMENT
09/24/93	1200-1500	.35	
10/04/93	0600-0900	.41	Emission occurred during start-up. Oil was being burned rather than trash.
10/04/93	1500-1800	.34	DAS malfunctioned - readings are not of actual emissions. Data is invalid.

NOTE: For sources such as utilities which report opacity exceedences for two different levels (10% or 20% and 40%), a list of exceedences does not have to be compiled for the 40% opacity exceedences.

5. **List of Shut Down Periods**

The source shall submit a list which includes the start and end times of all shut down periods which occurred during the previous quarter.

6. **Summary of QA Activities and Data**

A summary of all Quality Assurance (QA) activities and all required QA data (i.e. - data obtained from CEM audits);

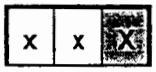
7. **CEM Data Submittal**

For any CEM constituent recorded by a computerized data acquisition system, all raw CEM data (hourly data for gaseous and parameter CEMs and six minute averaged data for opacity CEMs) shall be submitted on floppy diskette (preferably 3.5") in ASCII readable format. For sources subject to 40 CFR 75, a copy of the ORISPL data should be submitted to CT DEP on a quarterly basis.

D. **Guidance for Determining Periods of Excess Emissions**

INDIVIDUAL HOURS WHICH EXCEED EMISSION LIMIT

AVERAGING PERIOD OUT OF COMPLIANCE DUE TO HOURLY EXCESS EMISSION(S)



BLOCK AVERAGING

For block averaging, the day is broken into discrete blocks of time (00:00-03:00, 03:00-06:00, etc). Averaging periods do not overlap. If the emission average for the block averaging period is higher than the applicable emission limit, the entire block of time is counted as exceedence time, even if just one of the hourly averages caused the block average to exceed the limit.

EXAMPLE - 3 HOUR BLOCK AVERAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	1	2	3	4	5
			x	x	X							x	X	x							X	x	X					

3 HOURS 3 HOURS 3 HOURS

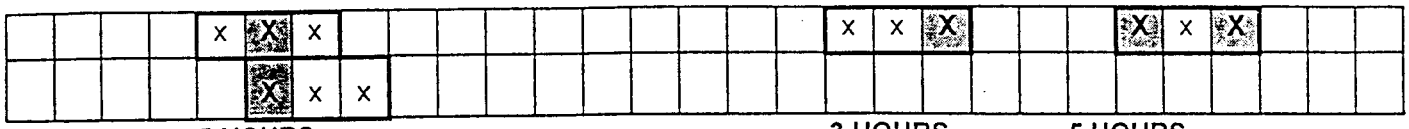
9 HOURS TOTAL EXCEEDENCE TIME

ROLLING AVERAGING

For rolling averaging, a new rolling average is calculated each hour. Individual hourly averages will be used by multiple rolling averaging periods, as these periods do overlap (00:00-03:00, 01:00-04:00, 02:00-05:00, etc). Again, even if just one of the hourly averages caused the rolling average to exceed the limit, the entire rolling average period is counted as exceedence time. If periods of excess emissions overlap, the overall exceedence time begins at the start time of the first exceedence period and ends at the end time of the last exceedence period.

EXAMPLE - 3 HOUR ROLLING AVERAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	1	2	3	4	5
			x	x	X																x	x	X					



13 HOURS TOTAL EXCEEDENCE TIME

EXAMPLE - 24 HOUR ROLLING AVERAGE

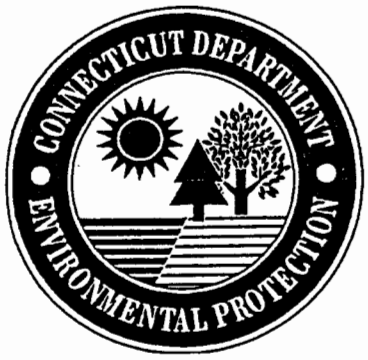
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	1	2	3	4	5
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					
					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

29 HOURS

29 HOURS TOTAL EXCEEDENCE TIME

APPENDIX A

CEM PLAN SUMMARY FORM



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR MANAGEMENT
79 Elm Street
Hartford, CT 06106-5127

Continuous Emission Monitoring Plan Summary Form

Source Name	

Permit/Reg No.		**Unit No./ID**		**Initial:**

Permit/Reg No.		**Unit No./ID**		**Initial:**

Submittal: ☐ **New** ☐ **Revised**

General Instructions:

All sections of this form must be filled in or addressed adequately for the plan summary to be acceptable. For sources with multiple units which have identical CEM requirements, the information requested on the pages of this CEM Plan Summary Form must be completed for each unit.

(A) Facility Overview

Step 1:

At the bottom of each page of this CEM Plan Summary Form, fill in the Permit or Registration number and the Unit or Process ID number. After the form is complete, initial each page.

Step 2:

List the names and phone numbers of contacts with full authority to implement the CEM Plan.

Source Name	
Address	
City	
State & Zip	
Contact Name 1	
Phone & Fax	
Contact Name 2	
Phone & Fax	

Step 3:
Describe the unit/process which is subject to CEM requirements and list regulations applicable to this unit/process.

Description:	
State Regs	**Federal Regs**

Step 4:
Indicate estimated milestone dates. For existing units, give actual dates.

Milestone	Date(s)
Construction Start	
Unit Start-Up	
Plant Full-Operation	
CEM Performance Tests	

Step 5:
Check all applicable continuous monitoring requirements for the unit/process. For requirements not specified, list under "other".

Continuous Monitoring Requirements for this Permit/Registration

Inlet Monitors (inlet to control equipment)	**Outlet Monitors**
☐ Sulfur Dioxide ☐ Nitrogen Dioxide ☐ Hydrogen Chloride ☐ Carbon Monoxide ☐ Carbon Dioxide ☐ Oxygen ☐ Flow Rate	☐ Sulfur Dioxide ☐ Nitrogen Dioxide ☐ Hydrogen Chloride ☐ Carbon Monoxide ☐ Carbon Dioxide ☐ Oxygen ☐ Opacity ☐ Flow Rate
Other Continuous Monitoring Requirements	
☐ Sulfur Dioxide Reduction Efficiency ☐ Combustion Temperature ☐ Combustion Efficiency ☐ Process Steam Load ☐ Water/Fuel Ratio	☐ Other (list below)

(B) Enforcement Protocol

Step 6:
Fill in all applicable emission limits, averaging periods and reporting units for the unit/process subject to CEM requirements.

Enforcement Matrix

Emission/Process Limits, Averaging Periods and Reporting Units

Pollutant/Parameter Monitored	Emission Limitation and Reporting Units	Reportable Averaging Period (indicate rolling or block)	Source Response	Start-Up/ Shut- Down/ Malfunction Exemptions
Opacity				
Sulfur Dioxide				
Nitrogen Dioxide				
Carbon Monoxide				
Sulfur Dioxide Reduction Efficiency				
Combustion Efficiency				
Combustion Temperature				

Permit/Reg No.		Unit No./ID		Initial:

Enforcement Matrix (cont.)

Emission/Process Limits, Averaging Periods and Reporting Units

Pollutant/Parameter Monitored	Emission Limitation and Reporting Units	Reportable Averaging Period (indicate rolling or block)	Source Response	Start-Up/ Shut- Down/ Malfunction Exemptions
Final Particulate Matter Control Device Temp.				
Steam Load				
Water/Fuel Ratio				
Other (specify)				
Other (specify)				

☐ I understand that Continuous Emissions Monitoring data collected in accordance with regulations, permits or enforcement orders applicable to this source may be used by the Department of Environmental Protection for enforcement purposes.

Permit/Reg No.		Unit No./ID		Initial:

Certification Statement

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which this submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining information, I certify that the statements and information are to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements or information, including the possibility of fine or imprisonment.

Name	
Signature	Date

APPENDIX B

REPORTING AND NOTIFICATION FORMS

CONNECTICUT DEP - Bureau of Air Management

CEM Forms Package, 08/19/96

CONTINUOUS EMISSION MONITORING QUARTERLY SUMMARY REPORT

GENERAL INFORMATION

Company name	
Facility name	
Facility address	
Contact person	
Contact phone number	
Reporting period dates	
Report submittal date	
Were there any excess emissions this quarter?	
Were there any CEM monitor system failures this quarter?	

EQUIPMENT INFORMATION

Applicable permit numbers	
Applicable federal regulations	
Type of fuel(s) combusted	
Brief description of equipment and pollution control devices	

QUARTERLY REPORT CERTIFICATION

I have personally examined and am familiar with the information submitted in this document and all attachments and certify (based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information) that the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement(s) made in this document or its attachments may be punishable as a criminal offense.

Today's date: _____

Signature
ompany Officer): _____

Print (or type)
name and title: _____

CONTINUOUS EMISSION MONITORING PERFORMANCE REPORT

Company name	
Reporting period	
Unit number	
Unit operating time	

MONITOR INFORMATION

Pollutant / Constituent	
Sampling location	
Manufacturer / Model number	
Instrument range(s)	
Date of last audit	
Audit type (e.g., CGA, RATA, RAA)	
Audit results (pass / fail)	

CMS DOWNTIME

REASONS	TIME (hours, or minutes for opacity)
Monitoring equipment malfunctions	
Non-monitoring equipment malfunctions	
Calibrations	
Other known causes [1]	
Unknown causes	
TOTAL CMS DOWNTIME	

QUARTERLY DATA AVAILABILITY RESULTS

Quarterly Data Availability (% of operating hours)(see below)	

Data Availability = $\frac{\text{Unit Operating Time - Total CMS Downtime}}{\text{Unit Operating Time}} \times 100$

Where:

Unit Operating Hours = Total number of hours that the unit (or process) was operated at any level.
al CMS Downtime = Total time during periods of operation (Unit Operating Time) in which invalid CEM data
o CEM data is collected due to any reason and results in the invalidation of a data block period.

---

[1] *- includes all Quality Assurance activities other than calibration (i.e., preventative maintenance, audits which result in periods of invalid data, etc.) and "out-of-control" periods.*

CONNECTICUT DEP - Bureau of Air Management

CEM Forms Package, 08/19/96

QUARTERLY EXCESS EMISSION REPORT

Company Name	
Reporting period	
Unit number	
Unit operating time	

POLLUTANT / EMISSION LIMITS

Pollutant / constituent monitored		
	Permit	Federal
Emission limit(s)		
Averaging period(s): (indicate length of ave. period and whether period is a rolling or block ave.)		

CONVERSION FACTORS (if applicable)

Diluent used for correction (O_2 / CO_2)	
CEM measurement basis (wet / dry)	
Fuel factor(s) / types (F_d / F_c / F_w)	
Conversion equation(s)	

EXCESS EMISSIONS DATA SUMMARY

Reason for excess emissions	Duration (in minutes for opacity, in hours for other pollutants)	
	List exceedences of DEP permit or Regulations	List violations of Federal standards
Start-up / shut down		
Control equipment malfunction		
Process malfunction		
Other known causes		
Unknown causes		
Total duration of excess emissions (hours or minutes)		
Total duration (as % of total unit operating time)		

CONNECTICUT DEP - Bureau of Air Management

CEM Forms Package, 08/19/96

QUARTERLY EXCESS EMISSION REPORT

Company Name	
Reporting period	
Unit number	
Unit operating time	

POLLUTANT / EMISSION LIMITS

Pollutant / constituent monitored	OPACITY		
	Permit		Federal (if applicable)
Emission limit(s)	20%	40%	
Averaging period(s):	6 minute block	instantaneous	

EXCESS EMISSIONS DATA SUMMARY

Reason for excess emissions	Duration (in minutes for opacity)		
	List exceedences of DEP permit or Regulations		List violations of Federal standards
Start-up / shut down		ONLY THE TOTALS (see below) ARE REQUIRED FOR THE 40% OPACITY READINGS	
Control equipment malfunction			
Process malfunction			
Other known causes			
Unknown causes			
Fuel problems			
Cleaning, Soot-blowing			
Total duration of excess emissions (hours or minutes)			
Total duration (as % of total unit operating time)			

NOTIFICATION OF EXCEEDENCE

Source Name	
Date of Exceedence	
Pollutant / Constituent	
Unit No.	

EXCEEDENCE DATA

Time of exceedence	Averaging period	Exceedence magnitude	Permit limit (with units)	Other applicable data

EXPLANATION OF EXCURSION(S)

Cause of excursions	Corrective action(s)	Preventative measure(s)

REPORT CERTIFICATION

DEP Contact Name	
day's Date	
Signature (Company Officer)	
Title	

CONNECTICUT DEP - Bureau of Air Management

CEM Forms Package, 08/19/96

RELATIVE ACCURACY INTENT TO TEST FORM

SOURCE INFORMATION

Source Name	
Address	
City, Zip Code	
Phone Number	
Proposed Test Date	
Report Submittal Date	
Source Category	
CEM Sampling Location (stack, breaching, etc.)	
CEM Type (extractive, in-situ, point in-situ, time-shared, dedicated)	

Constituents To Be Tested	SO_2 in	CO	CO_2 in	O_2 in	SO_2 out	NO_X	CO_2 out	O_2 out	% H_2O	

Other Constituents	

CONTRACTOR INFORMATION

Reference Method Testing Information

Horizontal or Vertical?	Duct Diameter	Rectangular Duct Equivalent Diameter (2LW / (L+W))	Diameters Upstream of Flow Disturbance	Diameters Downstream of Flow Disturbance

Traverse Point Locations

Point Number	% of Total Distance	Point Location

Sampling Methods

Constituent	CEM Method	Reference Method	No. of Samples

*** Attach sampling location sketch (include CEM and Reference Method Points)

APPENDIX C

CMS DOWNTIME - CATEGORIES & EXAMPLES

EXAMPLES OF CMS DOWNTIME

The purpose of this appendix is to give sources some examples of how periods of CMS Downtime are catagorized. This appendix is a working document which may be updated independently from the CT DEP CEM Guideline in order to add more examples as they are encountered by sources. Sources are encouraged to suggest additions to this appendix.

MONITORING EQUIPMENT MALFUNCTIONS
Downtime due to a failure or problem within the monitor itself, including: monitor bulb failure; monitor chopper motor failure; monitor vacuum pump failure.
NON-MONITORING EQUIPMENT MALFUNCTIONS
Downtime due to a failure or problem outside the monitor, including: sample line failure (clog, leak, solenoid failure); probe failure (clog, broken critical orifice); DAHS (Data Acquisition & Handling Sysytem) failure (computer system failure, data storage failure); fuel feed malfunctions.
CALIBRATIONS
Downtime due to daily calibrations.
OTHER KNOWN CAUSES
Includes downtime due to all Quality Assurance activites other than daily calibrations (preventative maintenance, audits which result in periods of invalid data) and "out-of-control" periods.
UNKNOWN CAUSES
As the catagory title states...

Appendix B: SOURCE STACK TESTING GENERAL REQUIREMENTS

The owner/operator shall conduct stack testing within sixty (60) days of achieving the maximum production rate, but not later than one hundred-eighty (180) days after initial start up.

Pursuant to the Regulations of Connecticut State Agencies, the owner/operator of this facility shall submit an Intent-to-Test (ITT) package consisting of an ITT form (Form AE404) and a test protocol. The test protocol shall be consistent with the Bureau's Emission Source Test Guideline specifying the test methodology to be followed and the conditions under which the process and its control equipment will be operated. The process shall be operated at a minimum of 90% of the permitted maximum rated capacity and the control equipment shall be operated as specified in this permit.

All proposed test methods shall comply with appropriate Federal test methods or methods acceptable to the Bureau. The ITT package must demonstrate compliance with applicable requirements of the Code of Federal Regulations (CFR) Title 40 Parts 51, 60 and 61. Any proposed test methods that deviate from those specified in these regulations must be approved by the Bureau prior to stack testing. All sampling ports shall be installed and located in compliance with 40 CFR Part 60 Appendix A, Method 1. Final plans showing the location of all sampling ports shall be submitted with the ITT package to the Air Bureau's Stack Test Group for approval prior to stack testing. Please submit an original and one copy of the ITT package to: Bureau of Air Management, New Source Review Section, 79 Elm Street, 5th Floor, Hartford, Connecticut 06106-5127.

An inspection of the source may be conducted to verify that appropriate instrumentation is available, and to determine the source process parameters, indicative of compliant operation, to be monitored during stack testing. Once the ITT package is approved, the owner/operator shall be notified, in writing, by the Bureau's Stack Test Group.

The source test must be scheduled, monitored by Bureau personnel, and completed within sixty (60) days from the date of Bureau approval of the proposed ITT package. It is the source's responsibility to conduct preparatory testing for tuning or debugging purposes prior to the Bureau-monitored stack testing. An acceptable test report must be submitted to the Bureau within forty-five (45) days of the completion of emissions testing. The owner/operator shall respond to any test report deficiency within fifteen (15) days of notification by the Bureau.

Acceptable test results will be incorporated into the final permit to operate. In the event that the stack test report is unacceptable, or the tested values show that the source is not in compliance with applicable permit conditions or regulations, a final permit to operate will be not be issued until the owner/operator responds to and corrects any deficiencies. The Bureau may issue an Administrative Order if there is a likelihood that the source may demonstrate compliance through a process modification and a retest.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

EMISSION TEST GUIDELINES

Emission tests performed in the State of Connecticut, for the purpose of complying with Connecticut Air Pollution Regulations or of proving compliance with specific Regulations, must follow Department of Environmental Protection emission test guidelines.

The guidelines are designed to ensure standardization of test requirements, standards regarding test equipment, and competence of persons intending to perform the emission test.

Reference test and analysis methods are as specified in Title 40, Code of Federal Regulations, Parts 51, 60 and 61. The reference methods and equipment requirements must be strictly complied with, unless otherwise specified and agreed to by this Department.

Emission test protocols and completed emission test reports shall be submitted to the Stack Test Group.

1. The Emission Test Protocol including Source Test Form No. 1, must be completed and signed by the tester and received by the Stack Test Group no less than thirty (30) days prior to the test or as specified by an applicable Permit or Enforcement Order. A mutually acceptable test date will be determined after Protocol approval. The Emission Test Protocol will be evaluated for its conformance to applicable test methods and process conditions.

   A. The Emission Test Protocol shall include, at a minimum, the following information:

      1. A schematic diagram of each sampling train, including construction materials.
      2. The type or types of media to be used to determine each gas stream component.
      3. Sample clean-up methods and solvents to be used.
      4. A sample of all field data sheets to be used during the test.
      5. Sampling area description.
         a. Stack configuration.
         b. Sampling port locations.
         c. Sampling point locations for each port.
      6. A written description of process operations to include:
         a. Materials used.
         b. Feed rates.
         c. Operational parameters.
         d. Rated capacity of equipment.
         e. Control equipment.
      7. A description of each test method to be used.
         a. Quality assurance/quality control procedures.
      8. Samples of calculations.

   B. Emission values obtained from any test program may be considered valid only for the process operating conditions existing during field testing. The source must be operated at or above ninety percent (90%) of maximum capacity. Operation of equipment at rates differing from those existing during testing may place the equipment in violation.

2. Selection of the measurement site shall be in strict accordance with Reference Method 1 of Title 40, Code of Federal Regulations, Part 60.

   A. For an existing source, drawings shall be submitted showing the plan and elevation view of the ducting and stack arrangement. The drawing should include the position of all processes or operations venting to the stack or duct to be tested. It should also include the position of the sampling ports relative to the nearest upstream and downstream gas flow directional or duct dimensional change.

   B. For a new or modified source, design drawings as specified above shall be submitted to the Stack Test Group prior to construction. A representative of the Stack Test Group will do an inspection of proposed sample port locations during the construction stage.

3. Department representatives will audit the field test procedures and process operation.

4. Prior to testing, calibration data as specified by the applicable test methods shall be submitted to the Department representative auditing the test. Frequency of calibration shall be as specified by the appropriate test methods.

5. Based upon availability, EPA audit samples may be supplied by CDEP for analysis along with collected field samples. Failure to meet audit criteria will result in rejection of test results.

6. At the conclusion of the field test, the Department's representative will collect copies of all test data sheets and process documentation.

7. The test results must be submitted to the Stack Test Group within 30 days after testing or by the date specified in the Permit, Regulation or Enforcement Order.

   A. The report shall include, at a minimum, the following information:

      1. Test results in tabular form including averages. The units of measurement shall be consistent with units in the applicable Regulation.
      2. A photocopy of all actual field data sheets used during the test. If any field data sheets are illegible, legible transcribed copies must also be included.
      3. A sample of all formulas used in calculating results.
      4. Copies of all pre and post calibration data.
      5. Quality assurance/quality control documentation.
      6. Process data in tabular form averaged over each test period.
      7. Laboratory data sheets and laboratory QA/QC.

8. Failure to provide any information as required by these guidelines may result in the rejection of the test and/or test program.

a:\stack\guideline.wpd 9-24-97

Source Test Form No.1

INTENT TO TEST

ITT # Assigned: ____

CT Department of Environmental Protection, Bureau of Air Management/ E&E, 79 Elm Street Hartford Connecticut 06106-5127

I. Source Information Person or Persons Responsible for Test	II.Billing Information CT reg.22a-174-26 (h)	III. Tester Information Person Responsible for Test
Company: _____ Source Address: _____ City&Zip: _____ Contact: _____ Telephone: _____	Company: _____ Billing Address: _____ City&Zip: _____ Billing Contact: _____ Telephone: _____	Company: _____ Address: _____ City&Zip: _____ Contact: _____ Telephone: _____ Signature: _____ Date: _____ (Person Performing Source Test)

IV. CT. Registration or Permit No.	V. Identify Equipment and Stack to be Tested:
Town ____ Premise ____ Reg. or Permit ____ Stack ____	

VI. Gas Stream Sampling Information. Identify all Gas Steam Components to be Sampled.

Gas Stream Components	Sampling Duration		Number of Tests	Expected Concen-trations	Brief Description of the test method to be used for each pollutant
	Minutes per point	Total Test Time	3 Min.		

Revised 9/24/97
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Form AE- 404

APPENDIX C

NEW SOURCE PERFORMANCE STANDARDS

Text: 40 CFR 1-1517

Subpart O-Standards of Performance for Sewage Treatment Plants

§ 60.150 Applicability and designation of affected facility.

(a) The affected facility is each incinerator that combusts wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis).

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 58521, Nov. 10, 1977]

§ 60.151 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

[39 FR 9319, Mar. 8, 1974]

§ 60.152 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere of:

(1) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(2) Any gases which exhibit 20 percent opacity or greater.

[39 FR 9319, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.153 Monitoring of operations.

(a) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall:

(1) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ñ5 percent over its operating range. Except as provided in paragraph (d) of this section, the flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(2) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

(3) Install, calibrate, maintain, and operate a weighing device for determining the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together. The weighing device shall have an accuracy of ñ 5 percent over its operating range.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall comply with the requirements of paragraph

(a) of this section and:

(1) For incinerators equipped with a wet scrubbing device, install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device. Where a combination of wet scrubbers is used in series, the pressure drop of the gas flow through the combined system shall be continuously monitored. The device used to monitor scrubber pressure drop shall be certified by the manufacturer to be accurate within ñ250 pascals (ñ1 inch water gauge) and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.

(2) Install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas. The oxygen monitor shall be located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air recirculation damper, or any other source of dilution air. The oxygen monitoring device shall be certified by the manufacturer to have a relative accurancy of ñ5 percent over its operating range and shall be calibrated according to method(s) prescribed by the manufacturer at least once each 24-hour operating period.

(3) Install, calibrate, maintain and operate temperature measuring devices at every hearth in multiple hearth furnaces; in the bed and outlet of fluidized bed incinerators; and in the drying, combustion, and cooling zones of electric incinerators. For multiple hearth furnaces, a minimum of one thermocouple shall be installed in each hearth in the cooling and drying zones, and a minimum of two thermocouples shall be installed in each hearth in the combustion zone. For electric incinerators, a minimum of one thermocouple shall be installed in the drying zone and one in the cooling zone, and a minimum of two thermocouples shall be installed in the combustion zone. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of ñ5 percent over its operating range. Except as provided in paragraph (d) of this section, the temperature monitoring devices shall be operated continuously and data recorded during all periods of operation of the incinerator.

(4) Install, calibrate, maintain and operate a device for measuring the fuel flow to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ñ5 percent over its operating range. Except as provided in paragraph (d) of the section, the fuel flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(5) Except as provided in paragraph (d) of this section, collect and analyze a grab sample of the sludge fed to the incinerator once per day. The dry sludge content and the volatile solids content of the sample shall be determined in accordance with the method specified under § 60.154(c)(2), except that the determination of volatile solids, step (3)(b) of the method, may not be deleted.

(c) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall retain the following information and make it available for inspection by the Administrator for a minimum of 2 years:

(1) For incinerators equipped with a wet scrubbing device, a record of the measured pressure drop of the gas flow through the wet scrubbing device, as required by paragraph (b)(1) of this section.

(2) A record of the measured oxygen content of the incinerator exhaust gas, as required by paragraph (b)(2) of this section.

(3) A record of the rate of sludge charged to the incinerator,

the measured temperatures of the incinerator, the fuel flow to the incinerator, and the total solids and volatile solids content of the sludge charged to the incinerator, as required by paragraphs (a)(1), (b)(3), (b)(4), and (b)(5) of this section.

(d) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart from which the particulate matter emission rate measured during the performance test required under § 60.154(d) is less than or equal to 0.38 g/kg of dry sludge input (0.75 lb/ton) shall be required to comply with the requirements in paragraphs (a), (b), and (c) of this section during all periods of this incinerator following the performance test except that:

(1) Continuous operation of the monitoring devices and data recorders in paragraphs (a)(1), (b)(3), and (b)(4) of this section shall not be required.

(2) Daily sampling and analysis of sludge feed in paragraph (b)(5) of this section shall not be required.

(3) Recordkeeping specified in paragraph (c)(3) of this section shall not be required.

(e) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall submit to the Administrator for approval a plan for monitoring and recording incinerator and control device operation parameters. The plan shall be submitted to the Administrator:

(1) No later than 90 days after October 6, 1988, for sources which have provided notification of commencement of construction prior to October 6, 1988.

(2) No later than 90 days after the notification of commencement of construction, for sources which provide notification of commencement of construction on or after October 6, 1988.

(3) At least 90 days prior to the date on which the new control device becomes operative, for sources switching to a control device other than a wet scrubber.

[36 FR 24877, Dec. 23, 1971, as amended at 53 FR 39416, Oct. 6, 1988]

§ 60.154 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter emission standards in § 60.152 as follows:

(1) The emission rate (E) of particulate matter for each run shall be computed using the following equation:

$$E = K(c_s Q_{sd})/S$$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of dry sludge input.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

S=charging rate of dry sludge during the run, kg/hr (lb/hr).

K=conversion factor, 1.0 g/g [4.409 lb2/(g-ton)].

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the

effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The dry sludge charging rate (S) for each run shall be computed using either of the following equations:

S=Km Sm Rdm/é
S=Kv Sv Rdv/é
where:
S=charging rate of dry sludge, kg/hr (lb/hr).
Sm=total mass of sludge charged, kg (lb).
Rdm=average mass of dry sludge per unit mass of sludge charged, mg/mg (lb/lb).
é=duration of run, min.
Km=conversion factor, 60 min/hr.
Sv=total volume of sludge charged, m3 (gal).
Rdv=average mass of dry sludge per unit volume of sludge charged, mg/liter (lb/ft3).
Kv=conversion factor, 60x10-3 (liter-kg-min)/(m3 -mg-hr) [8.021 (ft3 -min)/(gal-hr)].

(4) the flow measuring device of § 60.153(a)(1) shall be used to determine the total mass (Sm) or volume (Sv) of sludge charged to the incinerator during each run. If the flow measuring device is on a time rate basis, readings shall be taken and recorded at 5-minute intervals during the run and the total charge of sludge shall be computed using the following equations, as applicable:

$$Sm = \sum_{i=1}^{n} Q/mi \; éi$$

$$Sv = \sum_{i=1}^{n} Q/vi \; éi$$

where:
Qmi=average mass flow rate calculated by averaging the flow rates at the beginning and end of each interval ``i'', kg/min (lb/min).
Qvi=average volume flow rate calculated by averaging the flow rates at the beginning and end of each interval ``i'', m3 /min (gal/min).
éi=duration of interval ``i'', min.

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends, and ``209 F. Method for Solid and Semisolid Samples'' (incorporated by reference-see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

(i) Evaporating dishes shall be ignited to at least 103 øC rather than the 550 øC specified in step 3(a)(1).

(ii) Determination of volatile residue, step 3(b) may be deleted.

(iii) The quantity of dry sludge per unit sludge charged shall be determined in terms of mg/liter (lb/ft3) or mg/mg (lb/lb).

(iv) The average dry sludge content shall be the arithmetic average of all the samples taken during the run.

(6) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) [Reserved]

(d) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall conduct a performance test during which the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) are installed and operating and for which the sampling and analysis procedures required under § 60.153(b)(5) are performed. The owner or operator shall provide the Administrator at least 30 days prior notice of the performance test to afford the Administrator the opportunity to have an observer present.

(1) For incinerators that commenced construction or modification on or before April 18, 1986, the performance test shall be conducted within 360 days of the effective date of these regulations unless the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) were installed and operating and the sampling and analysis procedures required under § 60.153(b)(5) were performed during the most recent performance test and a record of the measurements taken during the performance test is available.

(2) For incinerators that commence construction or modification after April 18, 1986, the date of the performance test shall be determined by the requirements in § 60.8.

[54 FR 6668, Feb. 14, 1989, as amended at 54 FR 27015, June 27, 1989; 59 FR 5108, Feb. 3, 1994]

§ 60.155 Reporting.

(a) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall submit to the Administrator semi-annually a report in writing which contains the following:

(1) A record of average scrubber pressure drop measurements for each period of 15 minutes duration or more during which the pressure drop of the scrubber was less than, by a percentage specified below, the average scrubber pressure drop measured during the most recent performance test. The percent reduction in scrubber pressure drop for which a report is required shall be determined as follows:

(i) For incinerators that achieved an average particulate matter emission rate of 0.38 kg/Mg (0.75 lb/ton) dry sludge input or less during the most recent performance test, a scrubber pressure drop reduction of more than 30 percent from the average scrubber pressure drop recorded during the most recent performance test shall be reported.

(ii) For incinerators that achieved an average particulate matter emission rate of greater than 0.38 kg/Mg (0.75 lb/ton) dry sludge input during the most recent performance test, a percent reduction in pressure drop greater than that calculated according to the following equation shall be reported:

P=-111E+72.15
where P=Percent reduction in pressure drop, and
E=Average particulate matter emissions (kg/megagram)

(2) A record of average oxygen content in the incinerator exhaust gas for each period of 1-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than 3 percent.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator from which the average particulate

matter emission rate measured during the performance test required under § 60.154(d) exceeds 0.38 g/kg of dry sludge input (0.75 lb/ton of dry sludge input) shall include in the report for each calendar day that a decrease in scrubber pressure drop or increase in oxygen content of exhaust gas is reported a record of the following:

(1) Scrubber pressure drop averaged over each 1-hour incinerator operating period.

(2) Oxygen content in the incinerator exhaust averaged over each 1-hour incinerator operating period.

(3) Temperatures of every hearth in multiple hearth incinerators; of the bed and outlet of fluidized bed incinerators; and of the drying, combustion, and cooling zones of electric incinerators averaged over each 1-hour incinerator operating period.

(4) Rate of sludge charged to the incinerator averaged over each 1-hour incinerator operating period.

(5) Incinerator fuel use averaged over each 8-hour incinerator operating period.

(6) Moisture and volatile solids content of the daily grab sample of sludge charged to the incinerator.

(c) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall include in the semi-annual report a record of control device operation measurements, as specified in the plan approved under § 60.153(e).

[53 FR 39417, Oct. 6, 1988]

§ 60.156 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.153(e).

[53 FR 39418, Oct. 6, 1988]

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[Title 40, Volume 8]
[Revised as of July 1, 2001]
From the U.S. Government Printing Office via GPO Access
[CITE: 40CFR61]

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

PART 61--NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS--Table of Content

Subpart C--National Emission Standard for Beryllium

Sec. 61.30 Applicability.

The provisions of this **subpart** are applicable to the following stationary sources:

(a) Extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste.

(b) Machine shops which process beryllium, beryllium oxides, or any alloy

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when such alloy contains more than 5 percent beryllium by weight.

[38 FR 8826, Apr. 6, 1973, as amended at 65 FR 62151, Oct. 17, 2000]

Sec. 61.31 Definitions.

Terms used in this **subpart** are defined in the act, in **subpart** A of this part, or in this section as follows:

(a) Beryllium means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(b) Extraction plant means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

(c) Beryllium ore means any naturally occurring material mined or gathered for its beryllium content.

(d) Machine shop means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(e) Ceramic plant means a manufacturing plant producing ceramic items.

(f) Foundry means a facility engaged in the melting or casting of beryllium metal or alloy.

(g) Beryllium-containing waste means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this **subpart**.

(h) Incinerator means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

(i) Propellant means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(j) Beryllium alloy means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(k) Propellant plant means any facility engaged in the mixing, casting, or machining of propellant.

Sec. 61.32 Emission standard.

(a) Emissions to the atmosphere from stationary sources subject to the provisions of this **subpart** shall not exceed 10 grams (0.022 lb) of beryllium over a 24-hour period, except as provided in paragraph (b) of this section.

(b) Rather than meet the requirement of paragraph (a) of this section, an owner or operator may request approval from the Administrator to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 <greek-m>g/m \3\ (4.37x10⁻⁶ gr/ft \3\), averaged over a 30-day period.

(1) Approval of such requests may be granted by the Administrator provided that:

(i) At least 3 years of data is available which in the judgment of the Administrator demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed 0.01 <greek-m>g/m \3\ (4.37x10⁻⁶ gr/ft \3\), averaged over a 30-day period. Such 3-year period shall be the 3 years ending 30 days before the effective date of this standard.

(ii) The owner or operator requests such approval in writing within 30 days after the effective date of this standard.

(iii) The owner or operator submits a report to the Administrator within 45 days after the effective date of this standard which report includes the following information:

(a) Description of sampling method including the method and frequency of calibration.

(b) Method of sample analysis.

(c) Averaging technique for determining 30-day average concentrations.

(d) Number, identity, and location (address, coordinates, or distance and heading from plant) of sampling sites.

(e) Ground elevations and height above ground of sampling inlets.

(f) Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and locations shall be included.

(g) Information necessary for estimating dispersion including stack height, inside diameter, exit gas temperature, exit velocity or flow rate, and beryllium concentration.

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(h) A description of data and procedures (methods or models) used to design the air sampling network (i.e., number and location of sampling sites).

(i) Air sampling data indicating beryllium concentrations in the vicinity of the stationary source for the 3-year period specified in paragraph (b)(1) of this section. This data shall be presented chronologically and include the beryllium concentration and location of each individual sample taken by the network and the corresponding 30-day average beryllium concentrations.

(2) Within 60 days after receiving such report, the Administrator will notify the owner or operator in writing whether approval is granted or denied. Prior to denying approval to comply with the provisions of paragraph (b) of this section, the Administrator will consult with representatives of the statutory source for which the demonstration report was submitted.

(c) The burning of beryllium and/or beryllium-containing waste, except propellants, is prohibited except in incinerators, emissions from which must comply with the standard.

[38 FR 8826, Apr. 6, 1973, as amended at 65 FR 62151, Oct. 17, 2000]

Sec. 61.33 Stack sampling.

(a) Unless a waiver of emission testing is obtained under Sec. 61.13, each owner or operator required to comply with Sec. 61.32(a) shall test emissions from the source according to Method 104 of appendix B to this part. Method 103 of appendix B to this part is approved by the Administrator as an alternative method for sources subject to Sec. 61.32(a). The emission test shall be performed--

(1) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(2) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Administrator shall be notified at least 30 days prior to an emission test so that he may at his option observe the test.

(c) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-hour-period emissions will be based on that combination of factors which is likely to occur during the subject period and which result in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Administrator.

(d) All samples shall be analyzed and beryllium emissions shall be determined within 30 days after the source test. All determinations shall be reported to the Administrator by a registered letter dispatched before the close of the next business day following such determination.

(e) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46294, Nov. 7, 1985]

Sec. 61.34 Air sampling.

(a) Stationary sources subject to Sec. 61.32(b) shall locate air sampling sites in accordance with a plan approved by the Administrator. Such sites shall be located in such a manner as is calculated to detect maximum concentrations of beryllium in the ambient air.

(b) All monitoring sites shall be operated continuously except for a reasonable time allowance for instrument maintenance and calibration, for changing filters, or for replacement of equipment needing major repair.

(c) Filters shall be analyzed and concentrations calculated within 30 days after filters are collected. Records of concentrations at all sampling sites and other data needed to determine such concentrations shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

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(d) Concentrations measured at all sampling sites shall be reported to the Administrator every 30 days by a registered letter.

(e) The Administrator may at any time require changes in, or expansion of, the sampling network.

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[Revised as of July 1, 2001]
From the U.S. Government Printing Office via GPO Access
[CITE: 40CFR61]

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TITLE 40--PROTECTION OF ENVIRONMENT

CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

PART 61--NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS--Table of Content

Subpart E--National Emission Standard for Mercury

Sec. 61.50 Applicability.

The provisions of this **subpart** are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge.

[40 FR 48302, Oct. 14, 1975]

Sec. 61.51 Definitions.

Terms used in this **subpart** are defined in the act, in **subpart** A of this part, or in this section as follows:

(a) Mercury means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

(b) Mercury ore means a mineral mined specifically for its mercury content.

(c) Mercury ore processing facility means a facility processing mercury ore to obtain mercury.

(d) Condenser stack gases mean the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.

(e) Mercury chlor-alkali cell means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.

(f) Mercury chlor-alkali electrolyzer means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.

(g) Denuder means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.

(h) Hydrogen gas stream means a hydrogen stream formed in the chlor-alkali cell denuder.

(i) End box means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.

(j) End box ventilation system means a ventilation system which collects mercury emissions from the end-boxes, the mercury pump sumps, and their water collection systems.

(k) Cell room means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.

(l) Sludge means sludge produced by a treatment plant that processes municipal or industrial waste waters.

(m) Sludge dryer means a device used to reduce the moisture content

of sludge by heating to temperatures above 65 deg.C (ca. 150 deg.F) directly with combustion gases.

[38 FR 8826, Apr. 6, 1973, as amended at 40 FR 48302, Oct. 14, 1975]

Sec. 61.52 Emission standard.

(a) Emissions to the atmosphere from mercury ore processing facilities and mercury cell chlor-alkali plants shall not exceed 2.3 kg (5.1 lb) of mercury per 24-hour period.

(b) Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3.2 kg (7.1 lb) of mercury per 24-hour period.

[40 FR 48302, Oct. 14, 1975, as amended at 65 FR 62151, Oct. 17, 2000]

Sec. 61.53 Stack sampling.

(a) Mercury ore processing facility. (1) Unless a waiver of emission testing is obtained under Sec. 61.13, each owner or operator processing mercury ore shall test emissions from the source according to Method 101 of appendix B to this part. The emission test shall be performed--

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial start-up date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

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(3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(4) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(5) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(b) Mercury chlor-alkali plant--hydrogen and end-box ventilation gas streams. (1) Unless a waiver of emission testing is obtained under Sec. 61.13, each owner or operator employing mercury chlor-alkali cell(s) shall test emissions from hydrogen streams according to Method 102 and from end-box ventilation gas streams according to Method 101 of appendix B to this part. The emission test shall be performed--

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(2) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in a 24-hour period. No changes in the operation shall be made, which

would potentially increase emissions above that determined by the most recent source test, until the new emission has been estimated by calculation and the results reported to the Administrator.

(4) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(5) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

(c) Mercury chlor-alkali plants--cell room ventilation system. (1) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with paragraph (c)(2) of this section or demonstrate compliance with paragraph (c)(4) of this section and assume ventilation emissions of 1.3 kg/day (2.9 lb/day) of mercury.

(2) Unless a waiver of emission testing is obtained under Sec. 61.13, each owner or operator shall pass all cell room air in force gas streams through stacks suitable for testing and shall test emissions from the source according to Method 101 in appendix B to this part. The emission test shall be performed--

(i) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(ii) Within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(3) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(4) An owner or operator may carry out approved design, maintenance, and housekeeping practices. A list of approved practices is provided in appendix A of ``Review of National Emission Standards for Mercury,'' EPA-450/3-84-014a, December 1984. Copies are available from EPA's Central Docket Section, Docket item number A-84-41, III-B-1.

(d) Sludge incineration and drying plants. (1) Unless a waiver of emission

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testing is obtained under Sec. 61.13, each owner or operator of a source subject to the standard in Sec. 61.52(b) shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in paragraph (d) of this section or in Sec. 61.54.

(2) Method 101A in appendix B to this part shall be used to test emissions as follows:

(i) The test shall be performed within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(3) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(4) Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period. No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(5) All samples shall be analyzed and mercury emissions shall be determined within 30 days after the stack test. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(6) Records of emission test results and other data needed to determine total emissions shall be retained at the source and shall be made available, for inspection by the Administrator, for a minimum of 2 years.

[38 FR 8826, Apr. 6, 1973, as amended at 40 FR 48302, Oct. 14, 1975; 47 FR 24704, June 8, 1982; 50 FR 46294, Nov. 7, 1985; 52 FR 8726, Mar. 19, 1987; 65 FR 62151, Oct. 17, 2000]

Sec. 61.54 Sludge sampling.

(a) As an alternative means for demonstrating compliance with Sec. 61.52(b), an owner or operator may use Method 105 of appendix B and the procedures specified in this section.

(1) A sludge test shall be conducted within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date; or

(2) A sludge test shall be conducted within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(b) The Administrator shall be notified at least 30 days prior to a sludge sampling test, so that he may at his option observe the test.

(c) Sludge shall be sampled according to paragraph (c)(1) of this section, sludge charging rate for the plant shall be determined according to paragraph (c)(2) of this section, and the sludge analysis shall be performed according to paragraph (c)(3) of this section.

(1) The sludge shall be sampled according to Method 105--Determination of Mercury in Wastewater Treatment Plant Sewage Sludges. A total of three composite samples shall be obtained within an operating period of 24 hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.

(2) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of ^{plus-minus}5 percent over its operating range. Other methods of measuring sludge mass charging rates may be used if they have received prior approval by the Administrator.

(3) The sampling, handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 in appendix B of this part.

(d) The mercury emissions shall be determined by use of the following equation.

[GRAPHIC] [TIFF OMITTED] TC15NO91.047

where:

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E<INF>Hg</INF>=Mercury emissions, g/day.
M=Mercury concentration of sludge on a dry solids basis, <greek-m>g/g.
Q=Sludge changing rate, kg/day.
F<INF>sm</INF>=Weight fraction of solids in the collected sludge after mixing.
1000=Conversion factor, kg <greek-m>g/g\2\.

(e) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Administrator.

(f) All sludge samples shall be analyzed for mercury content within

30 days after the sludge sample is collected. Each determination shall be reported to the Administrator by a registered letter dispatched within 15 calendar days following the date such determination is completed.

(g) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges shall be retained at the source and made available, for inspection by the Administrator, for a minimum of 2 years.

[40 FR 48303, Oct. 14, 1975, as amended at 49 FR 35770, Sept. 12, 1984; 52 FR 8727, Mar. 19, 1987; 53 FR 36972, Sept. 23, 1988]

Sec. 61.55 Monitoring of emissions and operations.

(a) Wastewater treatment plant sludge incineration and drying plants. All the sources for which mercury emissions exceed 1.6 kg (3.5 lb) per 24-hour period, demonstrated either by stack sampling according to Sec. 61.53 or sludge sampling according to Sec. 61.54, shall monitor mercury emissions at intervals of at least once per year by use of Method 105 of appendix B or the procedures specified in Sec. 61.53 (d)(2) and (4). The results of monitoring shall be reported and retained according to Sec. 61.53(d) (5) and (6) or Sec. 61.54 (f) and (g).

(b) Mercury cell chlor-alkali plants--hydrogen and end-box ventilation gas streams. (1) The owner or operator of each mercury cell chlor-alkali plant shall, within 1 year of the date of publication of these amendments or within 1 year of startup for a plant with initial startup after the date of publication, perform a mercury emission test that demonstrates compliance with the emission limits in Sec. 61.52, on the hydrogen stream by Method 102 and on the end-box stream by Method 101 for the purpose of establishing limits for parameters to be monitored.

(2) During tests specified in paragraph (b)(1) of this section, the following control device parameters shall be monitored, except as provided in paragraph (c) of this section, and recorded manually or automatically at least once every 15 minutes:

(i) The exit gas temperature from uncontrolled streams;

(ii) The outlet temperature of the gas stream for the final (i.e., the farthest downstream) cooling system when no control devices other than coolers and demisters are used;

(iii) The outlet temperature of the gas stream from the final cooling system when the cooling system is followed by a molecular sieve or carbon adsorber;

(iv) Outlet concentration of available chlorine, pH, liquid flow rate, and inlet gas temperature of chlorinated brine scrubbers and hypochlorite scrubbers;

(v) The liquid flow rate and exit gas temperature for water scrubbers;

(vi) The inlet gas temperature of carbon adsorption systems; and

(vii) The temperature during the heating phase of the regeneration cycle for carbon adsorbers or molecular sieves.

(3) The recorded parameters in paragraphs (b)(2)(i) through (b)(2)(vi) of this section shall be averaged over the test period (a minimum of 6 hours) to provide an average number. The highest temperature reading that is measured in paragraph (b)(2)(vii) of this section is to be identified as the reference temperature for use in paragraph (b)(6)(ii) of this section.

(4)(i) Immediately following completion of the emission tests specified in paragraph (b)(1) of this section, the owner or operator of a mercury cell chlor-alkali plant shall monitor and record manually or automatically at least once per hour the same parameters specified in paragraphs (b)(2)(i) through (b)(2)(vi) of this section.

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(ii) Immediately following completion of the emission tests specified in paragraph (b)(1) of this section, the owner or operator shall monitor and record manually or automatically, during each heating phase of the regeneration cycle, the temperature specified in paragraph (b)(2)(vii) of this section.

(5) Monitoring devices used in accordance with paragraphs (b)(2) and (b)(4) of this section shall be certified by their manufacturer to be accurate to within 10 percent, and shall be operated, maintained, and calibrated according to the manufacturer's instructions. Records of the certifications and calibrations shall be retained at the chlor-alkali plant and made available for inspection by the Administrator as follows: Certification, for as long as the device is used for this purpose; calibration for a minimum of 2 years.

(6)(i) When the hourly value of a parameter monitored in accordance with paragraph (b)(4)(i) of this section exceeds, or in the case of liquid flow rate and available chlorine falls below the value of that same parameter determined in paragraph (b)(2) of this section for 24 consecutive hours, the Administrator is to be notified within the next 10 days.

(ii) When the maximum hourly value of the temperature measured in accordance with paragraph (b)(4)(ii) of this section is below the reference temperature recorded according to paragraph (b)(3) of this section for three consecutive regeneration cycles, the Administrator is to be notified within the next 10 days.

(7) Semiannual reports shall be submitted to the Administrator indicating the time and date on which the hourly value of each parameter monitored according to paragraphs (b)(4)(i) and (b)(4)(ii) of this section fell outside the value of that same parameter determined under paragraph (b)(3) of this section; and corrective action taken, and the time and date of the corrective action. Parameter excursions will be considered unacceptable operation and maintenance of the emission control system. In addition, while compliance with the emission limits is determined primarily by conducting a performance test according to the procedures in Sec. 61.53(b), reports of parameter excursions may be used as evidence in judging the duration of a violation that is determined by a performance test.

(8) Semiannual reports required in paragraph (b)(7) of this section shall be submitted to the Administrator on September 15 and March 15 of each year. The first semiannual report is to be submitted following the first full 6 month reporting period. The semiannual report due on September 15 (March 15) shall include all excursions monitored through August 31 (February 28) of the same calendar year.

(c) As an alternative to the monitoring, recordkeeping, and reporting requirements in paragraphs (b)(2) through (8) of this section, an owner or operator may develop and submit for the Administrator's review and approval a plant-specific monitoring plan. To be approved, such a plan must ensure not only compliance with the emission limits of Sec. 61.52(a) but also proper operation and maintenance of emissions control systems. Any site-specific monitoring plan submitted must, at a minimum, include the following:

(1) Identification of the critical parameter or parameters for the hydrogen stream and for the end-box ventilation stream that are to be monitored and an explanation of why the critical parameter(s) selected is the best indicator of proper control system performance and of mercury emission rates.

(2) Identification of the maximum or minimum value of each parameter (e.g., degrees temperature, concentration of mercury) that is not to be exceeded. The level(s) is to be directly correlated to the results of a performance test, conducted no more than 180 days prior to submittal of the plan, when the facility was in compliance with the emission limits of Sec. 61.52(a).

(3) Designation of the frequency for recording the parameter measurements, with justification if the frequency is less than hourly. A longer recording frequency must be justified on the basis of the amount

of time that could elapse during periods of process or control system upsets before the emission limits would be exceeded, and consideration is to be given to the time

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that would be necessary to repair the failure.

(4) Designation of the immediate actions to be taken in the event of an excursion beyond the value of the parameter established in paragraph (c)(2) of this section.

(5) Provisions for reporting, semiannually, parameter excursions and the corrective actions taken, and provisions for reporting within 10 days any significant excursion.

(6) Identification of the accuracy of the monitoring device(s) or of the readings obtained.

(7) Recordkeeping requirements for certifications and calibrations.

(d) Mercury cell chlor-alkali plants--cell room ventilation system. (1) Stationary sources determining cell room emissions in accordance with Sec. 61.53(c)(4) shall maintain daily records of all leaks or spills of mercury. The records shall indicate the amount, location, time, and date the leaks or spills occurred, identify the cause of the leak or spill, state the immediate steps taken to minimize mercury emissions and steps taken to prevent future occurrences, and provide the time and date on which corrective steps were taken.

(2) The results of monitoring shall be recorded, retained at the source, and made available for inspection by the Administrator for a minimum of 2 years.

[52 FR 8727, Mar. 19, 1987, as amended at 65 FR 62151, Oct. 17, 2000]

Sec. 61.56 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: Sections 61.53(c)(4) and 61.55(d). The authorities not delegated to States listed are in addition to the authorities in the General Provisions, **subpart** A of 40 CFR part 61, that will not be delegated to States (Secs. 61.04(b), 61.12(d)(1), and 61.13(h)(1)(ii)).

[52 FR 8728, Mar. 19, 1987]

Subpart E-Incineration

503.40 Applicability.

(a) This subpart applies to a person who fires sewage sludge in a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator.

(b) This subpart applies to the exit gas from a sewage sludge incinerator stack.

(c) The management practice in 503.45(a), the frequency of monitoring requirement for total hydrocarbon concentration in 503.46(b) and the recordkeeping requirements for total hydrocarbon concentration in 503.47(c) and (n) do not apply if the following conditions are met:

(1) The exit gas from a sewage sludge incinerator stack is monitored continuously for carbon monoxide.

(2) The monthly average concentration of carbon monoxide in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.

(3) The person who fires sewage sludge in a sewage sludge incinerator retains the following information for five years:

(i) The carbon monoxide concentrations in the exit gas; and

(ii) A calibration and maintenance log for the instrument used to measure the carbon monoxide concentration.

(4) Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve a population of 10,000 people or greater submit the monthly average carbon monoxide concentrations in the exit gas to the permitting authority on February 19 of each year.

[58 FR 9387, Feb. 19, 1993, as amended at 59 FR 9099, Feb. 25, 1994]

503.41 Special definitions.

(a) Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

(b) Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

(c) Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant

in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

(d) Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

(e) Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

(f) Hourly average is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

(g) Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

(h) Monthly average is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

(i) Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

(j) Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

(k) Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

(l) Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR 51.100 (ii).

(m) Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

(n) Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

(o) Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

503.42 General requirements.

No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements in this subpart.

503.43 Pollutant limits.

(a) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Beryllium in subpart C of 40 CFR part 61.

(b) Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Mercury in subpart E of 40 CFR part 61.

(c) Pollutant limit-lead.

(1) The daily concentration of lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using Equation (4).

$$C = \frac{0.1 \times NAAQS \times 86,400}{DF \times (1-CE) \times SF} \qquad \text{Eq. (4)}$$

Where:

C=Daily concentration of lead in sewage sludge in milligrams per kilogram of total solids (dry weight basis).

NAAQS=National Ambient Air Quality Standard for lead in micrograms per cubic meter.

DF=Dispersion factor in micrograms per cubic meter per gram per second.

CE=Sewage sludge incinerator control efficiency for lead in hundredths.

SF=Sewage sludge feed rate in metric tons per day (dry weight basis).

(2)(i) When the sewage sludge stack height is 65 meters or less, the actual sewage sludge incinerator stack height shall be used in an air dispersion model specified by the permitting authority to determine the dispersion factor (DF) in equation (4).

(ii) When the sewage sludge incinerator stack height exceeds 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in an air dispersion model specified by the permitting authority to determine the dispersion factor (DF) in equation (4).

(3) The control efficiency (CE) in equation (5) shall be determined from a performance test of the sewage sludge incinerator, as specified by the permitting authority.

(d) Pollutant limit-arsenic, cadmium, chromium, and nickel.

(1) The daily concentration for arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator each shall not exceed the concentration calculated using equation (5).

$$C = \frac{RSC \times 86{,}400}{DF \times (1-CE) \times SF} \quad \text{Eq. (5)}$$

Where:

C=Daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge in milligrams per kilogram of total solids (dry weight basis).

CE=Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF=Dispersion factor in micrograms per cubic meter per gram per second.

RSC=Risk specific concentration in micrograms per cubic meter.

S

F=Sewage sludge feed rate in met,ric tons per day (dry weight basis).

(2) The risk specific concentrations for arsenic, cadmium, and nickel used in equation (6) shall be obtained from Table 1 of 503 .43.

Table 1 of 503.43.-Risk Specific Concentration Arsenic, Cadmium, and Nickel

Pollutant	Risk specific concentration (micrograms per cubic meter)
Arsenic	0.023
Cadmium	0.057
Nickel	2.0

(3) The risk specific concentration for chromium used in equation (5) shall be obtained from Table 2 of 503.43 or shall be calculated using equation (6), as specified by the permitting authority.

Table 2 of 503.43.-Risk Specific Concentration-Chromium

Type of incinerator	Risk specific concentration (micrograms per cubic meter)
Fluidized bed with wet scrubber	0.65
Fluidized bed with wet scrubber and wet electrostatic precipitator.	0.23
Other types with wet scrubber	0.064
Other types with wet scrubber and wet electrostatic precipitator.	0.016

$$RSC = \frac{0.0085}{r} \quad \text{Eq. (6)}$$

Where:
RSC=risk specific concentration for chromium in micrograms per cubic meter used in equation (5).
r=decimal fraction of the hexavalent chromium concentration in the total chromium concentration measured in the exit gas from the sewage sludge incinerator stack in hundredths.

(4)(i) When the sewage sludge incinerator stack height is equal to or less than 65 meters, the actual sewage sludge incinerator stack height shall be used in an air dispersion model, as specified by the permitting authority, to determine the dispersion factor (DF) in equation (5).

(ii) When the sewage sludge incinerator stack height is greater than 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in an air dispersion model, as specified by the permitting authority, to determine the dispersion factor (DF) in equation (5).

(5) The control efficiency (CE) in equation (5) shall be determined from a performance test of the sewage sludge incinerator, as specified by the permitting authority.

503.44 Operational standard-total hydrocarbons.

(a) The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected for zero percent moisture by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (7).

$$\text{Correction factor} = \frac{1}{\quad} \quad \text{Eq. (7)}$$

(percent moisture) = (1-X)

Where:
X=decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

(b) The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected to seven percent oxygen by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (8).

$$\text{Correction factor (oxygen)} = \frac{14}{(21-Y)} \quad \text{Eq. (8)}$$

Where:
Y=Percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

(c) The monthly average concentration for total hydrocarbons in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture using the correction factor from equation (7) and to seven percent oxygen using the correction factor from equation (8), shall not exceed 100 parts per million on a volumetric basis when measured using the instrument required by 503.45(a).

503.45 Management practices.

(a)(1) An instrument that measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas continuously shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator, as specified by the permitting authority.

(2) The total hydrocarbons instrument shall employ a flame ionization detector; shall have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times; and shall be calibrated at least once every 24-hour operating period using propane.

(b) An instrument that measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas continuously shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator, as specified by the permitting authority.

(c) An instrument that measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas continuously shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator, as specified by the permitting authority.

(d) An instrument that measures and records combustion temperatures continuously shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator, as specified by the permitting authority.

(e) The maximum combustion temperature for a sewage sludge incinerator shall be specified by the permitting authority and shall be based on information obtained during the performance test of the sewage sludge incinerator to determine pollutant control efficiencies.

(f) The values for the operating parameters for the sewage sludge incinerator air pollution control device shall be specified by the permitting authority and shall be based on information obtained during the performance test of the sewage sludge incinerator to determine pollutant control efficiencies.

(g) Sewage sludge shall not be fired in a sewage sludge incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

503.46 Frequency of monitoring.

(a) Sewage sludge.

(1) The frequency of monitoring for beryllium and mercury shall be specified by the permitting authority.

(2) The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be the frequency in Table 1 of 503.46.

Table 1 of 503.46.-Frequency of Monitoring-Incineration

Amount of sewage sludge {1} (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year).
Equal to or greater than 15,000	Once per month (12 times per year).

{1} Amount of sewage sludge fired in a sewage sludge incinerator (dry weight basis).

(3) After the sewage sludge has been monitored for two years at the frequency in Table 1 of 503.46, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel, but in no case shall the frequency of monitoring be less than once per year when sewage sludge is fired in a sewage sludge incinerator.

(b) Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures.

The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.

(c) Air pollution control device operating parameters.

The frequency of monitoring for the sewage sludge incinerator air pollution control device operating parameters shall be specified by the permitting authority.

(Approved by the Office of Management and Budget under control number 2040-0157)

503.47 Recordkeeping.

(a) The person who fires sewage sludge in a sewage sludge incinerator shall develop the information in 503.47(b) through 503.47(n) and shall retain that information for five years.

(b) The concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator.

(c) The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.

(d) Information that indicates the requirements in the National Emission Standard for beryllium in subpart C of 40 CFR part 61 are met.

(e) Information that indicates the requirements in the National Emission Standard for mercury in subpart E of 40 CFR part 61 are met.

(f) The combustion temperatures, including the maximum combustion temperature, for the sewage sludge incinerator.

(g) Values for the air pollution control device operating parameters.

(h) The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.

(i) The sewage sludge feed rate.

(j) The stack height for the sewage sludge incinerator.

(k) The dispersion factor for the site where the sewage sludge incinerator is located.

(l) The control efficiency for lead, arsenic, cadmium, chromium, and nickel for each sewage sludge incinerator.

(m) The risk specific concentration for chromium calculated using equation (6), if applicable.

(n) A calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

(Approved by the Office of Management and Budget under control number 2040-0157)

503.48 Reporting.

Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve a population of 10,000 people or greater shall submit the information in 503.47(b) through 503.47(h) to the permitting authority on February 19 of each year.

(Approved by the Office of Management and Budget under control number 2040-0157)

APPENDIX E
Control Equipment

Air Pollution Control Equipment (applicable if -X- checked).

- ☐ None
- ☒ Scrubber - Venturi
- ☒ Scrubber - Impingement Tray
- ☒ Electrostatic Precipitator (ESP)
- ☐ Cyclone ☐ Multicyclone
- ☐ Selective Non-catalytic Reduction (SNCR)
  - ☐ Urea ☐ Ammonia
- ☐ Selective Catalytic Reduction (SCR)
- ☐ Low NOx Burner
- ☐ Particulate Trap
- ☐ Fabric Filter
- ☐ Other:

APPENDIX E
Control Equipment

Control Equipment Malfunction

1. Equipment or methods which control "air pollutant" "emissions" from a "stationary source" and which are necessary to the operation of such "stationary source" in compliance with applicable "emission standards" and regulations shall be maintained in operation at all times that the "stationary source" is in operation or emitting "air pollutants". This includes instruments required by permit, order, or regulation which measure those source operating parameters which affect air pollutant emissions, air pollution control equipment, or other instruments which measure meteorological data required by permit, order or regulation.

2. No "person" shall deliberately shut down any such control equipment, method or other instruments specified in subsection 22a-174-7(a) while the "source" is in operation except for such necessary maintenance as cannot be accomplished when the "stationary source" itself is not in operation and is not emitting "air pollutants".

3. In the event of breakdown, failure, or deliberate shut down of any control equipment, method, or other instrument specified in subsection 22a-174-7(a) during which time the "stationary source" will be in operation, all reasonable measures shall be taken to assure resumption of the control equipment as soon as possible. Due diligence shall be exercised to minimize "emissions" while the control equipment or method is inoperative. In the event such shutdown of control equipment or methods is expected or may reasonably be expected to continue for longer than 72 hours, and if the "source" is to be operated at any time during that period, the "Commissioner" shall be notified promptly except that for a resource recovery facility such time period shall be 24 hours. Such notice shall include, but is not limited to, the following:

   a. Identification of the specific equipment or instrument taken out, or to be taken out, of service as well as its location, and, where applicable, registration or permit number;

   b. The expected length of time that the "air pollution" control equipment or instrument will be out of service;

   c. The nature and quantity of "emissions" of "air pollutants" likely to be emitted during the shutdown period;

   d. Measures such as the use of offshift labor and equipment that will be taken to minimize the length of the shutdown period;

   e. The reasons that it would be impossible or impractical to shut down the "stationary source" operation during the maintenance period.

4. The "Commissioner" may attach conditions to the operation of the "source" during the period of shutdown or breakdown.

As filed with the Securities and Exchange Commission on May 24, 2002

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(B) OR (G) OF THE SECURITIES EXCHANGE ACT OF 1934

or

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

for the fiscal year ended December 31, 2001

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

for the transition period from to

Commission file no:

VIVENDI ENVIRONNEMENT

(Exact name of Registrant as specified in its charter)

N/A	36-38 avenue Kléber, 75116, Paris, France	Republic of France
(Translation of Registrant's name into English)	(Address of principal executive offices)	(Jurisdiction of incorporation or organization)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Ordinary shares, nominal value €13.50 per share represented by American Depositary Shares (as evidenced by American Depositary Receipts), each American Depositary Share representing one ordinary share*	The New York Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

346,175,772 ordinary shares, nominal value €13.50 per share

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days:

Yes ☒ No ☐

Indicate by check mark which financial statement item the registrant has elected to follow:

Item 17 ☐ Item 18 ☒

*Listed, not for trading or quotation purposes, but only in connection with the registration of the American Depositary Shares pursuant to the requirements of the Securities and Exchange Commission.

FORWARD-LOOKING STATEMENTS

We make some forward-looking statements in this document. When we use the words "aim(s)," "expect(s)," "feel(s)," "will," "may," "believe(s)," "anticipate(s)" and similar expressions in this document, we are intending to identify those statements as forward-looking. Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those projected. You should not place undue reliance on these forward-looking statements, which speak only as of the date of this document. In particular, from time to time in this document we state our expectations in terms of revenue to be generated under new contracts recently won or awarded or from new investments made and new assets or operations acquired, though we may have not yet commenced operations under these new contracts nor operating these new assets and operations at the time we make these statements. These revenue estimates are based on our management's current assumptions regarding future sales volumes and prices, which are subject to a number of risks and uncertainties that may cause actual sales volumes and prices to differ materially from those projected. As a result, actual revenue recorded under these new contracts or from these new investments, assets and operations may differ materially from those set forth in this document. Other than in connection with applicable securities laws, we undertake no obligation to publish revised forward-looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events. We urge you to review and consider the various disclosures we make concerning the factors that may affect our business carefully, including the disclosures made in "Item 3. Key Information — Risk Factors," "Item 5. Operating and Financial Review and Prospects," and "Item 11. Quantitative and Qualitative Disclosures About Market Risk."

Unless otherwise indicated, information and statistics presented herein regarding market trends and our market share relative to our competitors are based on our own research and various publicly available sources.

EXPLANATORY NOTE

Approximately 63% of our shares are currently owned by Vivendi Universal, a société anonyme incorporated under the laws of France. See "Item 7. Major Shareholders and Related Party Transactions — Major Shareholders." From 1998 until December 2001, Vivendi Universal was known as "Vivendi"; before 1998 it was known as "Compagnie Générale des Eaux." In this document, we generally refer to our parent company as "Vivendi Universal" (rather than as "Vivendi" or "Compagnie Générale des Eaux") even when discussing events that took place when that company was operating under a different name. In addition, except as otherwise indicated or as the context otherwise requires, we use the term "Vivendi Universal" to refer to our parent company exclusive of its subsidiaries.

Unless otherwise indicated, all references made in this document to our competitive positions are in terms of revenue generated.

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PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not Applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not Applicable.

ITEM 3. KEY INFORMATION

SELECTED FINANCIAL DATA

You should read the following selected financial data together with the section entitled "Operating and Financial Review and Prospects" and our financial statements. Our financial statements have been prepared in accordance with French GAAP, which differs in certain significant respects from U.S. GAAP. Note 27 to our financial statements describes the principal differences between French GAAP and U.S. GAAP as they relate to us. See "Item 5. Operating and Financial Review and Prospects" for a discussion of accounting changes, business combinations and dispositions of business operations that affect the comparability of the information provided below.

For your convenience, we have converted certain euro amounts into U.S. dollars, using the December 31, 2001 rate of $1.00 = €1.136. This does not mean that we actually converted such amounts into U.S. dollars. For periods presented prior to January 1, 1999, the selected financial data presented below have been prepared in French Francs and translated into euro using the official fixed exchange rate of €1 = FF 6.55957, applicable since January 1, 1999 (see Note 2 to our consolidated financial statements).

We changed our accounts in 2001 to present our income statement by function, as opposed to our previous method of presenting our income statement by category of expense. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes in Income Statement Presentation" for a description of the principal changes in the presentation of our consolidated financial statements. Because 2001 is a year of transition to our new accounting presentation, and because operating income under the new presentation is not available broken down by business segment for the years 2000 and 1999, we have presented our operating income under both the old presentation method and the new presentation method. To distinguish between the old presentation and the new presentation, for purposes of this year's discussion of our results of operations we have called the new version of operating income "operating income (new definition)," retaining the term "operating income" for the old definition. We have also restated our financial statements for 1999 and 2000 to reflect the new presentation method.

Because we have not restated our financial statements for periods ending prior to December 31, 1999, the following tables present our selected financial data based on the new accounting presentation for the periods ended December 31, 1999, 2000 and 2001, and our selected financial data based on the old accounting presentation for the periods ended December 31, 1997, 1998, 1999 and 2000.

Selected Financial Data – New Accounting Presentation

(millions, except per share amounts)	At and for the year ended December 31, U.S.$ 2001	Euro 2001	Euro 2000	Euro 1999
INCOME STATEMENT DATA:				
Amounts in accordance with French GAAP				
Revenue	25,646.4	29,126.7	26,262.5	20,930.0
Revenue outside France	14,752.7	16,754.6	15,413.9	11,026.9
EBIT(1)	1,772.6	2,013.1	1,650.0	1,375.9
Goodwill amortization	(2,562.4)	(2,910.1)	(306.3)	(366.8)
Restructuring costs	(43.5)	(49.4)	(54.4)	(47.2)
Operating income (loss) (new definition)	(833.3)	(946.4)	1,289.3	961.9
Minority interest	(115.5)	(131.2)	(161.4)	(93.4)
Net income (loss)	(1,982.2)	(2,251.2)	614.8	(42.3)
Basic earnings per share	(5.80)	(6.55)	2.24	(0.19)
Dividends per share	0.48	0.55	0.55	–
Number of shares (adjusted to reflect changes in capital)	346,175,772	346,175,772	346,174,955	218,228,507
Amounts in accordance with U.S. GAAP				
Net Sales	20,639.9	23,440.8	22,461.4	17,880.1
Operating income (loss) (new definition)	909.7	1,033.2	903.3	558.0
Net income (loss)	158.8	180.3	433.4	(348.3)
Basic earnings per share	0.46	0.52	1.58	(1.60)
Diluted earnings per share	0.46	0.52	1.57	(1.60)
BALANCE SHEET DATA (AT PERIOD END):				
Amounts in accordance with French GAAP				
Total shareholders' equity	5,054.2	5,740.0	6,208.3	678.1
Minority interest	2,228.7	2,531.1	2,031.1	1,438.1
Total assets	39,103.0	44,409.3	39,823.0	41,407.7
Total long term assets	24,126.7	27,400.7	25,362.2	22,703.3
Net financial debt(2)	(12,576.4)	(14,283.0)	(13,183.3)	(17,408.3)
Amounts in accordance with U.S. GAAP				
Shareholders' equity	5,970.5	6,780.7	6,569.2	1,767.5
CASH FLOW DATA:				
Net cash provided by operating activities	2,546.4	2,892.0	1,638.0	1,580.8
Net cash used in investing activities	(2,987.1)	(3,392.4)	(1,536.7)	(14,831.7)
Net cash provided by (used in) financing activities	1,090.5	1,238.5	71.6	14,003.8
Capital expenditures	(2,534.6)	(2,878.5)	(2,586.2)	(1,902.6)

(1) EBIT is defined as operating income (loss) (new definition) before amortization of goodwill and restructuring charges. EBIT is not a measurement of operating performance calculated in accordance with accounting principles generally accepted in France or the United States, and should not be considered a substitute for operating income, net income, cash flows from operating activities or other statement of operations or cash flow statement data prepared in accordance with accounting principles generally accepted in France or the United States, or as a measure of profitability or liquidity. Because of its recent adoption, EBIT is not indicative of our historical operating results, nor is it meant to be predictive of potential results. Because all companies do not calculate EBIT identically, the presentation of EBIT contained in this document may not be comparable to similarly named measures of other companies.

(2) Net financial debt is defined as the sum of long-term debt, bank overdrafts and other short-term borrowings after deduction of short-term loans, cash, cash equivalents and marketable securities and long-term loans. Long-term loans are included under the caption "Portfolio investments held as financial assets." Long-term loans amounted to €349.5 million in 2001, €284.6 million in 2000 and €261.2 million in 1999.

Selected Financial Data – Prior Accounting Presentation

(millions, except per share amounts)	At and for the year ended December 31, Euro 2000	1999	1998	1997
INCOME STATEMENT DATA:				
Amounts in accordance with French GAAP				
Revenue	26,393.7	21,039.2	15,283.7	13,124.6
Revenue outside France	15,351.9	11,012.5	5,963.8	4,197.1
Operating income	1,909.6	1,476.1	917.2	672.8
Exceptional items, net(1)	455.0	(180.8)	(155.0)	(146.9)
Goodwill amortization	(306.3)	(366.8)	(137.0)	(177.7)
Minority interest	(161.4)	(93.4)	(25.6)	(13.7)
Net income	614.8	(42.3)	162.0	(54.9)
Basic earnings per share	2.24	(0.19)	0.74	(0.25)
Dividends per share	0.55	–	–	–
Number of shares (adjusted to reflect changes in capital)	346,174,955	218,228,507	218,228,507	–
Amounts in accordance with U.S. GAAP				
Net Sales	22,461.4	17,880.1	–	–
Operating Income	903.3	558.0	–	–
Net income	433.4	(348.3)	–	–
Basic EPS	1.58	(1.60)	–	–
Diluted EPS	1.57	(1.60)	–	–
BALANCE SHEET DATA (at period end):				
Amounts in accordance with French GAAP				
Total shareholders' equity	6,208.3	678.1	3,345.6	3,070.9
Minority interest	2,031.1	1,438.1	617.3	146.4
Total assets	39,823.0	41,407.7	20,483.4	15,619.4
Total long term assets	25,362.2	22,703.3	11,490.9	7,889.1
Net financial debt(2)	(13,183.3)	(17,408.3)	(4,404.9)	(2,481.2)
Amounts in accordance with U.S. GAAP				
Shareholders' equity	6,569.2	1,767.5	–	–
CASH FLOW DATA:				
Net cash provided by operating activities	1,638.0	1,580.8	1,389.9	–
Net cash used in investing activities	(1,536.7)	(14,831.7)	(763.2)	–
Net cash provided by (used in) financing activities	71.6	14,003.8	(499.7)	–
Capital expenditure	(2,586.2)	(1,902.6)	(1,547.3)	–

(1) The term "exceptional items" is defined differently under French GAAP and U.S. GAAP. In the income statement under U.S. GAAP, items classified as exceptional for French GAAP purposes under the prior accounting presentation have been recategorized as necessary to comply with U.S. GAAP. With the exception of gains and losses on sales of shares of affiliated companies, which are recorded in "other income," exceptional items relating to our operations have been primarily included in the determination of operating income for U.S. GAAP purposes.

(2) Net financial debt is defined as the sum of long-term debt, bank overdrafts and other short-term borrowings after deduction of short-term loans, cash, cash equivalents and marketable securities and long-term loans. Long-term loans amounted to €279.5 million in 2000, €258.3 million in 1999 and €131.9 million in 1998.

The number of shares outstanding at the end of 1997 and 1998 has been determined giving effect to the transactions completed to form our company as if those transactions had occurred on January 1, 1997. See "Item 7. Major Shareholders and Related Party Transactions–Related Party Transactions–Formation" for a description of those transactions.

Dividends

Under French law and our articles of association (*statuts*), our statutory net income in each fiscal year, as increased or reduced, as the case may be, by any profits or losses carried forward from prior years, less any contributions to legal reserves, is available for distribution to our shareholders as dividends, subject to other applicable requirements of French law and our *statuts*.

At our general shareholders' meeting held on April 25, 2002 our shareholders approved a dividend payment of €0.55 per share in respect of our 2001 fiscal year to persons who held our shares on January 1, 2002, which was paid on May 6, 2002. On May 10, 2001, we paid a dividend of €0.55 per share in respect of the 2000 fiscal year to persons who held our shares on April 27, 2001. We did not pay dividends as a stand-alone company in respect of fiscal years before 2000. Dividends paid to holders of ADSs will generally be subject to French withholding tax at a rate of 25% which, subject to certain procedures and exceptions, may be reduced to 15% for holders who are residents of the United States. Certain holders of ADSs who are residents of the United States may be entitled to receive a subsequent payment representing the French *avoir fiscal*, or tax credit, in an amount generally equal to 15% or 50% depending on the beneficiary of any dividends paid by us, less applicable French withholding tax. See "Item 10. Additional Information–Taxation" for a summary of the material U.S. federal and French tax consequences to holders of ADSs. Holders of ADSs should consult their own tax advisors with respect to the tax consequences of an investment in the ADSs. Dividends paid to holders of ADSs will be subject to a charge by the depositary for any expenses incurred by the depositary of the ADSs in the conversion of euro to dollars.

Exchange Rate Information

Under the provisions of the Treaty on European Union negotiated at Maastricht in 1991 and signed by the then 11 member states of the European Union in early 1992, a European Monetary Union, known as EMU, was implemented on January 1, 1999 and a single European currency, known as the euro, was introduced. As of December 31, 2001, the following 12 member states had adopted the euro as their national currency: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal and Spain. The legal rate of conversion between the French franc and the euro was fixed on December 31, 1998 at €1.00 = FF 6.55957 and we have translated French francs into euro at that rate.

Share capital in our company is represented by ordinary shares with a nominal value of €13.50 per share (generally referred to as "our shares"). Our shares are denominated in euro. Because we intend to pay cash dividends denominated in euro, exchange rate fluctuations will affect the U.S. dollar amounts that shareholders will receive on conversion of dividends from euro to dollars.

The following table shows the French franc/U.S. dollar exchange rate for 1997 and 1998 based on the noon buying rate expressed in French francs per $1.00, and the euro/U.S. dollar exchange rate for 1999 through 2001 based on the noon buying rate expressed in U.S. dollars per euro. The information concerning the U.S. dollar exchange rate is based on the noon buying rate in New York City for cable transfers in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York (the "Noon Buying Rate"). We provide the exchange rates below solely for your convenience. We do not represent that French francs or euro were, could have been, or could be, converted into U.S. dollars at these rates or at any other rate. The Federal Reserve Bank of New York has ceased publishing the Noon Buying Rates for French francs and other constituent currencies of the euro. For information regarding the effect of currency fluctuations on our results of operations, see "Item 5. Operating and Financial Review and Prospects."

Year	Period End	Average rate*	High	Low
U.S. dollar/Euro				
April 2002	0.90	0.89	0.90	0.88
March 2002	0.88	0.88	0.89	0.86
February 2002	0.87	0.87	0.88	0.86
January 2002	0.86	0.88	0.90	0.86
2001	0.89	0.89	0.95	0.84
December 2001	0.89	0.89	0.90	0.88
November 2001	0.90	0.89	0.90	0.88
2000	0.93	0.92	1.04	0.83
1999	1.00	1.06	1.18	1.00
U.S. dollar/French franc				
1998	5.62	5.90	6.17	5.41
1997	5.99	5.84	6.35	5.21

* For yearly figures, the average of the noon buying rates for French francs or euro, as the case may be, on the last business day of each month during the relevant period.

Solely for the convenience of the reader, this annual report contains translations of certain euro amounts into U.S. dollars. These translations should not be construed as representations that the converted amounts actually represent such U.S. dollar amounts or could have been or will be converted into U.S. dollars at the rate indicated or at all. The translations from euros to U.S. dollars in this annual report are based on €1.136 per U.S. dollar, the Noon Buying Rate in New York City fc. cable transfers in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York on December 31, 2001. On May 14, 2002, the Noon Buying Rate was U.S.$0.90 per euro.

RISK FACTORS

You should carefully consider the risk factors described below in addition to the other information presented in this document.

Risks Relating to Our Operations

We may suffer reduced profits or losses as a result of intense competition

Our business is highly competitive and requires substantial human and capital resources. Large international competitors and local niche companies serve each of the markets in which we compete. From time to time, our competitors may reduce their prices in an effort to expand market share or win a competitively bid contract. Competitors may also introduce new technology or services or improve the quality of their service. We may lose business if we are unable to match the prices, technologies or service quality offered by our competitors.

We perform a substantial portion of our business under contracts with governmental authorities and industrial and commercial clients. These contracts are often awarded and renewed through periodic competitive bidding. We may not be the successful bidder in the competition to obtain or renew these contracts. Our inability to replace a significant number of contracts lost through the competitive bidding process with comparable contracts or other revenue sources within a reasonable time could be harmful to our business and financial performance. Furthermore, we must commit substantial resources before we are assured of winning or renewing a contract. We may not win or successfully renew a contract despite incurring substantial expenses.

Our business operations in some countries may be subject to additional risks

While our operations are concentrated mainly in Europe, we conduct business in markets around the world. Sales generated in countries outside of Europe and North America represented approximately 5% of our total revenues in 2001. The risks associated with conducting business in some countries outside of western Europe, the United States and Canada can include slower payment of invoices, nationalization, social, political and economic instability, increased currency exchange risk and currency repatriation restrictions, among other risks. We may not

be able to insure or hedge against these risks. Furthermore, financing in countries with less than investment grade sovereign credit ratings may not be available. As a result, it may be difficult to create profit-making operations in developing markets.

Changes in energy prices and taxes may reduce our profits

Fuel is a significant operating expense for our transportation and waste management businesses. Fuel prices are subject to sudden increases as a result of variations in supply and demand. Although most of our contracts contain tariff escalation provisions that are intended to compensate us for increased costs incurred as a result of increased fuel prices, there may be developments, including delays between fuel price increases and the time we are allowed to raise our prices to cover the additional costs, that prevent those provisions from entitling us to full compensation. A sustained increase in energy prices could hurt our business to the extent we are not able to increase our prices sufficiently to cover the additional costs. Furthermore, governmental authorities from time to time impose increases in fuel taxes. Increases in fuel prices or taxes could raise our costs and reduce our profitability.

Governmental authorities could terminate or modify some of our contracts

Contracts with governmental authorities make up a significant percentage of our revenue. We are subject to various laws that apply to companies contracting with governmental authorities that differ from laws governing private contracts. In civil law countries such as France, for instance, government contracts often allow the governmental entity to modify or terminate a contract unilaterally in certain circumstances. Although we are generally entitled to full indemnification in the event of a unilateral modification or termination of a contract by a governmental authority, such modifications or terminations could reduce our revenue and profits if full indemnification is not available.

We may incur environmental liability in connection with our past, present and future operations

Each of our businesses is subject to extensive and increasingly stringent environmental laws and regulations. These laws and regulations govern, among other things, the quality of water intended for human consumption, the collection, treatment and discharge of waste water, the operation of landfills, the collection and disposal of hazardous waste and the operation of municipal waste incineration and co-generation plants. In some circumstances, we could be required to pay fines or damages under these environmental laws and regulations even if:

- we exercise due care in conducting our operations;
- we comply with all applicable laws and regulations; and
- the quantity of pollutant at issue is very small.

In addition, courts or regulatory authorities may require us to undertake investigatory and/or remedial activities, curtail operations or close facilities temporarily or permanently in connection with applicable environmental laws and regulations. We could also become subject to claims for personal injury or property damage. Being required to take those actions, or to pay environmental damages, could hurt our business substantially or affect our ability to obtain new business.

Our compliance with environmental laws is costly and may become more so in the future

We have made and will continue to make capital and other expenditures to comply with applicable environmental laws. For instance, governmental authorities may require us from time to time to incur expenditures for pollution control devices, or to upgrade, remove or retrofit equipment used in our operations. Each of our operations, moreover, may become subject to stricter laws, and correspondingly greater compliance expenditures, in the future. If we are unable to recover these expenditures through higher prices, this could adversely affect our operations and profitability.

We may not be able to retain or obtain required environmental licenses, permits and approvals

We need to maintain, renew or obtain a variety of permits and approvals from regulatory authorities to conduct each of our businesses. The process for renewing or obtaining these permits and approvals is often lengthy, complex and unpredictable. We may invest substantial resources in a project only to have a regulatory authority deny us a permit or approval necessary to complete or operate it. Moreover, a regulatory authority may grant a necessary permit or approval only after substantial delays and/or additional expenditures. The occurrence of any of these events could adversely affect our operations.

We may be required to sell our interest in FCC or to finance an investment in FCC.

We have an indirect 27.9% stake in Fomento de Construcciones y Contratas (FCC), a leading provider of environmental management services in Spain and Latin America listed on the Madrid Stock Exchange. Our interest consists of a 49% stake in a holding company that owns 57% of FCC's outstanding shares. We have also created a number of joint ventures with FCC that operate a significant part of our environmental management business in Spain and Latin America. With our acquisition of our participation in FCC from Vivendi Universal, we became a party to an agreement with the controlling shareholder of FCC, Ms. Esther Koplowitz, who is a member of our supervisory board and owner of the remaining 51% of the holding company, pursuant to which Ms. Koplowitz has the right to buy our interest in FCC's holding company in the event that Vivendi Universal ceases to hold a majority interest in our company (the "call option"). The exercise price of the call option would be equal to the purchase price we paid to Vivendi Universal or, if lower, the market value of FCC's shares. If the call option is exercised at a time when the market price of those shares is low, we would be required to sell our interest in FCC upon disadvantageous terms. In addition, a sale of our interest in FCC could impede our efforts to expand our activities in Spain.

The agreement also gives Ms. Koplowitz an option (the "put option"), exercisable at any time through October 6, 2008, to sell to Vivendi Universal the remaining interest in the holding company at a price based on the average market price of FCC's common stock over the three months prior to exercise. The exercise price of the put option is capped at the lower of seven times FCC's EBITDA and 29.5 times FCC's earnings per share in the last fiscal year. We have agreed to purchase from Vivendi Universal any stake it acquires under the put option. Pursuant to that agreement, if the put option is exercised, we would ultimately own 100% of the holding company that controls FCC. Under these circumstances, Spanish law would require us to launch a public tender offer for all the shares of FCC not owned by the holding company, which represent approximately 43% of FCC outstanding shares. The price per share of the offer would be determined by the Spanish stock exchange authorities. If based on the price of FCC's common stock on February 28, 2002, the price for the remaining 43% would be approximately €1.29 billion, subject to adjustment by the Spanish stock exchange authorities. The costs of purchasing the remaining interest in FCC and of consummating the tender offer for the remaining public interest in FCC may be substantial.

Currency exchange and interest rate fluctuations may negatively affect our financial results and the price of our shares

We hold assets and liabilities, earn income and pay expenses of our subsidiaries in a variety of currencies. Our financial statements are presented in euro. Therefore, when we prepare our financial statements, we must translate our assets, liabilities, income and expenses in other currencies into euro at then-applicable exchange rates. Consequently, increases and decreases in the value of the euro in respect of these other currencies will affect the value of these items in our financial statements, even if their value has not changed in their original currency. For example, an increase in the value of the euro may result in a decline in the reported value, in euro, of our interests held in foreign currencies, particularly in the United States, where we have recently made a number of significant acquisitions of companies and assets that are valued in U.S. dollars. Although we seek to limit the impact of these fluctuations in currency exchange rates by financing our local operations and acquisitions, to the extent possible, in local currency, we may not be able to fully offset the effects of these fluctuations on our financial statements. To the extent these fluctuations have a negative effect on our financial condition as presented in our financial statements, the price of our shares could decline.

In addition, because we have a significant amount of debt outstanding, our results of operation and financial condition may be affected by changes in prevailing market rates of interest. We manage this exposure to interest rate

risk by setting a target fixed rate for a significant part of our debt, which we achieve either through fixed rate debt or interest rate hedging activities. Including debt covered by our hedging activities, at December 31, 2001 approximately €9 billion of our debt (representing 49% of our total debt outstanding) was subject to fixed interest rates. Fluctuations in interest rates may also affect our future growth strategy. A rise in interest rates may force us to finance acquisitions or operations or refinance existing debt at a higher cost in the future, which may lead us to decide to curtail or delay our then current expansion plans.

Risks Relating to Our Relationship with Vivendi Universal

We are controlled by Vivendi Universal

Vivendi Universal owns approximately 63% of our outstanding shares. See "Item 7. Major Shareholders and Related Party Transactions — Major Shareholders." Accordingly, under French law and our by laws (statuts), Vivendi Universal will be able to control all decisions to be taken by our shareholders (unless its ownership interest subsequently falls below 50%), except those that require a super-majority vote. The matters Vivendi Universal will continue to control, either directly through its majority voting power or indirectly through its control of the membership of our supervisory board and management board, include, but are not limited to, the following:

- any transaction substantially affecting our scope of activities;
- any determinations with respect to mergers or other business combinations;
- our acquisition or disposition of substantial assets;
- our financing; and
- changes to the agreements relating to our relationship with Vivendi Universal and the enforcement of those agreements against Vivendi Universal.

Members of our supervisory board and management board may have conflicts of interest

Some of the members of our supervisory and management boards have a substantial amount of their personal financial portfolios in Vivendi Universal ordinary shares and options to purchase Vivendi Universal ordinary shares. Their ownership of Vivendi Universal ordinary shares could create conflicts of interest when they are faced with decisions that could have different implications for Vivendi Universal and us. Conflicts could arise when the supervisory or management boards make decisions with respect to, for example, dividends to be paid by our company and transactions between our company and Vivendi Universal.

We could lose use of the "Vivendi" trademark

We entered into a 5-year licensing contract with Vivendi Universal that allows us to use the name "Vivendi Environnement" on June 20, 2000, effective as of January 1, 2000, and which is renewable for additional 5-year periods. This contract, however, could be terminated in the event that Vivendi Universal ceases to hold a controlling interest in our company. See " Item 7. Major Shareholders and Related Party Transactions — Related Party Transactions." If this contract is not renewed upon its expiration, or is terminated, we would be required to change our corporate name within two years of non-renewal or termination.

Other Risks

Preemptive rights may not be available for U.S. persons

Under French law, shareholders have preemptive rights (droits préférentiels de souscription) to subscribe for cash issuances of new shares or other securities giving rights to acquire additional shares on a pro rata basis. U.S. holders of our shares may not be able to exercise preemptive rights for our shares unless a registration statement under the U.S. Securities Act of 1933, as amended, is effective with respect to those rights or an exemption from the registration requirements imposed by the Securities Act is available. We may from time to time issue new shares or other securities giving rights to acquire additional shares at a time when no registration statement is in effect and no Securities Act exemption is available. For example, in December 1999 we issued warrants to acquire new shares to all our shareholders, but those warrants are only exercisable outside the United States or by "qualified institutional buyers" in the United States.

We are permitted to file less information with the SEC than a company incorporated in the United States

As a "foreign private issuer," we are exempt from rules under the U.S. Securities Exchange Act of 1934 that impose some disclosure and procedural requirements for proxy solicitations under Section 14 of the Exchange Act. Additionally, our officers, directors and principal shareholders are exempt from the reporting and "short-swing" profit recovery provisions of Section 16 of the Exchange Act and related rules with respect to their purchases and sales of our shares. Moreover, we are not required to file periodic reports and financial statements with the U.S. Securities and Exchange Commission as frequently or as promptly as U.S. companies with securities registered under the Exchange Act. Accordingly, there may be less information concerning our company publicly available than there is for those U.S. companies.

The ability of holders of our ADSs to influence the governance of our company may be limited

Holders of our ADSs may not have the same ability to influence corporate governance with respect to our company as would shareholders in some U.S. companies. For example, the depositary may not receive voting materials in time to ensure that holders of our ADSs can instruct the depositary to vote their shares. In addition, the depositary's liability to holders of our ADSs for failing to carry out voting instructions or for the manner of carrying out voting instructions is limited by the deposit agreement. Finally, except under limited circumstances, our shareholders do not have the power to call shareholder meetings.

ITEM 4: INFORMATION ON THE COMPANY

HISTORY AND DEVELOPMENT OF THE COMPANY

The legal and commercial name of our company is "Vivendi Environnement." Vivendi Environnement is a *société anonyme à directoire et conseil de surveillance*, a form of stock corporation, incorporated in 1995 pursuant to the French commercial code for a term of 99 years. Our registered office is located at 36-38 avenue Kléber, 75116 Paris, France, and the phone number of that office is 33 1 71 75 0000. Our agent in the United States is Stephen P. Stanczak. He can be reached at United States Filter Corporation, 40-004 Cook Street, Palm Desert, CA 92211.

Historical Background

On December 14, 1853, Compagnie Générale des Eaux was founded by Imperial decree and won its first public service concession for the distribution of water in the city of Lyon, France. Compagnie Générale des Eaux continued to develop its activities in France by obtaining concessions in Nantes (1854), Nice (1864), Paris (1860) and its suburbs (1869). The French model was quickly reproduced internationally with concessions won in Venice (1880) and Istanbul.

Compagnie Générale des Eaux expanded its business into the water treatment industry in 1884 by winning, among others, a contract with the city of Reims, France, and its research and development activities led to the construction near Nice, France, in 1909 of the first water sterilization-by-ozone plant in the world. Compagnie Générale des Eaux broadened the scope of its water activities with the creation of Sade, a water-related engineering and treatment company, in 1918 and the acquisition of Tuyaux Bonna in 1924.

Compagnie Générale des Eaux experienced very strong growth during the first half of the 20th century in its water services business in France.

In 1967, Compagnie Générale des Eaux broadened its expertise in environmental services with the operations of its first household waste incineration and composting plants. It reinforced its position in the waste management industry and entered the transportation industry with its investment in Compagnie Générale d'Entreprises Automobiles ("CGEA"), a provider of transportation and waste management services, which was followed by its acquisition in 1980. During the same year, Compagnie Générale des Eaux regrouped all of its operating subsidiaries specializing in the design, engineering and execution of potable water and wastewater treatment facilities in a single company under the name "OTV."

In 1981, Compagnie Générale des Eaux became the leading provider of energy services in France with the acquisition of Compagnie Générale de Chauffe.

Compagnie Générale des Eaux accelerated its international expansion during the 1980's, particularly in the United States, where it acquired PSG and commenced operating the world's largest household waste incineration plant (Miami, Florida), and in Europe, where it acquired General Utilities, a provider of water distribution services in the United Kingdom.

In parallel to the development of its environmental services, Compagnie Générale des Eaux also developed its communication activities with the acquisition in 1983 of an interest in CANAL +, a French pay television operator, and the creation in 1987 of S.F.R., a French mobile phone operator. It continued to expand these activities during the 1990's with significant commercial developments on each of the five continents.

In 1998, Compagnie Générale des Eaux changed its name to "Vivendi" and renamed its water subsidiary "Compagnie Générale des Eaux" to distinguish the separate existence of its two main operating segments: communications and environmental management services.

In October 1998, to further extend its geographic reach, Vivendi purchased a 49% interest in the holding company that controls FCC, a Spanish public company that is the leading provider of urban waste management and the second largest provider of water and wastewater services in Spain.

In April 1999, Vivendi acquired United States Filter Corporation, the leading water treatment services and equipment company in the United States, followed by the acquisition in July 1999 of Superior Waste Services, Inc., the fourth-largest solid waste treatment company in the United States, which it combined with the U.S. industrial services and hazardous waste-related operations of Waste Management Inc. that it also acquired in 1999.

In 1999, Vivendi created Vivendi Environnement, to which it contributed or sold all of its environmental management operations, which are now conducted under the names "Vivendi Water" (water), "CGEA Onyx" (waste management), "Dalkia" (energy services) and "CGEA Connex" (transportation). Our first full fiscal year as the main holding company for all of Vivendi's environmental management businesses was 2000.

On July 20, 2000, our shares were listed on the Premier Marché of Euronext Paris in connection with an initial public offering of our shares in France and in an international private placement. In August 2001, our shares were included in the CAC 40, the main equity index published by Euronext Paris. In October 2001, we listed our shares, in the form of American Depositary Shares, for trading on The New York Stock Exchange.

In December 2000 Dalkia entered into an agreement with Eléctricité de France (EDF), the French state-owned electricity utility, pursuant to which Dalkia's energy services operations were consolidated with those of EDF. In accordance with this agreement, EDF acquired in December 2000 and January 2001 an interest in Dalkia, while Dalkia purchased certain energy services operations from EDF. See "Item 4. Information on the Company — Business Overview — Our Services — Energy Services" for a description of these transactions.

In December 2001, our main shareholder, Vivendi Universal (the new name of Vivendi), sold a block of our shares representing 9.3% of our total share capital, reducing its equity participation in our company from 72.3% to 63.05% of our total share capital. We also distributed in December 2001 free warrants to all of our shareholders, which are exercisable until March 2006. See "Item 7. Major Shareholders and Related Party Transactions — Major Shareholders."

Our principal capital expenditures and divestitures since we began operations in 1999 are described under "Operating and Financial Review and Prospects." Material capital expenditures currently in progress include those associated with the continued expansion of our existing businesses. These expenditures are being financed with cash flow from operating activities. Material divestitures currently in progress include the transfer of part of our interest in Dalkia's parent company as part of the strategic transaction with EDF described above and several disposals of non-core assets in our water business described in "Operating and Financial Review and Prospects."

Major Developments in 2001

We were awarded a significant number of long-term contracts in 2001 that are expected to generate in aggregate €24.5 billion in total revenue over the life of these contracts. In particular, we announced the following developments during 2001 (the months indicated below correspond to the month in which the transaction was made public, the related contract was executed or the transaction was closed, as applicable):

- In January, we won a contract for the treatment and distribution of potable water and the collection and treatment of wastewater in Prague, Czech Republic (approximately 1.2 million inhabitants) until 2013 (with expected average annual revenue of €110 million). We also won the renewal of our contract to operate the integrated urban transportation network of the city of Bordeaux, France, until 2008, which includes bus, boat and tram lines.

- In February, we won two outsourcing contracts, as the lead member of a consortium, for the provision of water, wastewater treatment and electricity services in the cities of Tangiers and Tetouan, Morocco during 25 years (with expected total revenue of €4.5 billion). We also participated in the privatization of 50% of the assets of Combus, a Danish regional bus operator, with an investment of €30 million. We and Rhodia created Eco Services Korea, a joint venture for the treatment of industrial hazardous waste in South Korea.

- In March, we were chosen by the city of Inchon, South Korea (2.4 million inhabitants), to build and operate two important wastewater treatment plants for 20 years (with expected total revenue of €400 million). We entered into an industrial outsourcing contract with Hynix Semiconductors in South Korea, to operate for 12 years four ultra-pure water production plants and two wastewater and industrial effluents treatment facilities (with expected total revenue of €900 million). We also won a contract to provide household waste collection services in the most important area of downtown Singapore for 5 years (with expected average annual revenue of €10 million).

- In April, we were awarded the partial privatization of the municipal services of Görlitz, Germany (with expected total revenue of €650 million) where we will provide water, waste management, energy and

transportation services. We also acquired Liikor AS, a regional bus operator based in Tartu, Estonia, and an 85% participation in the company responsible for the provision of municipal services in the city of Kielce, Poland.

- In May, our subsidiaries Onyx and Dalkia won a 30-year contract to provide integrated management of municipal waste in the city of Sheffield, U.K., where they will also provide waste-to-energy services and operate the urban heating network (with expected average annual revenue of €67 million). We acquired 65% of Marius Pedersen's waste management activities in Denmark, the Czech Republic and Slovakia (with expected annual revenue of €174 million), which be conducted through Marius Pedersen Onyx Holding. Through Vivendi Water, we entered into a 10-year contract with Millennium Chemicals Inc., the second largest producer of titanium dioxide in the world, for the design, construction and operation of industrial effluent treatment facilities in France (with expected total revenue of €165 million, including expected equipment sales). We were also chosen by Westlake Chemical Corporation, a U.S. chemicals group, to manage industrial effluents at two of its production sites in Lake Charles for 15 years.

- In June, we were awarded, for ten years, the first outsourcing contract for water and wastewater services granted in Sweden by the city of Norrtäjle (with expected total revenue of €25 million). Through the "Aquiris" franco-belgian consortium led by Vivendi Water, our main water subsidiary, we won a contract for the construction and operation for 20 years of the wastewater treatment plant for northern Brussels, Belgium (1.1 million inhabitants), which will be one of the largest wastewater treatment facilities in Europe (with expected total revenue of €1.3 billion). We also won a contract to build and operate for 15 years an energy co-generation plant for Astra Zeneca in Macclesfield, United Kingdom, with a capacity of 23MW.

- In July, a consortium led by Vivendi Water (and in which we have a 40% interest) was selected by Ambito Territoriale Ottimale (ATO) de Latina, located to the south of Rome, Italy, to manage the water and wastewater services of 38 municipalities in the region (600,000 inhabitants) during 30 years (with expected average annual revenue of €64.5 million) in the context of an outsourcing of public services. We also acquired Yellow Transportation, a passenger transportation company based in Baltimore, Maryland for €21.8 million, and we won a bid for the privatization of the BBA transportation network in the Brabant region of The Netherlands (with expected total revenue of €700 million over 6 years), which currently carries over 50 million passengers each year. Our contract for the operation of the light rail line in Sydney, Australia, was also renewed for 7 years.

- In August, we were selected by Spolchemie, a leading Czech chemicals company, to collect and treat wastewater at its industrial site located at Usti Nad Labem, in North Bohemia, Czech Republic, during 10 years (with expected average annual revenue of €2 million). We also won a bid for the privatization of the Pekaes interurban transportation networks of Sanok and Lancut, in Poland, and were chosen for the operation of an urban transportation network in Tczew, Poland.

- In September, we won, through a consortium, a contract to build and operate one of the largest seawater desalination plants in the world at Ashkelon, Israel (with expected total revenue of €900 million). We also won a public tender for the operation of the bus network of Maastricht, The Netherlands for six years (with expected average annual revenue of €25 million), and were chosen by Pfizer, a U.S. pharmaceutical company, for the treatment of solvents at 400 of its laboratories in the United Kingdom. We were also awarded a contract for the collection and treatment of waste in Bromley, one of the most important urban areas in London, for 14 years (with expected total revenue of €250 million) and commenced construction of the first hazardous waste treatment center in continental China at Tianjin, which has over 8 million inhabitants. We also won a contract with the French Ministry of Defense for the management and maintenance of electrical heating and cooling systems at its "Cité de l'Air" site in Paris during three years (with expected total revenue of €5.5 million).

- In October, we won a contract to design and build a complete water supply system for the main industrial complex of Borregard Industries, an important Norwegian chemicals group, in Sarpsborg, Norway. We also entered into an 10-year alliance with the Australian Antarctic Division (which manages the activities of the Australian government in the Australian zone of Antarctica) to participate in the preservation of the Antarctica continent. We acquired a majority interest in two co-generation

plants that supply the heating network of the city of Usti Nad Labem in the Czech Republic (with total thermal capacity of 534MW) and entered into a 7-year contract to supply electricity to SCE, the Czech electricity distribution company (with expected total revenue of €45 million). We also became the second largest energy services supplier in Italy with the acquisition of SIRAM for €108 million.

- In November, we were awarded the management of the regional bus lines in the city of Ashdod and the bus network of the city of Tiberias, in Israel, and we won contracts to manage the heating network of the city of Talinn, Estonia, for 30 years, and the heating network of the cities of Vilnius and Alytus, Lithuania, for 15 years (with expected average annual revenue of €84 million in Vilnius and €12.5 million in Alytus). We also won a contract to restore and expand three wastewater treatment plants in the Illawara region, located to the south of Sydney, Australia (with expected total revenue exceeding €84 million).

- In December, we won a 25-year outsourcing contract in the context of the privatization of the municipal provider of water services in the cities of Tarnowskie Gory and Miasteczko Slaskie in Poland (with expected total revenue of €125 million), and a 15-year contract to provide a full range of environmental management services for Usinor's new plant in Vega do Sul, Brazil (with expected average annual revenue exceeding €20 million). In France, we won a 20-year contract with the Marne departmental labor union for the treatment of waste (with expected total revenue of €192 million). We also acquired a tri-generation plant and entered into a contract to provide industrial services to the Videocolor plant in Anagni, Italy, of Thomson Multimedia for 10 years (with expected total revenue of €93 million). We entered into three contracts for waste treatment and waste-to-energy services in Taiwan for 20 years (with expected total revenue of €1.3 billion) and we won two public bids in the United States to operate urban bus transportation networks in Columbia, South Carolina (with expected average annual revenue of €6 million) and Fairfax, Virginia (with expected average annual revenue of €7 million during 3 years). We were also awarded the largest contract for the recovery of land in Europe, relating to AGIP's abandoned industrial site in Italy where hydrocarbon filtration has resulted in high levels of land contamination.

BUSINESS OVERVIEW

Our Market

Traditionally, environmental management services, which include water treatment and distribution services, waste treatment and recovery services, energy services (excluding the production, trading and sale of electricity) and transportation services, have been provided in an uncoordinated manner, each by a different entity. A provider of energy services, for example, would not also offer water treatment or waste disposal services, nor would it integrate its services with those of a customer's other environmental service providers. Public authorities and industrial and commercial companies, moreover, have typically met many of their own environmental needs without looking to private firms that specialize in these areas. This situation has changed fundamentally in recent years, however, as industrial and commercial companies have continued to expand on a global scale and increasingly require environmental management services providers with a global reach that matches the international scope of their customers' operations.

We are leading a trend toward the creation of comprehensive packages of large-scale, customized, integrated environmental management services to governmental and private clients around the world. We believe that we possess the core competencies necessary to provide our environmental management services in an integrated, global manner, including:

- long-term contract management–the ability to win and successfully manage long-term contracts (12 to 30 years) with public authorities and industrial and commercial companies;

- operating within highly regulated or contractually restricted conditions–the ability to conduct operations while satisfying complex legal requirements and to adapt quickly to evolutions in those requirements;

- workforce management–the ability to successfully convert government employees or non-core environmental services employees of an industrial or commercial company through training and management into a competitive, technically expert, core environmental services workforce;

- financial strength and the ability to finance large-scale environmental infrastructure projects to meet a wide range of customer needs;

- technical expertise–the ability to manage complex, technologically advanced environmental operations at multiple sites creatively and efficiently and to coordinate those operations so as to provide a seamless package of integrated services of consistently high quality; and

- global scale–the ability to bring all the foregoing skills to bear in key markets around the world.

We believe that demand for integrated, customized packages of environmental management services is likely to grow around the world significantly for the following reasons:

- Major investment in environmental projects and services is needed because of increasingly stringent environmental standards, the need to provide growing urban populations with adequate environmental services and the aging of existing environmental infrastructure. According to United Nations estimates, for example, there will be almost three billion people without access to safe drinking water and more than four billion people without adequate sanitation by 2025 if investment in environmental projects does not increase. A related trend is increased public demand for high-quality and extremely reliable environmental products and services.

- Governments throughout the world face budgetary constraints and often lack the technical and operational skills of private sector firms to address environmental issues efficiently, just as public demand for high-quality, efficient environmental services is increasing. As a result, governmental authorities are increasingly turning to the private sector to address their environmental needs. For example, our revenue in transportation has grown by 800% over the last ten years, in part because the European Commission encourages the delegation of transit system management to private operators.

- Industrial and commercial companies are increasingly delegating tasks outside their core areas of expertise to third parties in order to reduce costs and comply with increasingly stringent environmental standards. Few industrial or commercial companies have core competencies in environmental services; consequently, the market for outsourced environmental services is expanding.

- Public and private entities are increasingly attempting to simplify the administration of their complex operations by outsourcing a wide variety of responsibilities to a single partner, creating an opportunity for companies capable of offering a broad range of environmental management services in an integrated fashion.

- Large private firms and public authorities increasingly recognize that a "one size fits all" approach will not meet their unique and changing needs. As a result, demand for customized environmental management services has grown.

- The increasingly multinational profile of many large industrial and commercial firms encourages them to outsource non-core activities to companies with similar geographic reach to simplify administration and ensure they receive consistent service at each of their facilities.

We think that each of these trends, taken individually, has created significant opportunities for companies with our expertise, and, taken as a whole, they allow us to provide innovative, integrated environmental management services in markets around the world on a one-stop shopping basis. Our subsidiary, Global Environnement, pools the resources of each of our four operating divisions for customer projects on the basis of each customer's needs and each project site's environmental requirements. Global Environnement develops fully integrated service offerings and permits our customers to benefit from a relationship with a single counterparty that coordinates the application of the different skills required by each customer. For example, because each industrial sector faces different specific environmental challenges, we have created specialized teams led by our Industrial Markets Department to guarantee continuity in the solutions we offer. In addition, the employee training programs developed by our *Institut de l'Environnement Urbain* ("Urban Environment Institute") allow us to integrate within our own personnel several designated employees of our customers in order to form specialized teams that are particularly suited for a specific project.

Our Business

We are the leading provider of environmental management services in the world and we increasingly provide our services in innovative, integrated and customized packages. We provide environmental management services to a wide range of public authorities, industrial and commercial customers and individuals around the world. Our revenue from services to public authorities represented 66% of our total revenue in 2001, while our industrial and commercial customers represented 34% of total revenue in 2001.

In particular, the development of our industrial customer base has become a major growth factor in our business. Our expertise in multi-service solutions, the complementary nature of the skills and capabilities of each of our operating divisions assembled in a single global offering and the ability to deliver customized solutions on each of the five continents allow us to respond to the demands of our large industrial customers. As a result, services to industrial customers represent a steadily increasing share of our revenue, growing by 15% from 2000 to 2001.

While we have sales worldwide, our largest market is Europe and, to a lesser extent, the United States. In 2001, we generated 42.5% of our revenue in France, 30.8% in the rest of Europe, 21.4% in North and South America and 5.3% in the rest of the world. We are not materially dependent upon any particular customer, and no one contract represented more than 3% of our revenues in 2001.

Our Strategy

Our overall strategy is to use our broad range of services and extensive experience to capitalize on increased demand for reliable, integrated and global environmental management services. The major elements of this strategy are to:

- **Leverage our expertise, leading market positions and strong financial position to deliver strong internal growth**

  Providing environmental services has been the core business of our company and its predecessor for nearly 150 years. We have demonstrated technological, financial and management expertise and routinely enjoy success in bidding for contracts offered through public tenders by public authorities and industrial companies. We have vast experience in the management of long-term relationships with public authorities. We also have a track record of using our technological and management expertise to deliver the highest quality of service at the most competitive cost. We intend to use our broad range of expertise and experience to take advantage of increasing demand for privatized and outsourced environmental management services. Our business generated internal growth of 7.5% in 2001 and 11% in 2000.

- **Develop unique, integrated, multi-service offerings**

  We are integrating our environmental operations to meet increasing demand for comprehensive environmental management services. We expect that industrial and commercial companies will increasingly seek a single one-stop environmental management services provider that coordinates the performance of many of their non-core activities. In September 2000, for example, we won a contract to provide integrated energy and waste services at Novartis' site in Basel, Switzerland, one of the largest industrial environmental services contracts ever signed (with expected total revenue of €900 million over 7 years). Another more recent example is the outsourcing contract for environmental-related industrial services that we won in December 2001 for Usinor's new plant in Vega do Sul, Brazil, which includes the transformation and distribution of electricity, the production and distribution of industrial gas and the integrated management of the entire water and waste cycles (with expected total revenue of €300 million over 15 years and an investment of approximately €45 million). We are also increasingly providing integrated environmental management services to public authorities. For example, we recently won an outsourcing contract for the municipal services of the city of Görlitz, Germany (which include water, waste management, energy services and transportation services), through the acquisition of 74.9% of the Stadtwerke, which has 420 employees that serve approximately 80,000 people and generated total consolidated revenue of 120 million deutsche marks (€65 million) in 2001 for 10 years.

- **Achieve and maintain "best-in-class" performance in each of our business segments by investing in technology and personnel**

  The projects we undertake require extensive technical know-how and excellent management capabilities. We make significant investments in both technology and personnel training to ensure that we deliver the highest quality environmental services possible. Our goal is to achieve and maintain best-in-class service across our business segments.

- **Seize opportunities arising from our worldwide reach**

  Because our operations span the globe, we can offer multinational industrial companies a uniform quality of service, on the one hand, and centralized environmental services management, on the other. We are one of the only environmental services companies with the ability to offer services on a worldwide basis.

  Our worldwide presence also allows us to quickly seize opportunities to enter markets that experience sustained growth of environmental management services in countries outside western Europe and North America. The extensive experience we have acquired in dealing with a wide variety of legal and political environments facilitates our entry into these markets.

- **Focus on high value-added environmental services**

  We intend to focus on providing high value-added environmental services and to limit our exposure to low-margin commodity supply businesses. This focus will also enable us better to take advantage of our core strength: our ability to provide creative, customized, integrated environmental services to clients with large, geographically diverse and complex operations. In line with our strategy to focus on our environmental services business, we launched a divestiture program for non-strategic assets pursuant to which we generated proceeds of €598 million in 2001. For example, in November 2001 our subsidiary U.S. Filter Corporation sold its interest in Johnson Screen as the first step in a process that led to the execution of an agreement for the sale of its interest in Filtration and Separation Group (FSG) in 2002, which generated aggregate proceeds (including proceeds from the sale of Johnson Screen) of approximately U.S.$500 million. The closing of the sale of FSG is subject to approval by applicable antitrust authorities, which are expected to render their decision in the first half of 2002.

- **Make opportunistic acquisitions to expand our service offerings and geographic reach**

  We intend to acquire environment-related companies when the opportunity to do so on favorable terms arises. The purpose of these acquisitions will be to expand the portfolio of services we can offer clients and to extend our geographic reach. We believe that successful acquisitions in key areas will significantly enhance our ability to provide high value-added services in growing markets.

Our Services

We are a world leader in services related to the environment. We have operations in over 100 countries on each of the five continents providing water to over 110 million people, treating 47 million tons of waste and satisfying the energy requirements of hundreds of thousands of buildings for our industrial, municipal and individual customers.

We believe that we offer a more comprehensive array of environmental services than any other company in the world. We have the expertise, for example, to supply water to and recycle wastewater in a customer's facility, collect, treat and recover waste generated in the facility, supply heating and cooling services and optimize industrial processes used in the facility, all in an integrated service package designed to address the customer's unique circumstances.

Our operations are conducted primarily through four subsidiaries, each of which specializes in a single business segment: Vivendi Water (for water), Dalkia (for energy services), Onyx (for waste management) and Connex (for transportation). We also have a 49% interest in, and shared control over, the holding company that controls FCC, a Spanish group that operates in the construction industry and provides a range of environmental-related services.

The following table shows the contribution of selected geographic markets to the revenue of our business segments and to our consolidated revenue for 2001, after elimination of all inter-company transactions:

2001 Revenue (€ billions)	Water	Waste Management	Energy Services	Transportation	FCC	Consolidated	%
Europe	8.44	3.76	3.94	2.93	2.27	21.34	73.3%
of which France	*6.19*	*2.44*	*2.73*	*0.99*	*0.01*	*12.36*	*42.5%*
Americas	4.23	1.76	0.02	0.04	0.18	6.23	21.4%
Rest of the world	0.97	0.39	0.06	0.13	0.00	1.55	5.3%
of which Africa-Middle East	*0.44*	*0.07*	*0.04*	*0.00*	*0.00*	*0.55*	*1.9%*
of which Asia-Pacific	*0.53*	*0.32*	*0.02*	*0.13*	*0.00*	*1.00*	*3.4%*
Total	13.64	5.91	4.02	3.10	2.45	29.12	100%
in %	46.9%	20.3%	13.8%	10.6%	8.4%	100%	

Water

Vivendi Water, our main water services subsidiary, is the world's leading provider of water services and one of the leading designers and manufacturers of water treatment facilities, equipment and systems for industrial and commercial companies in the world. With its 86,000 employees around the world, Vivendi Water operates in over 100 countries and serves over 110 million people in the world through over 7,000 operating contracts. Vivendi Water's three main subsidiaries are Compagnie Générale des Eaux, which is the leading water and waste water services company in Europe and has operations worldwide, United States Filter Corporation, which, according to PW Financing, an industry publication, is North America's leading water services and equipment company, and Vivendi Water Systems, a designer and provider of water treatment systems and installations.

The following table shows the consolidated revenues and operating income of our water operations in each of the last three fiscal years, after elimination of all inter-company transactions:

Water (€ millions)	2001(1)	2000(1)	1999
Revenue	13,641	12,768(2)	10,467(2)
Operating income	1,122	1,021	763

(1) Includes 50% of the results of the water services activities of Proactiva, our joint venture with FCC. See "— Fomento de Construcciones y Contratas (FCC)."

(2) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

We generated 69% of our water revenue in 2001 from contracts with municipalities, 26% from commercial and industrial customers and 5% from the individual consumer sector.

Vivendi Water manages a large number of municipal water and wastewater services around the world, including, in France, Paris and its suburbs, Lyon and Marseilles, and in the rest of the world, Berlin (Germany), London's suburbs (U.K.), Budapest (Hungary), Bucharest (Romania), Adelaide (Australia), Tampa Bay (U.S.), Tianjin (China) and Libreville (Gabon). Vivendi Water also has approximately 40,000 industrial clients, including General Motors, Conoco, Hyundai, Danone and British Petroleum (BP). About two-thirds of Vivendi Water's individual customers are in North America, with the remainder located mainly in Europe.

Our water division possesses a strong and structured global network that enables our clients to benefit both from the same quality of service at each of our geographic sites and from a service offering adapted to each local context. With operations around the world, Vivendi Water contributes to limit the waste of water resources and to reduce pollution levels. We believe that our water activities will continue to benefit in 2002 from new contracts and plans to increase productivity that have been implemented. Vivendi Water's objective is to intensify the conquest of new industrial clients, while maintaining its position as strategic partner in the management of potable water and

wastewater municipal services in Europe and the United States. We expect increased commercial penetration in the United States, as well of the continued implementation of our divestiture program relating to non-strategic assets of U.S. Filter Corporation. In Asia, Europe and Morocco, we hope to capitalize on our current growth dynamic and benefit from the significant growth potential of these markets. We also intend to consolidate Vivendi Water's leading position in the design and production of water treatment systems for industrial customers, continue to develop our research efforts to achieve constant technological advances, and develop new services for individuals. Regarding services to individuals, through Culligan we intend to pursue our development in United States and particularly in Europe.

We provide the following services and products:

- *Municipal and Industrial Outsourcing*. The main focus of our water business is on the management and operation of water and waste water treatment and distribution services for public authorities and industrial customers. Through Vivendi Water, we provide integrated services that cover the entire water cycle, from collection from natural sources and treatment to storage and distribution to collection and treatment of waste water. Our activities include the design, construction, management and operation of large-scale, customized potable water plants, wastewater treatment and recycling plants, potable water distribution networks and wastewater collection networks. We also provide water purification-related services to end users.

  Municipal Outsourcing. Our company and its predecessor have provided outsourced water services to public authorities in France and in the rest of the world for more than 150 years under long-term contracts adapted to local environments, and we use our experience, technology and know-how to capitalize on the worldwide trend towards privatization of municipal water and wastewater services.

  In France, Vivendi Water operates in over 8,000 municipalities in France under the trade name "Générale des Eaux," where it distributes water to approximately 26 million people and treats wastewater generated by approximately 17 million people. In a competitive environment in which a number of municipalities choose to provide public services through concession contracts with private operators, Générale des Eaux won 41 new contracts in 2001. In addition, we obtained the renewal of 141 existing contracts out of 184 contracts that were reopened for public tender in 2001. The 43 contracts that were not renewed represent only 0.8% of our 2001 water revenues in France, which continued to grow despite these non-renewed contracts.

  In Europe, Vivendi Water is one of the leading companies in the market for services to public authorities by winning a number of significant contracts, including in:

  — Prague (Czech Republic), where we will take over until 2013 the treatment and distribution of potable water and the collection and treatment of wastewater of the city, with approximately 1.2 million inhabitants (with expected average annual revenue of €110 million);

  — Ambito Territoriale Ottimale (ATO) de Latina (a province located to the south of Rome, Italy, which comprises 38 municipalities and 600,000 inhabitants), in the context of an outsourcing of public services relating to potable water and wastewater services during 30 years awarded to a consortium led by Vivendi Water and in which we hold a 40% interest (with expected average annual revenue of €64.5 million); and

  — Brussels (Belgium), where, through the franco-belgian Aquiris consortium, we will build and operate for 20 years one of the largest wastewater treatment plants in Europe serving 1.1 million people (with expected total revenue of €1.3 billion).

  Vivendi Water was awarded its first contracts in Poland, where it will manage the water and wastewater services of the cities Tarnowskie Gory and Miasteczko Slaskie for 25 years (with expected total revenue of €125 million), and in Sweden in the city of Nortälje, which is the first Swedish municipality to outsource its water and wastewater services (with expected total revenue of €25 million over 10 years). Together with its presence in Germany and Hungary, these services reinforce Vivendi Water's advances in municipal outsourcing in Europe.

In Africa, Vivendi Water won, as the lead member of a consortium, the management of the water distribution, wastewater treatment and electricity services of the cities of Tangiers and Tetouan (Morocco) for 25 years (with expected total revenue of €4.5 billion), where we will also work to develop and modernize related infrastructures, expand the local population's access to these essential services, reduce the wasteful use of water and energy and monitor the quality of water distributed. Our modernization efforts will include the training of approximately 2,000 people that will work locally in the context of this project. We were also awarded a 10-year concession for the country-wide distribution of water in Niger.

In Israel, Vivendi Water, as a member of a consortium, was chosen to build and operate during 25 years in Ashkelon, Israel, one of the largest seawater desalination plants in the world, which will provide fresh water to approximately 700,000 people (with expected total revenue of €900 million).

In North America, Vivendi Water continued to develop its municipal outsourcing activities, where it won a number of contracts including a contract to build and operate during 20 years one of the most important sludge treatment plants in the district of Chicago, Illinois, and a contract to treat wastewater for the city of Naugatuck, Connecticut for 20 years (with expected total revenue of €76 million). Vivendi Water will also provide supplemental equipment in the context of a contract signed in 1999 with the city of Palm Springs, California.

In Asia, where we have operations in Thailand, Malaysia and China, Vivendi Water recently commenced operating the potable water plant in Chengdu, China, which serves approximately 3.2 million people, and was chosen to build and operate during 20 years two important wastewater treatment plants for the city of Inchon, South Korea, which has 2.4 million people inhabitants (with expected total revenue of €400 million).

Industrial Outsourcing. Despite the difficult economic conditions in 2001, Vivendi Water's industrial outsourcing activities in Europe and Asia were not affected. We won a number of major contracts in 2001, including an industrial effluent management contract with Millennium Chemicals, the second largest producer in the world of titanium oxide (according to Millennium Chemicals' estimates), to design, build and operate wastewater treatment facilities in Thann (Alsace) and Le Havre (Normandy) in France, which is the largest contract to date in France relating to industrial effluents (with expected total revenue of €165 million over 10 years, including expected equipment sales). We also entered into contracts with Spolchemie, a leading Czech chemicals company, to collect and treat wastewater at its main production site at Usti Nad Labem (North Bohemia), in the Czech Republic, where Vivendi Water already has a strong presence (with expected average annual revenue of €2 million for 10 years), Hynix Semiconductors Corp., in South Korea, to operate for 12 years four ultra-pure water production plants and two wastewater treatment units (with expected total revenue of €900 million), Westlake Chemical Corp., one of the principal global chemicals groups, to manage for 15 years its industrial effluents at two of its production sites in Lake Charles, U.S.A., and Equistar to manage its industrial water and effluents in Clinton, U.S.A.

Our contracts with industrial and commercial enterprises generally last three to ten years, but some last as long as 20 years.

- *Water Treatment Systems and Equipment.* Through United States Filter Corporation and Vivendi Water Systems, Vivendi Water is one of the world's leading designers and manufacturers of water and waste water treatment equipment and systems for public authorities and private companies. Vivendi Water treats ground water, surface water and wastewater using a wide range of separation processes and technologies and we engineer customized systems to reduce or eliminate water impurities. Vivendi Water's recycle/re-use systems provide customers with the ability to circulate treated water back into plant processes, thereby reducing water usage, operating costs and environmental damage.

  Vivendi Water also designs, engineers, manufactures, installs, operates and manages standardized and semi-standardized water equipment and systems designed to treat water for particular public service and commercial and industrial uses. The large number of installations we construct and operate gives us a

competitive advantage in terms of cost, performance and reliability, especially for services to commercial and industrial firms. For example, many manufacturing processes–particularly those used in the food and beverage, pharmaceutical, microelectronics, paper, chemical processing and oil/petrochemical industries–require treated water to improve product quality and reduce equipment degradation. We use a broad range of physical, biological and chemical treatment technologies that can be combined and configured to treat water to a customer's individual specifications.

Through SADE and other subsidiaries of Compagnie Générale des Eaux, Vivendi Water also constructs and repairs urban and industrial water and wastewater networks in France and around the world.

Vivendi Water experienced a good level of growth in its water treatment systems and equipment business in 2001. Despite a challenging economic environment in the United States, U.S. Filter Corporation was awarded a significant number of equipment contracts with municipalities and industrial customers. In the United States, we hope to capitalize on Vivendi Water's know-how in sophisticated water treatment to consolidate its market positions.

Municipalities. In China, several municipalities, including Tianjin, Wujin, Xinxiang, Putian, Zhuhai, Dafang and Benghu, have chosen Vivendi Water to upgrade existing or install new potable water treatment plants. In Australia, Vivendi Water was chosen to restore and expand three water treatment plants in the Illawara region (300,000 inhabitants), located to the south of Sydney (with expected total revenue of €84 million). In Jordan, Vivendi Water won a contract to upgrade and enlarge the wastewater treatment plant of the city of Ramtha (with expected total revenue of €9.5 million). In the United States, U.S. Filter Corporation won a contract to install a water micro-filtration system at the Snyderville Basin in Utah, which provided potable water to several sites of the Winter Olympic Games, and a contract to install an innovative sludge treatment system in Chattanooga, Michigan.

Industrial and Commercial Companies. Vivendi Water was also awarded a number of contracts by industrial and commercial firms around the world in 2001, including a contract to design and deliver a pretreatment system to TransAlta, a major electricity utility in Saint-Laurent du Quebec, Canada, a turnkey contract with Dead Sea Works, a world leader in the potassium industry, for the installation of a wastewater crystallization treatment system in Israel. In addition, Fujian Petrochemical Co. chose Vivendi Water for the installation of a wet air oxidation process for the wastewater treatment unit of its refinery, and Borregard Industries, an important Norwegian chemicals group, awarded Vivendi Water a contract to design and build the complete water supply system for its main industrial complex in Norway.

- *Services to Individuals.* Through United States Filter Corporation, Vivendi Water provides bottled water to North American and European consumers under the "Culligan" brand (serving approximately 5,000,000 homes around the world), as well as a variety of point-of-entry and point-of-use water treatment products such as water softeners. Through approximately 100 bottling locations, Culligan purifies directly its drinking water which is distributed through a wide network of over 820 dealerships, which include approximately 180 company-owned dealerships in the United States, Canada and Europe and approximately 640 franchises in North America. Our bottled water sales are made principally through short-term contracts that are often renewed, typically automatically.

  In 2001, despite limited growth in its overall sales, Culligan recorded an increase in sales of bottled water, particularly in Europe, but also in the United States. In France, Vivendi Water formed Doméo, a joint venture with the U.K. group Home Service Limited, which offers individuals an emergency plumbing repair service under the "Générale des Eaux Services" trademark.

Waste Management

Through Onyx and our participation in FCC, we are the third largest waste management company in the world and one of the largest in Europe, with over 70,000 employees around the world treating 47 million tons of waste each year and serving over 74 million people in 48 countries on five continents. Our principal markets are in Europe and North America. We also provide waste management services in the Asia/Pacific region, where we are one of the

market leaders. We also conduct waste operations in Latin America through Proactiva, our joint venture with FCC. See "—Fomento de Construcciones y Contratas (FCC)."

The following table shows the consolidated revenues and operating income of our waste management operations in each of the last three fiscal years, after elimination of all inter-company transactions:

Waste Management (€ millions)(1)	2001(2)	2000(2)	1999
Revenue	5,914	5,260(3)	3,475(3)
Operating income	393	394	276

(1) Does not include results of FCC.

(2) Includes 50% of the results of the waste management activities of Proactiva, our joint venture with FCC. See "— Fomento de Construcciones y Contratas (FCC)."

(3) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

Through Onyx and our participation in FCC, we have become the main global provider of integrated waste management services–which include solid, liquid and hazardous waste management–to companies, on-site and off-site, around the world, including Ford, General Motors, Renault, Rhodia, Novartis, Bayer (with expected total revenue of €45 million over 5 years) and Motorola. Onyx also designs, builds and operates integrated solid waste disposal, treatment and recycling systems for municipalities such as Hampshire County, the cities of Sheffield and Bromley (with expected total revenue of €250 million over 6 years) in the United Kingdom and the district of Nantes in France. With a leading global treatment network that covers all technologies, Onyx is one of the few providers of on-site services to large industrial companies on the five continents.

Excluding Proactiva's waste management activities, we have waste management contracts with approximately 265,000 industrial and commercial clients worldwide, which represented approximately 62% of our waste management revenues in 2001 (with the remaining 38% corresponding to contracts with local public authorities). Our contracts with industrial and commercial clients cover a broad range of waste management services, including collection, recovery and treatment.

We perform most municipal solid waste management services under contracts with municipalities or regional authorities. Waste contracts with public authorities typically cover collection, transfer, recovery and treatment of waste. Municipalities and regional authorities in each of our markets are increasingly outsourcing a broad range of waste management and related services to service providers that offer integrated waste services.

Onyx's core business consists of the collection, recovery (sorting and recycling) and treatment of municipal, commercial and industrial waste (solid, liquid and hazardous). Onyx also provides a broad range of related services such as urban, commercial and industrial cleaning and recovery and treatment of land in abandoned industrial sites. Our waste management operations fall into two broad categories: waste collection and related services and waste treatment. For example, Onyx, in association with Dalkia, was chosen to take over the integrated management of waste and energy in the city of Sheffield, U.K. (with 500,000 inhabitants and 260,000 tons of waste each year) for 30 years (with expected average annual revenue of €67 million). Pursuant to this contract, we will provide waste collection services and develop recycling services through selective collection, waste disposal site management and the construction of a recycling unit. We will also operate a waste-to-energy plant and build a new plant with a capacity of 225,000 tons, and develop an existing urban heating network.

The duration of our waste contracts usually depends upon the nature of the services we provide, applicable local regulations and the level of capital expenditure the contract requires us to make. Collection contracts usually last from three to five years. The length of treatment contracts ranges from one year for operations in landfills that we own to up to 30 years for contracts involving the construction, financing and operation of new waste treatment facilities. Collection contracts with industrial and commercial customers typically last one to three years, while treatment contracts with these customers last an average of five years.

Onyx's main goals are to develop its waste treatment capabilities, strengthen its offering to industrial clients by capitalizing on its expertise in the complete waste management chain and its ability to generate synergies with

our other operating divisions, consolidate its international network and broaden its technological lead in waste treatment and recovery.

- *Waste collection and related services*
  - *Collection and Transfer.* Onyx collected approximately 31.5 million metric tons of waste from residences, communal depositories and industrial and commercial sites in 48 countries around the world in 2001, compared to 30 million metric tons in 2000. Onyx provided residential waste collection services to more than 47 million people in 2001. Onyx was recently chosen to manage waste collection and treatment for Alexandria, the second largest city in Egypt with 3.5 million inhabitants, as a result of which it became one of the first operators to develop European waste management technology in the Middle East. Onyx collects approximately 2,500 metric tons of residential waste each day in Alexandria and employs over 3,000 people in its Egyptian operations. Onyx was also awarded a 5-year household waste collection contract for the most important area of downtown Singapore in 2001 (with expected average annual revenue of €10 million).

    Onyx have also developed hazardous waste collection services for its industrial and commercial customers, including specialized collection services for specific types of waste. For example, in France Onyx has developed "Medicollecte," a medical waste collection service, which includes medical waste advice provided by Onyx's health professionals. Onyx collected approximately 2.3 million metric tons of hazardous waste in 2001. Onyx also offers its industrial and commercial clients a range of services related to the collection of hazardous waste, such as preliminary studies of future waste collection needs and waste tracking after collection.

    Onyx transports collected waste to transfer and sorting stations, recycling, recovery and treatment centers. Hazardous waste is usually transported in specially constructed containers, tankers or semi-trailers to specialized treatment centers.

  - *Sorting and Recycling.* Recycling generally involves the selective or separate collection of paper, cardboard, glass, plastic, wooden and metal waste that customers either separate into different containers or commingle with other recyclable materials. Customers are increasingly separating different types of recyclable waste into separate containers, which requires selective collection services. Onyx received approximately 6 million tons of solid waste at its 184 sorting, recycling and transfer units in 2001, of which 4.3 million tons were recycled, including 1.8 million tons of paper and 2.5 million tons of non-paper materials collected from household, industrial and commercial sites. Onyx also provides disassembly and recycling services for complex waste products at specialized treatment centers, such as electric and electronic products and used vehicles.

    Recyclable material is sold to intermediaries or directly to industrial and commercial clients. Onyx is one of the European leaders in recycling waste paper and cardboard and has substantial waste paper recycling operations in the United States. Sorting and recycling are also becoming larger components of the environmental management services we provide to industrial and commercial companies. We design and develop recycling systems that enable our industrial and commercial customers to optimize their production chains by reusing certain waste by-products generated in the manufacturing process, such as our glass recycling system that enables electronic consumer products companies to reuse glass waste in their tube production cycles after treatment at one of Onyx's recycling centers.

  - *Commercial and Industrial Cleaning.* Onyx cleans industrial sites, primarily petrochemical, auto manufacturing and food processing plants, offering specialized services such as ultra high-pressure cleaning, clean-room cleaning and tank cleaning. Onyx also cleans a variety of commercial facilities, including offices, train stations, subways, airports, museums and supermarkets. Onyx offers its commercial and industrial cleaning services in most industrialized countries, including the United States, Canada, France, Germany, Australia, Sweden and Norway. Onyx has developed advanced technological cleaning systems, including specialized robots, that enhance the quality of

the cleaning services offered, reduce the time required to complete cleaning operations and increases the safety of employees. The quality of our cleaning services for food-processing plants, which operate under strict hygiene requirements and regulations, have recently been recognized with the granting of an ISO 9001 certification.

- *Urban Cleaning*. Onyx provides a broad range of urban cleaning services for over 4,000 cities around the world, including London, Paris, Madrid and Chennai (formerly known as Madras), India. In Chennai, for example, Onyx collects over 1,200 metric tons of waste and cleans over 1,000 kilometers of urban streets each day. Onyx's services include mechanized street cleaning, treatment of building façades to eliminate graffiti and other markings and treatment and deep-cleaning of surfaces to remove paint, solvents, oil, chewing gum and other items. Onyx has developed a range of sophisticated mechanized cleaning equipment to ensure the quality and efficiency of our services. Onyx also provides cleaning services required after significant road accidents.

- *Waste treatment*

Onyx treated approximately 47 million metric tons of waste at its landfills, its incineration and energy production centers, its composting centers and its hazardous waste treatment centers in 2001. For example, Onyx recently became one of the leading waste treatment companies in the Scandinavian region with the acquisition of a 65% controlling interest in a new company created to conduct the waste management operations of Marius Pedersen, a Danish foundation, particularly in Denmark, Czech Republic and Slovakia. We expect that the alliance with Marius Pedersen will generate an expected average annual revenue of €174 million.

- *Non-hazardous Solid Waste*. Onyx treats approximately 43 million tons of non-hazardous solid waste each year through landfill deposits, incineration or composting. Industrial and commercial solid waste are mainly deposited in landfills, while household waste is also incinerated and composted. In 2001, Onyx was chosen by Rhodia for the treatment of solid waste at six additional sited in France. Onyx also won important waste management contracts with Huttenwerke Krupp Mannesmann, in Germany, and with Worsley Alumina, one of the world leaders in aluminum production, in Australia.

- *Landfills*. Onyx treats 24 million tons of non-hazardous solid waste a year in 140 different landfills. Onyx has developed expertise in waste treatment methods that minimize emission of liquid or gaseous pollutants, allowing Onyx to manage landfills under strict environmental regulations. 88 landfills are now equipped to recover and treat their biogas emissions, which experts estimate produce a greenhouse effect 20 times greater than carbon dioxide emissions. At 23 of its landfills, Onyx recycles biogas by converting it into energy.

- *Waste-to-energy and Incineration*. Onyx operates 68 waste-to-energy recovery and incineration plants to incinerate approximately 8.1 million tons of non-hazardous solid waste per year, the majority of which is urban waste. Energy is mostly generated by the heat created from incinerating waste at these plants. Onyx sells this energy principally to district thermal networks or electricity providers. Waste-to-energy recovery and incineration is often used in densely populated areas where landfill space is scarce or in cases where waste is not suitable for recycling. Onyx continuously develops innovative waste-to-energy procedures to broaden the range of waste materials that may be converted into energy and to optimize the production of energy. Onyx has also developed techniques that enable its waste-to-energy recovery and incineration plants to operate in strict compliance with environmental regulations, such as its smoke and ash treatment processes.

- *Composting*. Onyx composts approximately 2 million metric tons of waste a year at 80 composting production units. Onyx sells a portion of the composted waste for use as fertilizer. In addition, Onyx and Vivendi Water have jointly installed a sludge composting unit within Vivendi Water's wastewater treatment plant for the region of Saint-Cyprien, Western Pyrénées (80,000 inhabitants) in France. Composted with Onyx's expertise, the sludge becomes a high-end composted waste

product that may be sold as an organic supplement. The commercialization of the resulting compost product depends on the quality of sludge, which in turn depends on the quality of the wastewater treatment procedure. Our composted sludge is the first type of composted sludge product approved and authorized for sale in France. Our composted sludge solution contributes to the sustained fertility of agricultural lands that are running out of organic elements.

- *Industrial Hazardous Waste.* Onyx treats 3.2 million tons of industrial hazardous waste each year in 31 treatment facilities, primarily in the United States, France, the United Kingdom, Hungary, Israel, Taiwan and South Korea. Onyx also recently commenced the construction of the first industrial hazardous waste treatment facility in continental China, at the city of Tianjin (with over 8 million people), and we and Rhodia created a joint venture company for the treatment of industrial hazardous waste in South Korea under the name "Eco Services Korea." The principal methods used for treating industrial hazardous waste are:
  - incineration for organic liquid waste, solvents, salted water and sludge;
  - solvent recycling;
  - stabilization of residues followed by treatment in specially-designed landfills; and
  - physical-chemical treatment of inorganic liquid waste.
- *Recovery of Polluted Industrial Sites.* Onyx has recently commenced leveraging its expertise in waste management to provide treatment and related services for the recovery of land in abandoned industrial sites where unmanaged waste treatment or industrial accidents have resulted in high levels of contamination. Onyx's engineers design, develop and implement treatment and recovery strategies on a case-by-case basis for each industrial site.
- *Liquid Waste Management.* Onyx's liquid waste management operations focus principally on pumping and transporting liquid effluent associated with water treatment sewage networks and oil residues to treatment centers. Onyx is one of the world's leaders in the collection of oil residues with approximately 115,000 tons collected in 2001. Onyx also provides pumping and transportation services to industrial and commercial companies on short notice following accidents and other incidents involving liquid waste. Onyx has developed liquid waste management procedures that emphasize environmental protection, such as the on-site collection, recycling and reuse of water during the provision of its liquid waste management services. In 2001, for example, Onyx began treating the solvents produced at 400 laboratories of Pfizer in the United Kingdom.

Energy Services

Dalkia, our main energy services subsidiary, is the leading provider of on-site energy management and transformation services in a rapidly growing European market. With operations in 30 countries, Dalkia employs approximately 37,000 people around the world. Dalkia also offers a wide range of industrial utilities and facilities management services to respond to a growing demand, almost non-existent ten years ago, for outsourcing solutions for of these services.

In December 2000 Dalkia entered into an agreement with EDF that enables it to provide its energy services in strategic partnership with EDF. Recent changes to the European regulatory framework applicable to electricity providers have lifted a number of limitations on the ability of these utilities to provide other energy-related services. Traditionally, European electricity providers have been operated as monopolies under a regulatory framework designed to prevent their monopoly in power generation from giving them unfair advantages in other markets. A recent European Union directive, which was transposed into French law in February 2000, requires member states to deregulate their electricity production, transportation and distribution markets. In the new regulatory environment, a growing number of electricity users will be allowed to deal with the power provider of their choice. At the European Summit on Market Liberalization held in March 2002, European leaders issued a joint statement that "the Council and Parliament will adopt, as soon as possible in 2002, proposal permitting European consumers other than

individual homes to freely choose their [power] provider from 2004." We believe that this evolving regulatory environment presents a major opportunity for companies that can provide integrated energy services and that through a combination of our energy, industrial utilities and facilities management services operations and EDF's power generation assets, we will be well placed to take advantage of it.

Pursuant to Dalkia's agreement with EDF, EDF acquired in December 2000 and January 2001 a 28% stake in Dalkia in exchange for a contribution of approximately €850 million. In early 2001, EDF obtained an additional 6% interest in exchange for contributing one of its subsidiaries to Dalkia. In addition, Dalkia purchased certain energy services operations of EDF for €103 million, and EDF purchased interests in two of Dalkia's subsidiaries for a total of €627 million. As the deregulation process continues and limits on EDF's ability to provide energy services are further removed, we have agreed that EDF's stake in Dalkia will eventually rise to 50% (on financial terms that are based on the then market value of Dalkia).

Dalkia provides its energy services primarily through three subsidiaries: Dalkia France, Dalkia International and Edenkia. Because EDF has retained a monopoly on providing power in France to individuals and to businesses that use less than 16 gigawatts of electricity per hour, EDF is prohibited from providing integrated energy services to those customers. Such customers are therefore served by Dalkia France, an entity owned 100% by Dalkia. EDF is not represented on the board of directors or management of Dalkia France. Dalkia International serves foreign customers that are eligible to purchase integrated energy services. EDF owns 24% of Dalkia International. The third subsidiary, Edenkia, provides customized integrated energy services, including supply and management of energy at each site, to eligible industrial and commercial customers in France and to strategic clients in other countries.

The strategic partnership with EDF contributes to strengthen the spirit of service that characterizes Dalkia. In addition, Dalkia's ability to customize its service offerings is greatly enhanced by the complementary expertise of each of our other operating divisions. Dalkia's extensive international network enables it to accompany its clients in their international expansion and to offer the same quality of service through local teams. The broad range of services offered by Dalkia enables its clients to optimize their energy management from the production of energy through the operation of systems and equipment maintenance.

The following table shows the consolidated revenues and operating income of our energy services operations in each of the last three fiscal years, after elimination of all inter-company transactions:

Energy Services (€ millions)	2001	2000	1999
Revenue	4,017	2,988(1)	2,671(1)
Operating income	224	191	169

(1) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

Public authorities represented 59% of Dalkia's revenue in 2001, with the remaining 41% reflecting revenue generated by services to industrial customers.

Dalkia's main goals are to strengthen its leadership in its core energy services business, particularly by seeking to obtain the approval in 2002 of a 100% increase in its 2001 research and development expense budget, to accelerate its international development by offering services of the same quality through local teams, and to continue to develop its services for industrial customers, principally through its "energy supply plus services" offering on a global scale as a result of its strategic partnership with EDF.

We provide the following energy services:

- *Energy Management*

  Energy management consists of operating heating and cooling systems to provide comfortable living and working environments and redesigning and operating existing energy systems to maximize their efficiency. Dalkia manages some 55,000 heating systems in France and 10,000 elsewhere in Europe, representing 65,000 heating systems in Europe. Dalkia provides integrated energy services, including in

most cases system construction and improvement, energy supply, system management and maintenance, to about 40,000 private, industrial, commercial and residential customers.

Dalkia is also Europe's leading operator of large "district" heating and cooling systems. In district systems, thermal energy is generally produced centrally and distributed through pipes to dispersed locations. Dalkia does not ordinarily own the systems it operates. Rather, in most cases, public authorities own the systems and delegate to Dalkia the responsibility of building, managing, maintaining and repairing them. The systems operated by Dalkia heat and cool a wide variety of public and private facilities, including schools, hospitals, office buildings and residences.

Dalkia currently manages more than 250 district heating and cooling systems in Europe, mainly in France, the United Kingdom, Germany, Italy and central and eastern Europe. In France, Dalkia operates 180 district heating and cooling systems, about half of those in existence. Dalkia continued to strengthen its presence in Italy with the acquisition of SIRAM, the second largest Italian heating management company, for €108 million in 2001. SIRAM possesses an undisputed expertise in the management of complex contracts with public and commercial clients, particularly in the health industry. Dalkia is also expanding rapidly in central Europe. For example, in 2001 Dalkia acquired, in the Czech Republic, a majority interest in two co-generation plants (with a total generation capacity of 594 thermal MW) that supply the heating network of the city of Usti Nad Labem, located to the north of Prague, and won a 7-year electricity supply contract with SCE, the Czech electricity distribution company. Dalkia has also held majority interests in two major participants in the Czech district heating market since 1998. As a result of these acquisitions, according to Bohemia Invicta, a Czech industry association, Dalkia is currently the leading heat producer and the second largest power producer in the Czech Republic. In addition, Dalkia has set up a number of energy services companies in central and eastern Europe, in many cases in partnership with the European Bank for Reconstruction and Development. These companies include Prometheus RT (Hungary), Dalkia Romania Srl (Romania), UAB Litesko (Lithuania), Dalkia Termika S.A. (Poland), Dalkia a.s. (Slovakia) and AS Eraküte (Estonia).

Dalkia offers innovative multi-energy and remote management solutions to ensure cost effectiveness, reliability and environmental protection. When practicable, Dalkia uses renewable energy and alternative energy sources such as geothermal energy, biomass (organic material), heat recovered from household waste incineration, "process" heat (heat produced by industrial processes) and thermal energy produced by co-generation projects.

According to a study by the French Ministry of Economy, Finance and Industry based on 2000 data, Dalkia is the French leader in co-generation (the simultaneous production of electricity and heat) and on-site power production. Under a typical co-generation contract, Dalkia provides a governmental or private customer with heat at a favorable price in exchange for the right to produce electricity through co-generation on the customer's premises. French law requires EDF to purchase co-generated power at specified rates. Dalkia sells EDF the power it produces through co-generation under a 12-year contract. Dalkia's total electric power production capacity (including co-generation facilities, peaking plants and stand-by generating units) is 3,000 MW in Europe, including 2,000 MW in France.

- *Industrial Utilities*

Dalkia started providing industrial utilities services several years ago as many of its customers were beginning to outsource non-core industrial activities such as the production and distribution of steam heat and compressed air. Dalkia has become a leading provider of industrial utilities services in France and the United Kingdom, and has developed expertise in the analysis of industrial processes, productivity enhancement and the operation, maintenance and servicing of equipment. Dalkia's expertise and services offerings were increased in 2001 with the integration of Clemessy, an industrial services subsidiary of EDF, into Dalkia's industrial utilities business and the creation of Dalkia Technologies, in which Dalkia holds a 67% interest, through an alliance with Faure Ingénierie, a French company specializing in the design, construction and operation of controlled-atmosphere and clean room facilities. Dalkia Technologies provides services relating to the design and operation of controlled-

atmosphere and clean room facilities for computer, electronics, food processing, chemical and pharmaceutical companies.

In 2001, Dalkia won a contract to build and operate for 15 years a new energy co-generation plant for Astra Zeneca in Macclesfield, United Kingdom. With a capacity of 23MW, this new plant is expected to commence operating at the end of 2002 and will supply steam and electricity to Astra Zeneca's pharmaceutical production facilities. Because this new plant will operate using natural gas, which is a "clean" fuel supply, it is expected to contribute significantly to the reduction of carbon emissions in accordance with the objectives of the Kyoto protocol.

In addition, in December 2001 Dalkia entered into an energy and industrial services contract with Videocolor, a subsidiary of Thomson Multimedia, which operates a technology-intensive plant in Anagni, Italy, that produces approximately 3 million cathodic tubes for screens and televisions each year. In connection with the outsourcing by Videocolor of its energy generation activities and industrial services, Dalkia acquired the tri-generation plant (with a capacity of 12MW) that generates electricity, heat and cold air for Videocolor's production processes and entered into a services contract with Videocolor for 10 years (with expected total revenue of €93 million).

Dalkia and EDF are also developing a broad range of comprehensive energy solutions for eligible industrial and commercial customers that combine power generation with industrial services, which Dalkia and EDF believe will be increasingly demanded by our customers. In 2001, Dalkia and EDF jointly created Edenkia, through which they aim to enable eligible customers to improve the performance of industrial sites in terms of management of energy, cost and production efficiency. Shortly after its creation, Edenkia was awarded a contract by the French Ministry of Defense for the management and maintenance of electrical heating and cooling systems at its "Cité de l'Air" site in Paris, which houses the French Air Force's headquarters, to reduce energy costs, improve the reliability of electricity distribution and upgrade and optimize the operation and maintenance of facilities (with expected total revenue of €5.5 million over 3 years).

- *Facilities Management*

  In a further response to the increasing popularity of outsourcing, Dalkia has recently added facilities management to its portfolio of services. The support services Dalkia offers range from electrical and mechanical equipment maintenance to secretarial services.

Dalkia provides energy services to both public and private customers. Dalkia's public customers include public authorities in suburban Paris, Lyon and Nice (France), London (UK), Ostrava (Czech Republic), Bratislava (Slovak Republic) and Tallinn (Estonia). We also won contracts in 2001 to provide energy services to public authorities in the cities of Vilnus (with expected total revenue of €1.3 billion over 15 years) and Alytus (with expected total revenue of €200 million over 15 years) in Lithuania. Industrial and commercial customers include international groups such as Eurolysine (Ajinomoto group), Michelin, Renault, Smurfit, Solvay and Unilever. Dalkia's facilities management customers include public institutions and private firms including Alstom, Bull and Philips France. Dalkia also provides, in association with Vivendi Water, residential services to individuals through Proxiserve, a joint French subsidiary of Dalkia and Vivendi Water, which provides heating, air conditioning and plumbing services to individuals. The primary market for Dalkia's energy services is Europe. Latin America is potentially an important market for Dalkia's facilities management business, as is the Asia/Pacific region for its heating and cooling system activities.

The majority of Dalkia's energy services contracts involve heating systems management. Contracts to operate district heating systems are typically long-term, lasting up to 20 years. Contracts to operate other heating systems for public or private clients may last up to 16 years. Industrial utilities management contracts usually expire after three to five years, but occasionally run as long as 12 years if Dalkia provides co-generation services as well. We estimate that contracts in the facilities management sector are generally in the three- to five-year range. The average remaining term of Dalkia's energy services contracts is approximately seven years.

Transportation

With 49,000 employees around the world, Connex, our main transportation subsidiary, is the leading European private operator of ground passenger transportation services. Connex operates 236 rail and road networks in 20 countries (compared to 14 countries in 2000) and provides integrated and customized transportation solutions involving bus, train, tramway, metro, maritime and other complementary networks.

The following table shows the consolidated revenues and operating income of our transportation operations in each of the last three fiscal years, after elimination of all inter-company transactions:

Transportation (€ millions)	**2001**	**2000**	**1999**
Revenue	3,099	3,131(1)	2,416(1)
Operating income	112	105	94

(1) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

Public authorities represented 95% of our transportation revenue in 2001, with the remaining 5% corresponding to services to industrial customers.

Connex operates road and rail passenger transportation networks under contract with national, regional and local transit authorities. The public authority with which Connex contracts generally owns the infrastructure Connex uses and typically establishes schedules, routes and fare structures for the networks that Connex operates and manages. The fares Connex charges passengers on its transportation networks are usually insufficient to cover its costs, and the public authority typically provides Connex a guaranteed minimum revenue payment or pays Connex a subsidy. Connex is also beginning to develop its rail freight operations with industrial and commercial clients by leveraging its experience in the operation of transportation networks and the relationship with industrial and commercial customers established by other operating divisions of our company. Connex seeks to increase profitability by reducing its operating costs and increasing traffic through improvements in system speed and reliability, service customization and vehicle comfort and safety. Connex also tries to reduce costs by rationalizing previously government-run operations.

The vast majority of Connex's transportation customers are the national, regional and local public authorities responsible for providing public transit services, which have been outsourcing the operation and maintenance of public transportation systems on a more frequent basis in recent years. In France and, increasingly, in other countries, contracts are usually based on the delegated public service management model. In France, recent legislative changes have implemented a policy of regionalization of transportation systems, under which French regional public authorities have increasing autonomy on the management of transportation services. In the United Kingdom, private operators run transportation networks under franchise agreements. The rail transportation network in the United Kingdom is regulated by the Strategic Rail Authority, which has broad power to impose rules regarding schedules, fare structure and safety. Ordinarily, Connex's rail contracts last up to 20 years, while its road contracts typically last from four to 12 years, a disparity mainly due to the greater investment required in the rail transportation sector.

Connex has contracts with over 4,200 public authorities to operate 236 rail and road networks (including 26 rail networks ranging from urban underground systems to regional networks), 20 integrated networks and 6 tramway networks. Connex expects that the outsourcing trend by public authorities will continue in the near future, particularly in Europe as European Union institutions are considering issuing regulations within the next two to three years that would require member states to introduce regulated competition in the provision of transportation services through the use of the delegated public service management model.

In France, Connex expects that its transportation network will be strengthened with the recent acquisition of the Verney transportation group in 2002. In Europe, Connex expects that the development of transportation services will continue in Northern and Eastern Europe, where the critical mass required for profitable operations has been reached. Connex also expects to capitalize the synergies between our different operating divisions in Germany, which is the most important European market with the largest European public transportation network, and in the

United States, where we expect to leverage the expertise acquired in the management of transportation networks for large European cities.

Connex's main goal is to promote public transportation by continuously enhancing quality of service and developing less expensive pricing formulas for public authorities. Connex hopes to extend this concept of public transportation at competitive prices to Latin American and Asian cities. On a global scale, Connex seeks to improve the profitability of its networks through increased control over operating costs.

- *Urban Transportation*

  Connex operates a number of "right-of-way" transit systems and bus networks and provides integrated services and alternative services. Connex operates 13,500 road vehicles and is responsible for driving, inspecting, cleaning and providing security on these vehicles, marketing, providing customer service, and maintaining, cleaning and providing security in the stations on its networks.

  Right-of-way system operation. Connex operates tram and light rail lines in cities including Stockholm (Sweden), Sydney (Australia), Görlitz and Berlin (Germany) and Rouen and Saint-Etienne (France). Connex also operates a high frequency right-of-way bus route in Bogotá, Colombia that currently services approximately 700,000 people each day. This route has been specifically designed to improve traffic conditions in large cities in developing countries.

  Bus network operation. Connex is the exclusive bus operator in a number of French cities, including Nice, Bordeaux, Nancy and Toulon as well as 40 other cities in France. Connex also operates lines in other European cities including London, Stockholm, Frankfurt and Warsaw, and was recently awarded a contract to operate the bus network in Maastricht, The Netherlands, for 6 years (with expected average annual revenue of €25 million).

  Integrated services. Connex provides combinations of bus, tram, metro and train services in many cities on an integrated basis using coordinated ticketing systems. In Stockholm, for instance, Connex operates the metro, four tram lines and 20% of the bus network, all as part of a single system. In 2001, Connex was awarded a contract to operate a tramway network under construction in Barcelona, Spain with two local bus network operators in an integrated tram and bus transportation system. In other cities, Connex provides unimodal services that are integrated into a system served by multiple operators. Connex provides such integrated services in areas including suburban Paris, Rouen, London, Stockholm (operation of the Lidingöban network comprising the metro and other public transportation means, where Connex has agreed to guarantee punctuality, cleanliness, information and traffic increase), Sydney and Düsseldorf and was awarded contracts in 2001 to provide integrated tramway, trolley and bus transportation services in Görlitz, Germany and Saint-Etienne, France.

  Alternative services. In a number of cities, Connex provides innovative, non-traditional transportation services to supplement conventional services. For example, Connex currently provides transportation-on-demand services through "Créabus," a minibus tracked by a global positioning system ("GPS") that replaces large buses during off-peak hours, and pedestrian-zone transportation services through "Iciéla", a transportation system that uses small electric cars to serve urban areas that are restricted to other vehicles. The "Créabus" service has been successfully introduced in Dieppe, Montluçon and several cities in the Ile de France department, in France, and the "Iciéla" system is currently being used in Amiens and Melun in France.

  Connex also entered the urban transportation services market in the United States in 2001 with the acquisition of Yellow Transportation for €21.8 million, a transportation company based in Baltimore, Maryland, which has urban transportation operations in Washington, D.C., the second largest urban area in terms of traffic in the U.S. Connex currently offers urban transportation services in Washington, D.C. through Yellow Transportation's fleet of vehicles. Yellow Transportation has 1,500 employees, operates 1,200 vehicles and carries approximately 7 million passengers each year.

- *Regional transportation*

  Connex provides regional transportation services through the operation of road and rail networks. As with urban transportation services, Connex is responsible for designing, planning, operating, maintaining and providing security on the vehicles and stations it uses in its regional networks, as well as for ticket sales and customer service.

  Rail transportation. Connex's most significant rail networks are in the United Kingdom, Germany, France and Australia. In the United Kingdom, Connex operates regional rail networks serving southern England through its subsidiary Connex South Eastern (under a contract that expires in October 2011). Connex is currently introducing new trains and upgrading existing trains (including by introducing a number of passenger amenities such as air conditioning and telephone and internet access) on the rail networks operated by Connex South Eastern. Another Connex subsidiary, Connex Transport UK, is currently preparing bids for a number of public tenders for the operation of other networks in the United Kingdom.

  In Germany, Connex operates six regional rail networks, representing over 1,000 kilometers of rail lines, in six German states or *Länder*, including the NordWestBahn rail system in Lower Saxony and the NordOstseeBahn rail system in Schleswig-Holstein. In France, Connex operates a number of regional rail networks, covering approximately 850 kilometers, through contracts with local public authorities and Société Nationale des Chemins de Fer (SNCF), the French national railroad company. In Australia, Connex acquired a 50% participation in West Coast Railways, which operates several regional rail networks in the State of Victoria, in 2001.

  Road transportation. In regional road transportation, Connex operates networks in France, Germany, Norway, Sweden, Finland, Belgium, Spain and the Czech Republic. In 2001, Connex acquired 50% of the assets of Combus, a Danish regional bus operator with 580 vehicles, from Arriva plc, a U.K. transportation service provider, for €30 million. This acquisition provided Connex with additional revenue from its Danish operations of approximately €64 million in 2001, representing an increase of 50% in its activities in Denmark. Connex also acquired regional bus networks in Israel, Poland (through the privatization of the Pekaes interurban networks in Sanok and Lancut), Estonia (with the acquisition of AS Liikor, a bus operator based in Tartu) and the Czech Republic in 2001. In The Netherlands, Connex was awarded in July 2001 the privatization of the BBA transportation network in the Brabant region, which transports over 50 million passengers each year through 450 buses over 153 bus lines (with expected total revenue of €700 million over 6 years). BBA, which also operates 160 taxis, employees approximately 1,500 people and generated revenue of €113 million in 2001. As a result of these transactions, Connex believes that its Dutch operations will generate total annual revenue of €170 million in the future.

  In Spain, Connex and FCC have created a joint venture company, Corporación Española de Transporte, to conduct passenger road transportation operations. We expect that Corporación Española de Transporte will be contributed to FCC-Connex, a holding company recently created jointly by FCC and Connex. In 2001, Corporación Española de Transporte acquired Portillo, one of the largest operators of regional transportation services in southern Spain. Corporación Española de Transporte currently provides regional transportation services to over 43 million passengers through approximately 550 vehicles in Spain.

  Through its acquisition of Yellow Transportation in 2001, Connex also offers regional road transportation services in the District of Columbia, Maryland, Virginia and Connecticut in the United States. In December 2001, Connex won two public bids to operate bus networks in Columbia, South Carolina (with 44 vehicles and expected average annual revenue of €6 million) and Fairfax County, Virginia (with 85 vehicles and expected average annual revenue of €7 million during 3 years).

- *Freight*

  Connex recently begun developing rail freight operations, primarily in France and Germany, with the intention of expanding these operations significantly in order to expand our industrial and commercial

client base for our other environmental services and to implement our strategy of providing a complete range of services to industrial and commercial customers. Connex provides rail freight services primarily through the following three activities:

Regional Freight Networks. Connex operates a number of regional freight trains for customers such as the SNCF in France.

Management of private branch lines. Connex manages branch lines for customers in the automobile, petrochemical and refining industries that have plants connected to a national rail network. Facilities served include the Eisenach Opel plant in Thuringia, Germany, the Bitterfeld chemical complex in Saxony-Anhalt, Germany, the Claas agricultural machinery plant in Gütersloh, Germany and approximately 30 industrial and commercial sites in France and Germany.

Multi-modal transportation. Connex began providing multi-modal shipping services (or shipment of freight in containers that can be carried by either trains or trucks) in 2000. Daily multi-modal service between Paris and Milan began in October 2000, following Connex's acquisition of an interest in multi-modal operator TAB and the creation of T3M, Connex's joint subsidiary with TAB. In Germany, service between Ulm, Stuttgart and Mannheim began in February 2001.

In addition, Connex provides its industrial and commercial customers with passenger transportation services for their employees from and to its customers' sites.

- *Information Services*

  Growth in our transportation business depends on increased use of public transportation networks, which in turn is closely related to the quality of service provided by these networks. To increase passenger frequentation on its networks, Connex's efforts focus on adequately matching service offerings with demand for these services, improving the reception of passengers and the user-friendliness of stations, making available more confortable vehicles and the development of local information services relating to transportation systems for travelers.

  Connex has developed "Optio," a complete information system for passengers (through a central telephone operator, internet site, wireless text messages, such as SMS, and wireless internet access, such as WAP) on available public transportation in a region, through which a single representative provides information to the customer on the entire itinerary, regardless of the operator. The Optio service is currently offered in the Oise region in France and in the cities of Bordeaux (France), London (U.K.) and Melbourne (Australia). In addition, Connex has developed "Connector Plus," a real-time information system for Australian subscribers that enables it to notify users of service interruptions or delays through wireless text message systems, such as SMS.

  Connex has also recently launched several Internet sites that allow users to find their itineraries on local transportation systems in France, the United Kingdom and Australia. Connex has also commenced providing real-time information on available transportation systems to its subscribers through internet-enabled mobile phones or WAP mobile phones in the United Kingdom.

Fomento de Construcciones y Contratas (FCC)

FCC, a public company listed on the Madrid Stock Exchange since 1900, is one of Spain's largest companies with over 52,000 employees and a market capitalization of €2.91 billion as of December 31, 2001. FCC operates in a number of different environmental and construction-related industries. FCC's principal markets are located in Spain (where it is the leading waste management operator with a market share exceeding 40%) and Latin America, though it also has significant operations in the rest of Western Europe and the United States.

In October 1998, to exploit the growing demand for integrated environmental management services, Vivendi Universal acquired a 49% interest in the holding company that owns 57% of FCC from the controlling shareholder of the holding company. In December 1999, Vivendi Universal transferred its interest to us. Our partner in FCC owns the remaining 51% of the holding company.

Our interest in the holding company that controls FCC is subject to a shareholders' agreement pursuant to which we share equally with our partner the holding company's right to be represented in the main executive bodies of FCC, i.e., the board of directors and executive committees of FCC and its subsidiaries. The holding company's articles of association also provide that certain important decisions, such as increases or decreases of share capital, amendments to the articles of association, mergers, spin-offs or dissolutions, require supermajority shareholder approval. None of these decisions, therefore, could be taken without the consent of both major shareholders. See "Item 7. Major Shareholders and Related Party Transactions — Related Party Transactions."

The following table shows our consolidated revenues and operating income from FCC's activities in each of the last three fiscal years, after elimination of all inter-company transactions:

FCC (€ millions)(1)	2001	2000	1999
Revenue	2,455	2,115(2)	1,902(2)
Operating income	231	208	185

(1) Figures reflect a 49% share of FCC. Under French GAAP, we proportionally consolidate FCC based on our 49% interest in the holding company that controls it. Under U.S. GAAP, FCC would be accounted for using the equity method.

(2) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "Item 5. Operating and Financial Review and Prospects — Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

FCC's main activities are:

- construction, which represented 45.6% of its 2001 revenue;
- waste management and water services, which represented 30.1% of its 2001 revenue;
- cement production, which represented 15.4% of 2001 revenue;
- transportation services and other activities related to the maintenance of public buildings, parking lots and airports, which represented 4.8% of 2001 revenue; and
- other services (including industrial logistics, air conditioning, vehicle imports and security), primarily through its majority interest in Gruycsa, which represented 4.1% of 2001 revenue.

We have created a number of joint ventures with FCC to operate or participate in different segments of our business, such as Proactiva, in which we have consolidated most of our water and waste treatment businesses in Latin America and the Caribbean with FCC's water and waste treatment operations in these regions, and Corporación Española de Transporte, which operates our transportation business in Spain.

- *Waste management and water services.* FCC is the leading waste management company and the second largest water and waste water treatment company in Spain, where it conducts the bulk of its operations. FCC collects, processes and disposes of household waste and provides a full range of waste management services, including urban and commercial cleaning services, to Spanish public authorities. FCC provides waste management services to approximately 1,500 municipalities in Spain, including the main urban centers such as Madrid, Barcelona, Valencia, Bilbao, Málaga and Zaragoza. FCC's waste management operations currently serve over 21 million people. Typically, in Spain, a private operator disposes of waste in publicly-owned landfills that it manages. There is, however, a growing trend toward the use of incineration plants and recycling of waste. In Barcelona, FCC is currently constructing the first recycling plant in Spain capable of recycling specific types of residential, industrial and commercial waste consisting of electric and electronic products (television sets and computers). FCC expects this plant, which will have an annual recycling capacity of approximately 15,000 metric tons, to commence operations in June 2003.

  Industrial, commercial and hazardous waste collection and treatment, which has traditionally represented a minor portion of FCC's waste management business, was strongly developed in 2001 with the acquisition of Grupo Ekonor, one of the leading Spanish providers of hazardous waste management services, which collects, transfers, recycles, treats and/or disposes of over 150,000 tons of

waste each year around the country, including in the main urban centers such as Madrid, Valencia, Vitoria and Córdoba.

FCC's water and wastewater treatment activities cover the full water cycle, including treatment, distribution and recycling. In 1999, FCC acquired Vivendi Water's Spanish operations, doubling its market share in this sector. FCC provides water services to approximately 300 municipalities in Spain, including urban centers such as Almería, Ávila, Badajoz, Jaén, Lérida, Oviedo, Salamanca and Vigo (with expected total revenue in Vigo of €220 million over 16 years). As the second largest water treatment company, FCC supplies drinking water to 6 million people in Spain and treats wastewater of 9 million people. In 2001, FCC was awarded a number of new service concessions, particularly Blanes in the province of Barcelona, and commenced providing all of its water services under the "Aqualia" name.

Through Proactiva, FCC provides a significant number of water and waste management services to public authorities and municipalities in Argentina, Brazil, Colombia, Chile, the Dominican Republic, Mexico and Puerto Rico. Proactiva serves over 46 million people in these countries. In 2001, Proactiva was awarded a contract to construct and operate a landfill for the treatment of residential waste collected in 23 municipalities in Santiago de Chile, with a population of 1.5 million people, which will have a capacity of at least 45,000 metric tons of waste per month.

- *Construction.* FCC is one of the five leading construction companies in Spain. FCC's projects include the construction of roads, high-speed railway lines, airports, offices, commercial centers and residences. Its projects have included over 100 kilometers of railway lines for the new high-speed train service from Madrid to the French border and a new passenger terminal for Madrid's Barajas international airport, which is expected to cover over 500,000 square meters. FCC has recently obtained several important construction contracts in the context of a new investment plan implemented by public authorities for the construction of transportation infrastructure in Spain. The investment plan forecasts works costing a total of €114 billion, of which up to 18% is to be financed by the private sector through concessions and other mixed systems. In 2001, FCC was awarded the construction of the high-speed train station in Zaragoza and the expansion of the subway systems in Madrid and Barcelona, and is participating in the construction of a new dike for the port of Barcelona.

- *Cement Production.* FCC has a 48.2% interest in Portland Valderrivas, a holding company that owns 58.7% of Cementos Portland, the second largest cement manufacturer in Spain according to the Cement Association Report. Cementos Portland currently operates 6 cement plants in Northern, Northeastern and Central Spain, with a production capacity of over 8 million tons of cement per year. In 1999, FCC began to expand internationally in this segment with its acquisition of Giant Cement in the United States. Giant Cement currently operates 3 cement plants on the East Coast in the United States, with a production capacity of approximately 1.4 million metric tons of cement per year.

FCC also manufactures urban fixtures, manages car parks, provides airport handling and vehicle inspection services in Europe, particularly Spain, Latin America, the United States and, to a lesser extent, North Africa. FCC is also involved in real estate activities in Spain through its 50% interest in Realia. In addition, FCC participates in the industrial logistics and other services sectors (through its approximately 80% holding in Grucysca), in telecommunications through its 31.28% stake with Vivendi Telecom International in Xfera Moviles, a member of the consortium holding a license to provide advanced UMTS mobile telecommunications services in Spain, and the transportation services sector through Corporación de Transporte Española, its joint venture with Connex.

Competition

Most markets for environmental services are very competitive and are characterized by increasing technological challenges, regulatory changes and experienced competitors. Competition in each of the markets we serve is primarily on the basis of the quality of the products and services provided, reliability, customer service, financial strength, technology, price, reputation and experience in providing services, adapting to changing legal and regulatory environments, and managing employees accustomed to working for governmental authorities or non-outsourced divisions of commercial enterprises. In each of the markets in which we operate, our competitive strengths are our high level of technological and technical expertise, our financial position, our geographical reach

and our experience in providing environmental management services, managing privatized and outsourced employees and meeting regulatory requirements.

With regard to integrated, large-scale environmental management services in particular, our main competitors are Suez and RWE. Our primary competitive strength is our demonstrated ability to provide innovative, integrated environmental services that are tailored specifically to the needs of individual clients and offered on a global basis. We anticipate that other enterprises that compete with us in individual sectors will, in the coming years, seek to expand their activities to become integrated environmental management services providers.

Water

Vivendi Water is the world's leading private provider of water services to municipalities and industrial and commercial firms. Its principal competitors are Suez (through its water business Ondeo), RWE (through its U.K. subsidiary Thames Water), Anglian Water, Severn Trent and Saur. Vivendi Water has a prominent position in the European and North American markets and a strong base for growth in Latin America and the Asia/Pacific region, especially Australia and China. Vivendi Water is a leading competitor in the rapidly growing industrial and commercial outsourcing market. Vivendi Water also has a leading position in the highly fragmented water treatment equipment market.

Waste Management

Our waste management operations are carried out mainly in Europe, where Onyx is one of the market leaders in the collection and treatment of household, commercial, industrial and hazardous waste. Onyx's main pan-European competitor is Suez. Onyx ranks among the top providers of household, commercial and industrial waste management services in the United Kingdom, along with Suez, Biffa and Shanks. Onyx also has a prominent market position in France, Norway, Switzerland, Israel, Ireland, Denmark, Portugal and Czech Republic. In Germany, where Onyx focuses on services to industrial and commercial customers, its biggest competitors are RWE Umwelt and Rethmann.

Onyx has taken significant steps toward consolidating its market position in North America through Onyx North America, which provides household, industrial and commercial solid and hazardous waste collection, recovery and treatment services, industrial and commercial services and waste-to-energy services to customers in 30 states in the United States and 3 provinces in Canada. Onyx's major competitors in the United States include Waste Management, Allied Waste, Republic Services and Safety Kleen.

In Latin America, Onyx's operations are concentrated in Brazil, Venezuela, Mexico, Columbia, Argentina and Chile, where it primarily competes with Suez and a variety of local companies. Onyx operates its activities in South America through Proactiva, a joint venture with FCC.

Onyx is one of the leading waste management service providers in the Asia/Pacific region, where its main competitors are Cleanaway, Suez and various local companies.

Energy Services

Dalkia's traditional competitor in district thermal management is Suez through its subsidiary Elyo. Dalkia increasingly faces competition from large European gas and electricity companies such as Tractebel, RWE, E.on, Texas Utilities and Power Gen, especially for large district heating contracts in Eastern and Central Europe and for integrated energy services contracts. Outside France, Dalkia competes with local service providers such as the municipal utilities in Germany, which operate district heating systems and electricity and/or gas distribution systems. Dalkia's competitors in co-generation consist primarily of large utilities companies such as RWE, E.on, Texas Utilities, Endesa, National Power and Power Gen. Dalkia competes primarily with large firms such as Honeywell and Johnson Control for facilities management business.

Transportation

Most passenger transportation companies serve a limited geographic area. Connex's major competitors are companies that provide passenger transportation services in a number of different countries, including Stagecoach, National Express, First Group and Arriva. Connex also competes with local transportation service providers in a number of countries, including Go Ahead in the United Kingdom and Kéolis and Transdev in France. We anticipate

that new competitors may seek to enter the market, including civil engineering companies, rolling stock manufacturers and government-owned operators seeking to expand into contiguous regions.

FCC

FCC is the leading private provider of waste management services in Spain, with a share of the overall market (including the public and private markets) for waste management services of more than 40%. FCC's primary competitor in this market is Cespa. After Aguas de Barcelona, FCC is the leading private operator in the water and waste water treatment market in Spain.

The cement production sector in Spain is relatively concentrated. Through Cementos Portland, FCC is the second largest Spanish cement producer, with approximately 16% of the Spanish market, according to Cement Union — OFICEMEN. Its main competitors are Spanish branches of multinational cement manufacturers such as Cemex, Holderbank and Lafarge. Through Giant Cement, FCC is ranked as the 15th largest cement producer in the United States.

The construction market in Spain has recently undergone a process of consolidation. Five major competitors, one of which is FCC, have emerged. With numerous small companies and a number of larger international companies vying for business, however, the market remains competitive.

Contracts

The vast majority of our contracts to provide individual environmental services are medium and long-term agreements with municipal and industrial and commercial clients. Our contracts vary widely in terms of size, duration and the degree of responsibility and/or risk they impose on our company. Some require us to provide specific services on a one-time basis in exchange for a set fee; others give us broad responsibility for the implementation of large, long-term projects. Some require us to make substantial capital expenditures. Some of our contracts provide mechanisms through which particular risks — for example, the risk that passengers on a transportation network will fall to an uneconomic level — will be shared by our counterparty. Others provide for renegotiation of terms in the event of a material change in circumstances. For example, contracts for outsourced water services typically require us to meet specified service requirements and are usually on a fixed-price basis, subject to adjustments for inflation and other cost increases, while our water treatment equipment and systems services are usually provided under turnkey contracts for design and installation of systems that typically require customers pay a lump sum in several installments based on a predetermined schedule. The duration of a contract, which tends to increase with the level of responsibility and risk we assume, is generally based on the time needed to depreciate the investments made, set in place an efficient organization and achieve the expected improvements in the service provided.

We have a large number of contracts with governmental authorities, particularly in France. Contracts with governmental authorities often differ in a number of respects from contracts with private parties, especially in civil law countries. Governmental contracts for essential community services such as water supply, waste water treatment and household waste treatment typically obligate the private operator to provide a service to a given population, often on an exclusive basis, in accordance with operating conditions, including fees, that are defined by the governmental authority. The private operator also has a contractual relationship with individual service users, but that relationship is defined by the contractual terms established by the governmental authority.

There are a number of features common to French governmental contracts, including provisions that:

- entitle the governmental authority to modify or terminate the contract unilaterally if the public interest so requires. If the contract is so modified or terminated, the governmental authority must fully compensate the private operator. In practice, unilateral termination of a contract by a governmental authority is extremely rare because it generally obligates the authority to pay a substantial indemnity and to find alternative solutions to ensure continuity in the provision of the public service; and
- allow, in long-term contracts, periodic review to ensure it remains fair to both sides.

There are two major types of contracts recognized by European Community law that may be entered into with a governmental authority:

- Concession contracts (also called "delegated public service management" contracts) are awarded by governmental authorities or other entities governed by administrative law. Under a concession contract, the private operator provides the public a service in return for fees or rates paid by the users of the service, the private operator assuming all managerial responsibility and financial risk. The private operator is generally responsible for maintenance of the plant and equipment used in providing the service. The private operator is typically required to construct the necessary facilities (and to finance the construction), but ownership of the facilities generally reverts to the governmental authority at the end of the contract. During the life of the contract, the private operator holds the facilities in its books as fixed assets and depreciates them over the life of the contract. A concession contract in which the private operator is not required to invest in (but only to maintain and refurbish) the facilities it uses is typically referred to in France as an "*affermage*" contract.

- Under a public procurement (or *marché public*) contract, the private operator agrees to provide a service for a set fee that is paid by the governmental authority. Public procurement contracts are typically used when the governmental authority itself is the recipient of the services provided, or when the governmental authority desires the support of a private operator in providing public services.

Under French law, neither concession nor public procurement contracts can be awarded without competitive bidding. European Community law, however, requires competitive bidding only for public procurement contracts and contracts for building, financing and operating facilities. Nevertheless, it is becoming increasingly common across Europe for contracts–especially major contracts–between governmental authorities and private operators to be awarded only after competitive bidding, even where it is not required.

The criteria used by public authorities to assess competitive bids include price, the investments candidates offer to make, the candidates' experience and ability to provide high quality service while complying with applicable regulatory standards, and the candidates' ability to adapt to new regulatory standards. Regulatory authorities ensure that public authorities delegating public services adhere strictly to applicable regulations. Those authorities may also invalidate a contract several years after it is entered into if those regulations have been violated (although the private operator is entitled to compensation in the event of such invalidation).

The duration of public contracts depends primarily on the size of the investments to be made. Although European Community law does not limit the duration of contracts with municipal authorities, French law provides that a contract may not exceed the period over which the private operator depreciates the investments it makes, if any. Accordingly, concession contracts typically last about 20 years, and *affermage* contracts usually last around 12 years. Management contracts with limited risks do not generally exceed five years.

Private operators are accountable to several governmental authorities with regard to the services provided. In some instances, these authorities may publish statements critical of the private operator's performance.

Outside of France, other countries with civil law systems, such as Spain and Italy, have adopted the French system of delegated management of public services. Public authorities in these countries typically delegate services to private operators through contracts similar to concession, *affermage* or public procurement contracts.

In common law countries such as the United Kingdom and the United States, the law governing public contracts is less rigid than in civil law countries, and the types of contract under which public authorities in such countries delegate the operation of services are more varied. Among the types of contract common in such countries are build-operate-transfer contracts, under which the private operator undertakes to construct and operate the requisite facilities and assumes an obligation to transfer the installation to the public authority at the end of the contract; franchise contracts, which require the contractor to invest in equipment and to operate the service in accordance with specifications established by a regulatory body; and service contracts, under which the operator makes no investments and operates the service for a fixed fee and/or a share of the profit generated.

There is a growing trend in both developed and developing countries to adopt systems similar to the delegated public service management system used in France. We believe that our experience with the French system gives us a competitive advantage.

Environmental Regulation and Policies

Environmental Regulation

Our businesses are subject to extensive, evolving and increasingly stringent environmental regulations in developing countries as well as in Western Europe and North America.

Water

The water and waste water treatment industries are highly sensitive to governmental regulation. In Europe and the United States, governments have enacted significant environmental laws at the national and local level in response to public concern over the environment. The quality of drinking water and the treatment of waste water are increasingly subject to regulation in developing countries as well, both in urban and rural areas.

The quality of potable water is strictly regulated at the European Union level by the Directive on Drinking Water, which was transposed into French law in December 2001. The collection, treatment and discharge of urban, industrial and commercial waste water is governed by the Directive on Urban Waste Water. Public authorities also impose strict regulations upon industrial and commercial waste water that enters collection systems and the waste water and sludge from urban waste water treatment plants.

France has numerous laws and regulations concerning water pollution, as well as numerous governmental agencies involved in the enforcement of those laws and regulations. Certain discharges, disposals, and other actions with a potentially negative impact on the quality of surface or underground water sources require authorization or notification. For instance, public authorities must be notified of any facility that pumps underground water in amounts that exceed specified volumes and French law prohibits or restricts release of certain substances in water. Individuals and companies are subject to civil and criminal penalties under these laws and regulations.

In the United States, the primary federal laws affecting the provision of water and waste water treatment services are the Water Pollution Control Act of 1972, the Safe Drinking Water Act of 1974 and related regulations promulgated by the Environmental Protection Agency (EPA). These laws and regulations establish standards for drinking water and liquid discharges. Each U.S. state has the right to establish criteria and standards stricter than those established by the EPA and a number of states have done so.

Waste Management

In numerous countries, waste treatment facilities are subject to laws that require us to obtain permits to operate most of our facilities from governmental authorities. The permitting process requires us to complete environmental impact studies and risk assessments with respect to the relevant facility. Landfill operators must provide specific financial guarantees (which typically take the form of bank guarantees) that cover the monitoring and recovery of the site during, and up to 30 years after, its operation. Operators must comply with standards for landfills. Incineration plants are usually subject to rules that limit the emission of pollutants.

At the European Union level, the framework for waste management regulation is provided by directives that set overall regulatory goals of waste prevention, collection, recycling and reuse. European Union member states must prohibit the uncontrolled discarding, discharge and treatment of waste. Entities that store or dump waste for another party must obtain an authorization from the relevant authority that prescribes the types and quantities of waste to be treated, the general technical requirements to be satisfied and the precautions to be taken. Regulatory authorities frequently check compliance with those requirements. Additionally, specific European Union directives govern the operation of landfill sites, the collection and treatment of hazardous waste, and the operation of municipal waste-to-energy and incineration plants.

In France, pursuant to the provisions of the Environment Code relating to facilities registered for the protection of the environment, decrees and ministerial and administrative orders establish standards for treatment sites for household, industrial, commercial and hazardous waste. These orders govern, among other things, the design and the construction of waste treatment centers. Hazardous waste is subject to strict monitoring at all stages of the treatment process. Waste-to-energy centers are subject to concessions that limit the amount of pollutant emissions of each center.

Our U.K. waste management operations and facilities are subject to the Environmental Protection Act of 1990, which requires local authorities to transfer their waste treatment operations either to a specialized waste treatment entity owned by the local authority or to a private contractor, and the Environment Act of 1995, which addresses pollution control, land waste and nuisances. We are also subject to the Pollution Prevention Control Act of 1999, which implements the requirements of European directive 96/61/EC relating to integrated pollution prevention control.

The major statutes governing our waste management activities in the United States include the Resource Conservation and Recovery Act of 1976, the Clean Water Act, the Toxic Substances Control Act, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (also known as "CERCLA" or "Superfund"), and the Clean Air Act, all of which are administered either by the EPA or state agencies to which the EPA delegates enforcement powers. Each state in which we operate also has its own laws and regulations governing the generation, collection and treatment of waste, including, in most cases, the design, operation, maintenance, closure and post-closure maintenance of landfills and other solid and hazardous waste management facilities. In order to develop and operate a landfill, transfer station, hazardous waste treatment/storage facility or other solid waste facility, we must typically undergo several difficult governmental review processes and obtain one or more permits that may not ultimately be issued.

In view of the fact that the waste management business is subject to risks of liability for property damage and personal injury caused by pollution and other hazards, we carry insurance policies covering what we believe to be the most important casualty risks. However, we cannot provide assurance that the coverage provided by these policies will be sufficient to cover any liability to which we may be subject. See "Item 3. Key Information — Risk Factors."

Energy Services

Our energy-related activities in Europe (primarily the supply of thermal and independent energy) are subject to a European directive that establishes emission limits for sulphur dioxide, nitrogen oxides and dust and regulates the construction of combustion plants. The European Parliament is considering an amendment to this directive that, if adopted, would impose emission thresholds twice as strict as those currently in effect. The new thresholds would apply to all new installations put into operation after a date that is yet to be determined. Other existing directives require the implementation of national emission ceilings for certain atmospheric pollutants such as sulphur dioxide, nitrogen oxide, volatile organic compounds and ammonia.

The use of gas and other combustible material in France is subject in some instances to a domestic natural gas tax. Energy produced by a co-generation facility is exempt from this tax for a period of five years after the facility begins operations. The law providing for this exemption was renewed in 1999; any co-generation plant we build before 2004 will therefore be eligible for the exemption.

Transportation

Our transportation service activities are subject to a number of European Union directives that limit emissions from petrol and diesel engines and require us to obtain certain permits. One directive sets forth guidelines for the laws of the member states with respect to the emissions of gas pollutants from diesel engines used in vehicles. Another directive sets forth guidelines for the laws of the member states with respect to emissions of gas and particulate pollutants from internal combustion engines installed in mobile equipment other than road vehicles. Stricter limitations on emissions of pollutants were adopted by the European Commission in October 2001, with further limitations expected to be adopted in 2005 which will require the installation of sophisticated fuel injection systems with particle filters and carbon catalysts.

Environmental Policies

Our mission is to contribute to the enhancement of quality of life where we are present. As the leading provider of environmental management services in the world, we face the global need for development and have placed the challenges of durable development at the heart of our strategy. To this end, we do not focus only on the preservation of the environment and the protection of natural resources, but also assume our economic and social responsibilities, particularly at a local level where we are committed to stimulating progress. Our environmental policies are described in our "2001 Report for a Responsible Service Commitment to the Environment and Durable Development" that our company has published.

Durable development as a corporate value. We believe that development will not be durable if it conflicts with economic growth and quality of life. We have raised the notion of durable development into a common value for all of our 295,000 employees. Although the nature of our activities is oriented to the protection of the environment, we attempt to go beyond our professional expertise and are committed to development for the good of future generations. We have adopted a "Charter for Durable Development" setting forth our ten main commitments in this area, as well as practical methods of implementation of these commitments in our day-to-day operations. We created an Environmental Management System in 2001 to implement action plans adapted to specific designated challenges. We intend to reinforce this system in 2002 with the adoption of quantitative targets that will allow us to measure our progress in this area.

Preserving ecological balances. Whether through the limitation of water dissipation, the enhancement of the quality of our waste, the use of alternative energies in our heating operations, the recovery and treatment of biogas emissions at our landfills or the use of low-emission fuels in our fleet of vehicles, our company has raised to the challenge of the main environmental problems currently affecting our planet by applying our excellent know-how, technological capabilities and research potential to these problems. We contribute to the enhancement of quality of life and sanitary conditions of local populations in our day-to-day operations. For example, by supplying potable water to impoverished areas we help to reduce infant mortality, as more than 2.5 million children die each year due to lack of access to potable water. Improvements in waste management also have a positive impact on quality of life and on human health. As a result, environmental management services can be an important factor of accelerating a sociological revolution.

Preserving economic and social balances. We also consider the economic and social factors that underlie the course of development in the countries in which we operate, and we work to develop solutions that are adapted to local constraints and know-how transfers. For example, we have developed integration strategies in Tianjin, China, that have allowed our local employees to better understand the challenges in the provision of water services. We give preference to a partnership approach with non-governmental organizations (NGOs), local authorities and associations in the implementation of action plans for the population of emerging countries, which permits the development of model plans that can be reproduced. In each of our projects, we seek to create a beneficial and educational dimension for the improvement of public health. For example, in Durban, South Africa, we have a launched a series of initiatives in partnership local NGOs and under the supervision of the World Bank to promote education on public health and hygiene in order to ensure a better use of water. At a seminar held in December 2001 in Durban in which we and over 70 mayors and environmental directors from around Africa participated, we agreed to continue to pursue our local activities by training customer service representatives to provide mostly educational and social services, particularly disseminating best practices relating to water and waste.

We also launched the Aquadev world network in 2001. The goal of this network is to allow interested parties to exchange information and experiences on water problems in impoverished areas of the planet and to propose answers to questions relating to environmental matters, including how to supply water to populations respecting the different economic constraints and using local associations, and the nature of the role of NGOs in the development of these services.

In addition, we entered into an alliance with the Australian Antarctic Division (AAD) in 2001, which manages the activities of the Australian government in the Australian zone of Antarctica, to participate in the preservation of Antarctica. Pursuant to this alliance, we have agreed to provide the AAD with our know-how and 240 special containers at no cost to enable the collection of approximately 300,000 tons of waste. We expect that this partnership will last for at least 10 years and that it will be extended to other zones of the Antarctic region.

The Vivendi Environnement Institute: a tool for durable development. Human management of the environment represents a major challenge that requires the mobilization of a large number of resources, the support of the public at large and close cooperation among international, national and local participants. To address this challenge, Vivendi Environnement created in 2001 the Vivendi Environnement Institute to encourage prospective reflection on a number of issues relating to durable development, as well as progressively shed light on the principal trends that will influence the provision of environmental management services over the next decade.

Through its Prospects Committee, which is exclusively composed of individuals of international reputation and standing, the Vivendi Environnement Institute benefits from the contribution of leading external expertise on

different key subjects (including public health, economy and human sciences) while maintaining a presence in the daily realities through our company's different activities. This dual capability represents both the originality and the strength of the Institute, which intends to be at the heart of the main environmental debates and issues of the 21st century. The main themes to be considered within the Institute, which are guided and defined by the members of the Prospects Committee, will include sanitary norms, the combat against the greenhouse effect and urban development. The work of the Institute should permit the creation of a platform for dialogue and exchanges on the main environmental, social and economic issues in the near future to respond to the expectations of the public. As of the date hereof, the members of the Prospects Committee are:

- Amartya Sen, economist, winner of the Nobel Prize for Economics in 1998 and a distinguished professor of economics at Trinity College, Cambridge, and of philosophy at Harvard University,
- Hélène Ahrweiler, historian, President of the University of Europe and an expert for UNESCO on human and social sciences,
- Philippe Kourilsky, biologist, President of the Pasteur Institute in Paris, France, Director of Research at the *Centre nationale de recherche scientifique* (CNRS) and professor at the Collège de France,
- Pierre-Marc Johnson, attorney, ex-Prime Minister of Quebec, Canada, and expert on environmental matters, and
- Harvey Fineberg, President of the Institute of Medicine of the United States.

Intellectual Property

We currently own a significant number of patents in France, the United States and other countries around the world. Although we believe that the patents and trademarks associated with our various operations are of value, we do not consider any of them to be essential to our business.

We use the trademark "Vivendi Environnement" under the terms of a trademark license agreement with Vivendi Universal. See "Item 7. Major Shareholders and Related Party Transactions–Related Party Transactions."

Property, Plants and Equipment

We rent a building located at 36-38 avenue Kléber, 75116, Paris, France for use as our headquarters building. We are making certain improvements to the building, which are expected to be complete by May 2002. We will occupy approximately 15,000 square meters of the building, using it for offices for members of our management and senior managers of our principal subsidiaries.

We generally conduct our water treatment, waste management, energy services and transportation operations at premises owned by our customers; as a result, we do not own any important physical properties in connection with those operations. In connection with our waste management services, Onyx owns or operates approximately 184 sorting, recycling and transfer facilities, 140 solid waste landfill sites and 68 waste-to-energy and incineration facilities worldwide. Onyx owns approximately two-thirds of the solid waste landfill sites it operates.

In our transportation business, governmental authorities in France typically own the buses used on urban networks and lease them to Connex under the applicable operating contract. However, Connex usually owns the buses used on regional road networks. In the other countries in which we operate, Connex typically owns the buses used in both urban and regional road networks. With regard to rail networks, Connex usually rents, rather than owns, the trains it uses. In Sweden, for example, Connex operates the Stockholm metro under contract with the local transit authority, which owns the trains. In the United Kingdom, the trains are owned by rolling stock companies. In Germany, the trains are owned either by regional authorities (*Länder*) or by the local operator.

Marketing Channels

We market our products and services primarily by taking advantage of our reputation and by continuously offering to provide a more comprehensive range of environmental services to existing clients. We analyze the environmental service needs of prospective and existing industrial and commercial customers and demonstrate to them how our services could improve the efficiency of their operations. The marketing efforts we direct toward

public authorities comes primarily in the form of bids we submit for contracts to provide public services. See "— Contracts." For more information regarding marketing channels used by each of our business segments, see "— Our Services."

Seasonality

Because of the nature of our operations and our worldwide presence, our business is typically not subject to material seasonal variations.

Raw Materials

We purchase raw materials on a worldwide basis from numerous suppliers. We seek to accumulate and maintain a reserve inventory of raw materials and supplies, qualify new suppliers, and develop production processes in our own facilities. We undertake to secure strategic materials through medium-term and long-term contracts. We have not experienced difficulties in obtaining sufficient amounts of raw materials and supplies in recent years and we anticipate that we will be able to do so in the future. The price of raw materials and supplies may vary substantially in the future. For example, the price of fuel has, in recent years, exhibited considerable volatility. Significant increases in fuel prices are possible in the future as a result of increased demand, greater coordination among oil-producing nations and other factors. Our operations historically have not been, and are not expected to be in the future, materially affected by changes in the price or availability of fuel or other raw materials, as our contracts typically contain provisions designed to compensate us for increases in the cost of providing our services.

Insurance

All of our operating divisions (water, waste management, energy services and transportation) maintain damage insurance policies that cover the assets and facilities that we own as well as those for which we have contractual responsibility. These pc'icies typically provide for deductibles of €1 million for significant losses and of €100,000 to €500,000 for all other losses. We are currently setting up an excess coverage line of €100 million, which may be increased to up to €200 million for certain new sites, including, for example, Vivendi Water's Mery-sur-Oise site and Onyx's Halluin and Rouen sites in France, and our Taho site in Taiwan and our MST site in the Czech Republic.

Our operating divisions also maintain business loss policies for certain activities, which cover losses on assets and facilities that we own as well as those for which we have contractual responsibility. These policies are taken out in respect of large outsourcing contracts under which we do not have complete control over the regularity of services and volumes that are entrusted to us under these contracts.

Our main subsidiaries outside France, particularly in the United States, have coverage under damage and civil liability insurance policies that provide separate coverage in amounts ranging from US$ 50 million to US$ 250 million annually depending on the nature of the activity. Moreover, our rail transportation operations are covered by a specific civil liability program with a dedicated pool of 155 million British pounds.

Our operating divisions are also covered by a general civil liability policy that covers up to €30 million per insurable event, limited to €60 million on an annual basis, with a deductible of €30,000 per insurable event. In addition, because the coverage threshold of this policy for our subsidiaries outside France amounts to €1.5 million, we control the triggering of any guarantee greater than this amount. In light of the increase in insurance costs as a result of the major events at the end of 2001, and particularly the terrorist attacks in the United States on September 11 and the accident at the AZF plant in Toulouse, France, on September 21, we launched an international civil liability insurance program to enhance our protection regarding catastrophic events, optimize our insurance costs, simplify the management of our insurance coverage and adopt a global approach regarding insurance protection with coherent guarantees throughout all of our operating divisions.

In addition, we and Vivendi Universal have jointly entered into a civil liability excess policy that provides all of our subsidiaries with coverage of up to U.S.$400 million. We also maintain a joint policy with Vivendi Universal covering management liability for all of our subsidiaries in an amount of U.S.$200 million.

We also maintain a specific policy covering civil pollution and environmental liabilities that provides all of our operating divisions with coverage of up to €30 million per insurable event each year.

Some of our important activities outside of France are covered by damage, business loss and civil liability policies that we are required to maintain either by contract or by the institutions that finance these activities. In addition, some investments abroad are covered by political risk policies with the Compagnie d'Assurance Française pour le Commerce Exterieur (COFACE).

ORGANIZATIONAL STRUCTURE

Our company is divided into four operating divisions corresponding to each of our four business segments and a number of centralized corporate departments that lead and coordinate the actions of teams present in each of the four operating divisions. Each of our operating divisions has one representative on our management board. We believe that this organizational structure encourages the coherent development of our group by reinforcing its identity, maintaining solidarity and cohesion, favoring economies of scale and encouraging professionalism through the sharing of best practices.

See "— History and Development of the Company" and "Item 7. Major Shareholders and Related Party Transactions — Major Shareholders" for a description of the history of the creation of our organizational structure.

RESEARCH AND DEVELOPMENT

Research and development is a critical component of our ongoing effort to provide our customers with cost-effective and environmentally sound products and services. Through our Research and Development Department, we coordinate our research and development efforts conducted by a total of 600 scientists and other researchers in several research centers around the world, particularly:

- Anjou Recherche and its affiliated centers in Germany, Australia and the United States, which specialize in water related research,
- Centre de Recherche pour l'Environnement, l'Energie et les Déchets ("CREED"), which focuses on waste and energy related research, and
- Eurolum, which focuses on transportation related research.

Environment and Health

Our researchers are addressing, in coordination with our Health Department, a number of new risks to which populations are exposed despite the progress made over the past decades to improve public health and increase life expectancy around the world. In particular, our researchers rely on:

- models that optimize the supervision of the installations that we operate;
- the recognized and accredited analytical expertise of our laboratories, where, faced with new environmental or sanitary concerns, our research teams pool their resources to characterize substances that are often present in minuscule quantities (including, for example, the measurement of dioxins that are semi-continuously in smoke and the detection of endocrinal disrupters in water); and
- the development of treatment solutions, including new techniques to deactivate bacteria in water, to optimize combustion and to treat smoke.

Our research efforts in this area also address the environmental, sanitary security and quality of life issues relating to our employees, including, for example, one research program that focuses on improving working conditions within the facilities that we operate and reinforcing the security of our personnel employed in our waste collection and sorting activities.

The preservation of natural resources in the context of a durable development is a priority in our research and development efforts. Our research programs address a number of different environmental domains, including:

- the preservation of water resources, including our dedicated program for Berlin, Germany;
- the preservation of land, including efforts to develop new uses or applications for products derived from composted waste and the development of solutions to the recognized deficit of organic components in certain areas of land;
- preservation of raw materials through the development of waste recovery solutions; and

- preservation of air and eradication of the causes of the greenhouse effect, including through the containment of biogaz emissions at our landfills, research on "clean" or low-pollution vehicles and new transportation logistics, and the use of renewable energy.

Our research and development efforts in passenger transportation focus on quality of air and environmental protection by encouraging passengers to use the means of public transportation and to limit the use of individual vehicles. Our research programs seek simultaneously to improve our vehicles (use of "clean" energy sources, electric vehicles and tram and trains without catenary) and our passenger services (transportation on demand, multi-modal information, design and management of transit infrastructure and inter-modal title management).

Innovation to enhance quality of life

Our research programs allow us to develop new services and new processes to preserve the environment and enhance quality of life, including, for example:

- in the treatment of industrial effluents in the titanium industry, we have developed a solution (MERIT procedure) that prevents the production of red gypsum, which until recently was accumulated in lakes or disposed of at sea, and enables the production of a usable sub-product;
- in energy services, we are finalizing the development of energy storage solutions and new co-generation systems to limit the emission of greenhouse gases;
- in transportation, we have recently developed an information system (PHOEBUS) that optimizes the performance and reliability of transportation networks. Based on GSM mobile communication technologies, this system, which has already been implemented in the Ile-de-France department in France, was conceived primarily for small and medium-size transportation networks to facilitate the management of the network and vehicle fleets, to provide real-time information to passengers and to interact with local traffic controllers, such as traffic lights, to give priority to public transportation vehicles. The simplicity of the system's components and techniques used will enable us to quickly generalize the application of the PHOEBUS concept and service.

Our solutions for the treatment of sludge, in particular, shows our will to be a leader in innovation in our industry. We have developed a range of solutions for the treatment of this sub-product, which is produced in increasingly large quantities. We have also developed a number of sludge-related solutions, including procedures to reduce the production of sludge by-products (BIOTHELYS procedures), to enhance the quality of sludge by-products (SAPHYR procedures to sanitize and reduce odors from sludge), and to recover and recycle sludge by-products (PYROMIX co-incineration procedure and ATHOS procedure). In particular, our ATHOS procedure, which was developed by Anjou Recherche based on Vivendi Water's experience with wet air oxidation process for industrial effluents, is a type of combustion that does not produce flames or smoke and that emits a "clean" gas by-product, an organic liquid by-product that is eliminated through biological procedures used in water treatment, and a solid by-product. In 2001, the ATHOS procedure was chosen for the treatment of sludge generated by the new wastewater treatment plant in northern Brussels, Belgium.

We also devote a part of our research efforts to ensure that our new solutions are accessible to the largest number of people possible. A significant number of our research programs focus on optimizing existing techniques and solutions. For example, we are currently developing a methane index sensor that improves the performance, in terms of energy and environmental protection, of co-generation facilities. Also, based on the experience we have acquired at our potable water production facilities, including our Méry-sur-Oise plant in France (with a treatment capacity of 140,000 m^3 per day) and our Clay-Lane center in the United Kingdom (with a treatment capacity of 160,000 m^3 per day), we are deploying our membrane filtration techniques in potable water and wastewater treatment and recycling. Our Australian researchers have recently developed a new generation of membranes for filtration, which are being used in our Australian potable water treatment facilities (with a treatment capacity of 126,000 m^3 of potable water per day) and will be installed shortly in our Singapore wastewater recycling facilities (with a treatment capacity of 30,000 m^3 of wastewater per day).

We believe that research and development enables us to enhance our competitiveness by focusing on new technologies that allow us to meet our customers' demands and improve the quality of the environment. In particular, our research efforts allow us to develop new processes for our industrial customers, which we believe will be an important growth factor for our company in the next few years.

ITEM 5: OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion of our operations should be read in conjunction with our financial statements and related notes included elsewhere in this document. The following discussion contains forward-looking statements that involve risks and uncertainties, including, but not limited to, those described under "Item 3. Key Information–Risk Factors." Our results may differ materially from those anticipated in the forward-looking statements.

OVERVIEW

Our company has grown substantially over the period from 1999 to 2001, with revenue increasing by almost half over this period and operating income also increasing substantially excluding the impact of a non-recurring goodwill write-down in 2001. Part of our growth has resulted from the combination of our energy service assets with those of EDF and our selective acquisitions in strategic areas. We have also generated significant organic growth since 1999 as a result of an increasing number of contracts that we have won during the past three years, and we anticipate that our newest contracts should permit us to continue to record significant growth in the next several years.

Major Developments in 2001

Developments Relating to Our Shares

In August 2001, our shares were included in the CAC 40, the main equity index for French companies published by Euronext Paris. In October 2001, we listed our shares on The New York Stock Exchange in the form of American Depositary Shares.

In February 2001, our controlling shareholder, Vivendi Universal, issued approximately €1.8 billion principal amount of bonds that are exchangeable for shares representing 9.3% of our share capital, which had been purchased by Vivendi Universal at the time of our initial public offering. In December 2001, Vivendi Universal sold a block of our shares representing 9.3% of our share capital, as a result of which Vivendi Universal's shareholding in our company decreased from 72.3% to 63.05%. In addition, in December 2001 we distributed one free warrant for each of our shares. Subject to adjustments, each 7 warrants will entitle the holder to subscribe one share of our company at a subscription price of €55 per share at any time on or prior to March 8, 2006.

Developments Relating to Our Business

The year 2001 marked a period of strong growth for our company despite the global economic downturn. Our revenue increased by 10.9% in 2001 principally as a result of organic revenue growth of 7.5% in our business segments, which reflected organic revenue growth of 7.4% in France and 7.6% outside of France. The implementation in 2001 of the strategic partnership we entered into with EDF at the end of 2000 and, to a lesser extent, our selective acquisitions of medium-sized strategic companies to complement and reinforce our international operations contributed 3.2% of external revenue growth to our company in 2001.

We achieved substantial operating growth and results despite a difficult business environment attributable mainly to the economic slowdown in the United States, which worsened in the second half of 2001, a significant decline in paper prices in Europe and the transfer of our contract to operate the South Central rail network in the United Kingdom. We also won a significant number of new outsourcing contracts in 2001 with public authorities and industrial customers, including several contracts that combine the services of our various operating divisions.

Major Contracts with Public Authorities

The major contracts we won in 2001 with public authorities include contracts relating to:

- the treatment and distribution of potable water and the collection and treatment of wastewater in Prague, Czech Republic, with expected average annual revenue of €110 million for 13 years,
- water, wastewater treatment and electricity services in the cities of Tangiers and Tetouan, Morocco, with expected total revenue of €4.5 billion over 25 years,
- household waste collection in the most important area of downtown Singapore, with expected average annual revenue of €10 million for 5 years,

- the construction and operation of a wastewater treatment plant in North Brussels, Belgium, for 20 years, with expected total revenue of €1.3 billion,
- the management of the complete water cycle in the Ambito Territoriale Ottimale (ATO) of Latina, Italy, with expected average annual revenue of €64.5 million for 30 years, which was awarded to a consortium led by us and in which we hold a 40% interest,
- the heating network in Alytus, Lithuania, with expected average annual revenue of €12.5 million for 15 years,
- the operation of the BBA bus network, with expected total revenue of €720 million over 6 years, and
- the integrated management of municipal waste and waste-to-energy services and the operation of an urban heating network in Sheffield, U.K., with expected average annual revenue of €67 million for 30 years.

The revenue amounts that we expect to earn from these contracts take into account updates to our volume and price assumptions since the date these contracts were publicly announced. As a result, announced revenue amounts may differ from the amounts of expected revenue contained in this document. In the case of combined contracts to build and operate facilities, expected revenue amounts reflect total revenue expected to be generated from both services.

Significant Growth in Outsourcing Services to Industrial Customers

We won a number of significant contracts to provide outsourcing services to industrial customers, including contracts relating to:

- the operation of four plants for the production of ultra-pure water and of two plants for the treatment of wastewater and effluents for Hynix Semiconductors Corporation, with expected total revenue of €900 million over 12 years,
- the design, construction and operation of industrial effluents treatment facilities in France of Millennium Chemicals Inc. for 10 years, with expected total revenue of €165 million, including expected equipment sales,
- the collection and treatment of wastewater generated by Spolchemie in Czech Republic, with expected average annual revenue of €2 million for 10 years,
- the outsourcing of industrial services for Usinor's new site in Vega do Sul, Brazil, with expected average annual revenue of over €20 million for 15 years, and
- the co-generation of 23MW for Astra Zeneca's site in Macclesfield, U.K., for 15 years.

Strategic Acquisitions

We continued to pursue our policy of making selective strategic acquisitions of assets and medium-sized companies in 2001. Our main acquisitions in 2001 were:

- in the waste management sector, a 65% interest in a new company created to conduct the waste management operations of Marius Pedersen, a Danish foundation, particularly in Denmark, Czech Republic and Slovakia, for €85 million, which was mostly effected through a capital increase in the acquired company;
- in the energy services sector, Siram, an Italian energy services provider, for €81.8 million (which represents our proportional share of the total purchase price based on our stake in Dalkia); and
- in the transportation sector:
  - 50% of the assets and operations of Combus, a Danish regional bus operator, for €30 million;
  - Portillo, one of the largest operators of regional transportation services in southern Spain; and
  - Yellow Transportation, a U.S. regional transportation operator, for €21.8 million.

In addition, in the first half of 2001 our company and EDF consummated the transactions contemplated in our agreement signed in December 2000 pursuant to which EDF contributed its energy services operations to Dalkia, our main energy services subsidiary, in exchange for a 34% equity interest in Dalkia. As the French electricity deregulation process continues, we expect EDF's stake in Dalkia to eventually rise to 50%. See "Item 4. Information on the Company — Business Overview — Our Services — Energy Services" for a more detailed description of the EDF contract.

We also launched a divestiture program for non-strategic assets in 2001. We generated proceeds from sales of non-strategic assets in 2001 of €598 million, reflecting €206 million of sales of operating assets and €392 million of sales of financial assets. Our sales were the result of two principal factors. The first was the implementation of our agreement with EDF, which resulted in a net sale of €92 million after the consummation of all purchase and sale transactions between our company and EDF. The second was our effort to refocus our business on our environmental management services. In 2001, our sale of Johnson Screen, a subsidiary of the Filtration and Separation division of United States Filter Corporation, our main water subsidiary in the United States, represented the first phase of our divestiture program relating to non-strategic assets held by this subsidiary. We expect to continue pursuing this divestiture program in the United States in 2002. For the same reasons, we also disposed of our minority interest in Midkent, a U.K. water distribution company, and FCC disposed of its participation in Safei, a financial services company.

Presentation of Information in this Section

Definition of "organic" and "external" growth

As used in this document, the term "organic growth" includes growth resulting from (1) the expansion of existing contractual arrangements through increases in prices and/or volumes delivered, (2) new contracts and (3) acquisitions of assets dedicated to a particular project for use pursuant to particular contracts. Regarding the latter category, we frequently offer, in the course of bidding on a contract, to acquire operating assets related to the performance of the contract. The term "external growth" includes growth resulting from acquisitions (net of disposals) of entities and assets used in multiple markets and/or the performance of multiple contracts.

Changes in Accounting Methods and Presentation of Accounts

Changes in Income Statement Presentation

To harmonize the presentation of our accounts with international practices, and in compliance with Regulation 99-02 of the French Accounting Regulation Committee *(Comité de la Règlementation Comptable)*, we have changed our accounts to present our income statement by function, as opposed to our previous method of presenting our income statement by category of expense. This change in classification has two principal consequences for the presentation of our consolidated income statement:

- We no longer record construction for internal use assets as a component of revenue under French GAAP. Instead, construction for internal use assets is now recorded as a deduction from cost of sales in the same manner as it is recorded under U.S. GAAP. As a result, our revenue only reflects services invoiced to third parties.

- Our operating income is presented in a traditional international format as our revenue, less cost of sales, selling, general and administrative expenses, other operating expenses, goodwill amortization and restructuring expenses. Certain expenses that we previously classified as exceptional items are now classified as operating expenses.

Because 2001 is a year of transition to our new accounting presentation, and because operating income under the new presentation is not available broken down by business segment for 2000 and 1999, we have presented our operating income under both the old presentation method and the new presentation method. To distinguish between the old presentation and the new, for purposes of this year's discussion of our results of operations we have called the new version of operating income "operating income (new definition)," retaining the term "operating income" for the old definition. In Note 2 to our consolidated financial statements, we present a reconciliation of our operating income (new definition) and our operating income under the prior presentation method. We have also restated our financial statements for 1999 and 2000 to reflect the new presentation method.

For the purpose of our French accounts, we have also adopted a new measure of operating performance, which we refer to as "EBIT." This new measure of performance is not computed for our U.S. accounts. We define EBIT as operating income (loss) (new definition) before amortization of goodwill and restructuring charges. EBIT is not a measurement of operating performance calculated in accordance with accounting principles generally accepted in France or the United States, and should not be considered a substitute for operating income, net income, cash flows from operating activities or other statement of operations or cash flow statement data prepared in accordance with accounting principles generally accepted in France or the United States, or as a measure of profitability or liquidity. Because of its recent adoption, EBIT is not indicative of our historical operating results, nor is it meant to be predictive of potential results. Because all companies do not calculate EBIT identically, the presentation of EBIT contained in this document may not be comparable to similarly named measures of other companies.

The following table shows our revenue, EBIT, operating income and operating income (new definition) for fiscal years 1999, 2000 and 2001:

(in millions of €)	2001	2000	1999
		(restated except operating income)	
Revenue	29,127	26,263	20,930
EBIT	2,013	1,650	1,376
Operating Income	2,053	1,910	1,476
Operating Income (Loss) (New Definition) before goodwill amortization	1,707	1,364	1,158
Operating Income (Loss) (New Definition)	(946)	1,289	962

Changes in Accounting for Goodwill

Until the end of 1999, and in accordance with French GAAP, we recorded the portion of goodwill attributable to acquisitions which were completed through the issuance of shares as a charge to our shareholders' equity up to the amount of the related share premium. We listed our shares on the New York Stock Exchange in October 2001, as a result of which we are required to file with the U.S. Securities and Exchange Commission each year an Annual Report on Form 20-F that includes a reconciliation of equity and net income recorded under French GAAP to equity and net income as adjusted for the approximate effects of the application of US GAAP. One of these adjustments was the reclassification of the goodwill recorded under French GAAP as a reduction of shareholders equity to the assets under US GAAP.

Pursuant to the French Commercial Code, the listing of our shares on The New York Stock Exchange constitutes a new event that requires us to improve the quality of our publicly-available financial information by minimizing the differences between our accounts under French and U.S. GAAP. Accordingly, we will no longer record any goodwill as a reduction of shareholders' equity as permitted under French GAAP. Because we paid for the acquisition of United States Filter Corporation in 1999 through the issuance of shares to the former shareholders of the acquired company, we had allocated a significant portion of the goodwill recorded in connection with this acquisition to reduce shareholders' equity in 1999 in accordance with French GAAP. In 2001, we reversed this allocation for an amount of €2.037 billion, net of deemed amortization from the date of acquisition and recorded this amount of goodwill as an asset on our balance sheet. We then recorded an exceptional charge of €2.611 billion for the write-off of goodwill. We believe that the methodology we used in determining the amount of the write-off is similar to the impairment test that we will be required to use beginning with our 2002 financial statements under US GAAP pursuant to SFAS 141 and 142. However, the amount of impairment, if any, that we record in 2002 under US GAAP will be based on circumstances that will exist when we prepare our 2002 financial statements, and could differ from the amount of our French GAAP write-down in 2001.

Transfer of Assets from Vivendi Universal

During 2000, Vivendi Universal transferred to us a number of water distribution and wastewater treatment assets pursuant to agreements described under "Major Shareholders and Related Party Transactions — Related Party Transactions." To facilitate comparisons with previous periods, we have restated our income statements and balance sheets for 1999 to include the income generated by these assets as determined under French GAAP. Vivendi

Universal did not transfer any significant assets to us during 2001. This is in addition to our restatement to reflect our changed accounting presentation described above.

Critical Accounting Policies

We prepare our consolidated financial statements in conformity with accounting principles generally accepted (commonly referred to as GAAP) in France. Our consolidated financial statements are impacted by the accounting policies used and the estimates, judgments and assumptions made by management during their preparation. These estimates and assumptions affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the periods presented. The significant accounting policies that we believe are the most critical to aid in fully understanding and evaluating our reported financial results are those relating to public service contracts, revenue recognition, facilities and asset maintenance and those relating to goodwill recognized in connection with businesses transferred to us by Vivendi Universal.

Public Service Contracts

Revenue Recognition. We provide our municipal water, waste management, energy and transportation services through public service contracts with public authorities. Revenue is recognized on these contracts when services are rendered in accordance with the terms of the contracts. On an exceptional basis, we may also operate management contracts in which we manage a public service for a fixed fee as well as an incentive which is calculated in relation to the performance of the contract. For these contracts, we recognize billing to customers as revenue and all related costs as operating expenses. Revenue resulting from government subsidies associated with long-term operating agreements is recorded ratably over the year.

Facilities. Facilities that we operate are generally financed by and remain the property of local authorities throughout the contract period. Individual facilities financed by us as a consequence of specific contractual terms are recorded as fixed assets and depreciated to their estimated residual value, if any, on the shorter of their economic useful lives or the contract's term. If the term of the contract is shorter than the economic useful life of the asset, this depreciation is classified as a liability as a financial depreciation under French GAAP.

Fees paid to local authorities. We do not have any obligation for compensation payments to local authorities during the contract period, except for fees that have been agreed upon by both parties and formally defined by the contract. We expense ratably fees that are paid annually and amortize these costs on a straight line basis over the life of the contract when the fees consist of payments at the beginning of the contract.

Commitments to Maintain and Repair Assets and Planned Maintenance Projects. We generally assume a contractual obligation to maintain and repair facilities managed through public service contracts. Corresponding repair and maintenance costs are expensed as incurred, except for some investments in joint ventures where costs are accrued in advance. We expense costs relating to planned maintenance projects as they are incurred.

Landfill Capitalization and Depletion. Landfill sites are carried at cost and amortized ratably using the units of production method over the estimated useful life of the site as the airspace of the landfill is consumed. Landfill costs include capitalized engineering and other professional fees paid to third parties incurred to obtain a disposal facility permit. When we determine that the facility cannot be developed or the likelihood of grant of the permit cannot be determined before its final authorization, as it is the case in France and in the United Kingdom, these costs are expensed as incurred.

Landfill Closure and Post-closure Costs. We have financial obligations relating to closure and post-closure costs and the remediation of disposal facilities we operate or for which we are otherwise responsible. Landfill final closure and post-closure accruals consider estimates for costs of the final cap and cover for the site, methane gas control, leachate management, groundwater monitoring, and other monitoring and maintenance to be incurred after the site discontinues accepting waste. The cost estimates are prepared by engineers based on the applicable local, state and federal regulations and site specific permit requirements. These estimates do not take into account discounts for the present value of total estimated costs. We accrue a reserve for these estimated future costs pro rata over the estimated useful life of the sites. Accruals for environmental remediation obligations are recognized when such costs are probable and reasonably estimable. These liabilities are classified as reserves and allowances.

Goodwill Related to Businesses Transferred by Vivendi Universal

Businesses Transferred by Contribution. Assets or operating entities that Vivendi Universal contributed to us have been recorded at net book value, and we have recorded them in our consolidated financial statements at historical value.

Businesses Transferred by Sale. Sales of assets or operating entities by Vivendi Universal to us or our subsidiaries were made at market value which, in certain cases, has resulted in the generation of additional goodwill. The most significant portion of the additional goodwill resulted from the creation of our water segment and the transfer of the remaining stake of our energy segment to its holding company. This goodwill is reflected in our consolidated financial statements.

See Note 2 to our consolidated financial statements for additional information on the significant accounting policies used in preparing our financial statements. See also "— Changes in Accounting Methods and Presentation of Accounts" and "Transfer of Assets from Vivendi Universal" for other material information regarding the presentation of our accounts.

U.S. GAAP Reconciliation

Our consolidated financial statements have been prepared in accordance with French GAAP, which differs in certain significant respects from U.S. GAAP. Under U.S. GAAP, we had net income of €180.3 million for the year ended December 31, 2001 and of €433.4 million for the year ended December 31, 2000 and a net loss of €348.3 million for the year ended December 31, 1999, compared to a net loss of €2,251.2 million and net income of €614.8 million and net loss of €42.3 million respectively under French GAAP. Under U.S. GAAP, shareholders' equity was €6,780.7 million at December 31, 2001, €6,569.2 million at December 31, 2000 and €1,767.5 million at December 31, 1999, compared to €5,740.0 million, €6,208.3 million and €678.1 million under French GAAP.

The most significant item in reconciling French GAAP and U.S. GAAP in 2001, as applied to our company, relates to the impairment of goodwill. See Note 26 of our consolidated financial statements. In 2001, the method used to evaluate goodwill under U.S. GAAP, as defined by SFAS No. 121 in force until December 31, 2001, led us to reverse under U.S. GAAP, a portion of the goodwill impairments recorded under French GAAP. As a result, our writedown of €2.6 billion in goodwill recorded in connection with the acquisition of United States Filter Corporation has been adjusted under U.S. GAAP. The most significant item in reconciling French GAAP and U.S. GAAP for the years 2000 and 1999, as applied to our Company, was related to goodwill accounting. Until December 31, 1999 and in accordance with French GAAP, for acquisitions which were completed through the issuance of capital, the portion of goodwill attributable to such proceeds could be charged to shareholders' equity, up to the amount of the related share premium (this option was adopted for the acquisition of U.S. Filter). Under U.S. GAAP, this option is not permitted and goodwill is recorded as an asset and amortized over the estimated useful life, not to exceed 40 years.

Other significant reconciling items relate to the use of the proportionate consolidation method, intangible assets, financial instruments, public service contracts and stock based compensation. These items are further described in Note 26 to our consolidated financial statements.

Under U.S. GAAP we had operating income of €1,033.2 million for the year ended December 31, 2001, €903.3 million for the year ended December 31, 2000 and €558.0 million for the year ended December 31, 1999, compared to operating loss (new definition) of €946.4 million, operating income (new definition) of €1,289.3 million and operating income (new definition) of €961.9 million, respectively, under French GAAP.

The most significant differences between our French GAAP operating income (loss) (new definition) and our U.S. GAAP operating income are due to:

- the impairment in the year 2001 of the goodwill related to United States Filter Corporation, which has been adjusted under U.S. GAAP as described above; and
- the proportionate consolidation of investments in joint ventures that would be accounted for under the equity method pursuant to U.S. GAAP (impact of €401.4 million for the year ended December 31, 2001,

€314.5 million for the year ended December 31, 2000 and €123.6 million for the year ended December 31, 1999);

RESULTS OF OPERATIONS

Year ended December 31, 2001 compared to year ended December 31, 2000

Revenue

Overview

We generated revenue of €29.1 billion in 2001, an increase of 10.9% from revenue of €26.3 billion in 2000 (as restated to take into account our new accounting presentation). This increase is principally attributable to organic growth in our businesses (7.5%), the full-year impact of acquisitions made in 2000 and the consolidation of revenue generated by companies acquired in 2001 (3.2%), and the impact of exchange rate fluctuations (0.2%).

The full-year impact of acquisitions made in 2000 represents an increase in revenue of approximately €111 million in 2001, mainly attributable to:

- the acquisition of Pacific Waste Management, a Hong Kong-based operator, consolidated over 12 months in 2001 and 6 months in 2000, which contributed an additional €48 million in revenue in 2001;
- several acquisitions in the United States, which contributed an additional €41 million in revenue 2001; and
- the acquisition of RIMSA, a Mexican waste management company, consolidated over 12 months in 2001 and 6 months in 2000, which contributed an additional €6 million in revenue in 2001.

Operations acquired in 2001 contributed a total of approximately €1.1 billion to our revenue in 2001, mainly attributable to:

- the consolidation of EDF's energy services operations in Dalkia pursuant to the implementation of our strategic partnership agreement with EDF, which contributed an additional €838 million in revenue in 2001;
- the acquisition of 65% of the waste management operations of Marius Pedersen, a Danish foundation, which contributed an additional €94 million in revenue in 2001;
- the acquisition of Siram, an Italian energy services provider, which contributed an additional €43 million in revenue in 2001; and
- the acquisition of a number of waste management operations in Norway, which in aggregate contributed an additional €25 million in revenue in 2001;
- the acquisition of Yellow Transportation, a U.S. operator, which contributed an additional €24 million in revenue in 2001.

The following table shows a breakdown of our 2001 revenue by business segment, both in France and elsewhere:

	2001			2000(1)		
(€ billions)	France	Outside France	Total	France	Outside France	Total
Water	6.2	7.4	13.6	5.8	7.0	12.8
Waste management	2.4	3.5	5.9	2.4	2.9	5.3
Energy	2.7	1.3	4.0	1.8	1.2	3.0
Transportation	1.0	2.1	3.1	0.9	2.2	3.1
FCC(2)	–	2.5	2.5	–	2.1	2.1
Total	12.3	16.8	29.1	10.9	15.4	26.3

(1) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "— Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

(2) Figures reflect a 49% share of FCC. Under French GAAP, we proportionally consolidate FCC based on our 49% interest in the holding company that controls it. Under U.S. GAAP, FCC would be accounted for using the equity method. See Note 26 to our consolidated financial statements.

Revenue generated outside France totaled €16.8 billion in 2001, an increase of 8.7% compared with revenue generated outside France in 2000, representing 57.5% of the total, which reflects growth in all of our operating segments.

The following table shows a breakdown of our 2001 revenue by business segment and by geographical region outside of France:

	2001					2000(1)
(€ billions)	Euro zone outside France	Europe outside euro zone	Americas	Rest of world	Total	Total
Water	1.2	1.0	4.2	1.0	7.4	7.0
Waste management	0.3	1.1	1.8	0.3	3.5	2.9
Energy	0.5	0.7	–	0.1	1.3	1.2
Transportation	0.4	1.5	–	0.2	2.1	2.2
FCC(2)	2.2	0.1	0.2	–	2.5	2.1
TOTAL	**4.6**	**4.4**	**6.2**	**1.6**	**16.8**	**15.4**

(1) Restated to reflect the changes in our accounting methods and presentation of accounts in 2001. See "— Overview — Presentation of Information in this Section — Changes In Accounting Methods and Presentation of Accounts — Changes in Income Statement Presentation."

(2) Figures reflect a 49% share of FCC. Under French GAAP, we proportionally consolidate FCC based on our 49% interest in the holding company that controls it. Under U.S. GAAP, FCC would be accounted for using the equity method. See Note 26 to our consolidated financial statements.

Revenue from the euro zone outside France increased by 8.9% in 2001, principally due to strong growth of our transportation business and FCC. The substantial growth in transportation services in this region was attributable primarily to the full-year impact of the acquisition in 2000 of the Taeter group, a German operator, and strong growth in Germany, where we benefited from rail contracts won in 2000, The Netherlands, where we commenced operating BBA's contract, Finland and Denmark. Growth in FCC's business, which increased by 15.6% in 2001, was principally attributable to strong demand in Spain.

The growth of approximately 7.6% in Europe outside the euro zone countries was driven by our water services and waste management businesses, which offset the 10.8% decline in our transportation business in 2001. Growth in our water services business was mainly attributable to the commencement of operations under contracts won in 2000 and 2001, including our contracts in Prague, Bucharest and Ploiesti (Romania). Growth in our waste management business was mainly due to the acquisition of Marius Pedersen's operations in Denmark and Central Europe. The decline in our transportation business in this region in 2001 resulted principally from the transfer of our South Central line contract in the United Kingdom during the second half of 2001, which was partially offset by growth in our transportation services in Denmark.

In the Americas, our revenue grew 6.1% in 2001. We experienced our strongest growth in this region in North America, where our revenue increased by over 11.2%, which more than offset a decrease in revenue of 21% in Latin America, and particularly in Mexico. This increase was mainly due to the full-year impact of the waste operations of Allied Waste acquired in 2000 and of waste operations acquired by Superior Services in 2000, and, to a lesser extent, to the impact of fluctuations in the U.S. dollar exchange rate. Revenue from our water services business only increased by 1.8% in 2001 due to the difficult economic conditions in North America.

We experienced growth of 15.6%, in the Asia-Pacific region in 2001, primarily due to new waste management contracts and the commencement of operations under contracts awarded to Vivendi Water in 2000 and 2001, particularly by Hyundai Petrochemicals and Hynix Semiconductors.

Water

During 2001, our water business posted revenue of €13.6 billion, an increase of 6.8% compared with 2000. This increase is mainly attributable to organic growth, which represents 5.5% of the increase, and the impact of fluctuations in currency exchange rates, particularly with respect to the U.S. dollar, which represents 0.9% of the increase. External growth resulting from the transfer by Vivendi Universal to us of Société des Eaux de Guadeloupe in 2001 represents the remaining 0.4% of the increase in our water revenue.

Revenue recorded by Vivendi Water Systems grew by 9.2% to €1.3 billion in 2001. This growth was driven mainly by a solid operating performance in a very competitive market, particularly in France.

In France, our water distribution and engineering operations posted a 4.9% increase in revenue to €5.9 billion. Water distribution revenue grew by 4% as a result of price indexing mechanisms and a small increase in volumes. Revenue generated by our specialized engineering subsidiaries grew by 9%, mainly as a result of substantial cyclical demand. Our 2001 revenue also benefited from an overall increase in services provided to industrial customers.

Outside France, water revenue amounted to €7.4 billion, an increase of 7.4% (€450 million) over water revenue recorded outside France in 2000, reflecting strong growth in our "Rest of World" segment (24.9%) due to the commencement of operations under new contracts, particularly in continental Europe and Asia. Revenue generated in North America, and particularly the United States, remained stable in dollars, while fluctuations in currency exchange rates had a positive impact of €134 million that resulted in an increase of 1.8% in revenue in euro. Within Vivendi Water North America, strong growth in municipal and industrial outsourcing revenue, which increased by 8.2% in 2001, more than offset lower sales of water equipment and Culligan products as a result of the economic slowdown in North America.

Waste Management

Our waste management operations continued to show strong growth as revenue rose to €5.9 billion in 2001, an increase of 12.4% compared with 2000, of which organic growth represented 8.3%.

In France, our waste management revenue increased by 3.7% despite a decline in paper prices. Revenue growth was mainly attributable to strong operating performance, particularly in selective collection, incineration and industrial waste services, with significant increases in volumes and price renegotiations in 2001, as well as to the impact of new contracts won and existing contracts renewed in 2001.

Revenue generated outside France increased by 19.5% to €3.5 billion, reflecting the increasing internationalization of our waste management operations, which represented 58.7% of our waste management revenue in 2001 compared to 55.2% in 2000. Growth in revenue outside France was concentrated mainly in Europe

with the acquisition of 65% of the waste management operations of Marius Pedersen in Northern and Central Europe in May 2001, and in Asia with a number of new contracts won in 2001 and the full-year consolidation of Pacific Waste Management acquired in 2000.

Energy Services

Our energy services revenue was €4.0 billion in 2001, an increase of 34.4% from revenue of €3.0 billion in 2000. Revenue growth resulted mainly from organic growth of 15.1% and external growth of 19.8%, which more than offset a 0.4% decline in revenue due to the negative impact of changes in currency exchange rates, particularly the depreciation of the British pound and the Swedish krona.

In France, organic growth resulted primarily from the favorable impact of an increase in energy prices on the billing for certain of our services and from new co-generation contracts and other heating and industrial facilities management contracts won in 2001. Outside France, organic growth resulted mainly from the expansion of existing businesses in Eastern Europe and the commencement of operations under new contracts with industrial customers signed in 2000, including energy services provided by Dalkia under our multi-service contract with Novartis.

External growth in 2001 resulted primarily from the consolidation of EDF's energy services operations in Dalkia pursuant to our strategic partnership agreement with EDF (€838 million of additional revenue) and the acquisition of Siram (€43 million of additional revenue), which was consolidated over 3 months in 2001. These factors more than offset the negative impact of the transfer of 25% of our ownership interest in Dalkia International to EDF in 2001, which resulted in a loss of €296 million in revenue generated by Dalkia International in 2001.

Transportation

Our transportation business revenue remained stable at €3.1 billion in 2001, compared to €3.1 billion in 2000. Our strong operating performance offset the negative impact of our disposal of Barraqueiro, a Portuguese operator, in 2000 (with €79 million in revenue in 2000) and the loss of our South Central contract in the United Kingdom in August 2001 (which resulted in a decrease in revenue of €234 million in 2001). This operating performance resulted primarily from organic growth of 5.5% in France and significant new contracts and acquisitions outside France, including:

- strong organic growth in Northern Europe with the award of contracts to operate the regional transportation networks in the Brabant region and the city of Maastricht, The Netherlands, which in aggregate contributed €74 million in revenue in 2001, and the acquisition of 50% of the regional bus operations of Combus in Denmark, which contributed an additional €54 million in revenue in 2001;
- new rail contracts and the development of our bus operations in Germany, where our transportation revenue grew by €54 million in 2001; and
- the development of our transportation activities in the United States (€35 million in additional revenue in 2001) and in Spain (€10 million in additional revenue in 2001).

FCC

Excluding the results of Proactiva, which are included in the results of our water and waste management segments, FCC's revenue grew by 16.1% in 2001. Our consolidated 49% share of FCC's total revenue was €2.5 billion.

FCC's services business generated total revenue of €1.8 billion in 2001, an increase of 12.5% over total revenue in 2000, primarily due to the strengthening of FCC's passenger transportation operations in southern Spain and the acquisition of Grupo Ekonor, one of the leading Spanish providers of hazardous waste management services.

FCC's construction activities posted total revenue of €2.4 billion in 2001, an increase of 16.6% over total revenue of €2.1 billion in 2000, mainly due to very favorable business conditions in Spain.

FCC's cement business, conducted through its 48% interest in Portland Valderrivas, posted total revenue of €808 million in 2001, an increase of 20.1% over total revenue of €673 million in 2000, largely as a result of strong growth in Spain and in the United States.

Operating Expenses

Our operating expenses amounted to €27.1 billion in 2001, an increase of 12% over operating expenses of €24.3 billion in 2000, as restated to take into account our new accounting presentation. The increase in operating expenses reflected mainly an increase of 11% in cost of sales from €21.1 billion in 2000 to €23.6 billion in 2001, which was primarily due to costs incurred in connection with the commencement of operations under new contracts won in 2001. Research and development expenses amounted to €0.1 billion in 2001, sales and marketing expenses were €0.9 billion, and general and administrative expenses amounted to €2.7 billion.

Operating Income (New Definition) and EBIT

We recorded an operating loss (new definition) of €946.4 million in 2001, compared to operating income (new definition) of €1,289.3 million in 2000. The difference was due primarily to the write-down of goodwill related to US Filter, as described below. Our restructuring costs and costs incurred in connection with anticipated future profitability enhancements decreased slightly, from €54.4 million in 2000 to €49.4 million in 2001. These expenses in 2001 related mainly to the restructuring of Vivendi Water's activities in the United States (€33.7 million), which are conducted through United States Filter Corporation, and of Onyx's waste management's information technology services and Medicare operations (€12.3 million). Expenses in 2000 amounted to €54 million and related mainly to the reorganization of our corporate headquarters. Our water business posted an operating loss (new definition) of €1.7 billion and Proactiva recorded an operating loss (new definition) of €4 million in 2001, while costs incurred by our holding companies and not reimbursed by our operating subsidiaries contributed an operating loss (new definition) of €77 million. These losses were partially offset by operating income (new definition) of €294 million in our waste management business, €207 million in our energy services business, €98 million in our transportation business and €231 million contributed by FCC.

Our EBIT increased from €1,650.0 million in 2000 to €2,013.1 million in 2001. EBIT reflects our operating income (loss) (new definition) before goodwill amortization and restructuring costs. In 2001, we recorded €1,090 million of EBIT in our water segment, representing 8.0% of revenue, €391 million in our waste management segment, representing 6.6% of revenue, €221 million in our energy services business, representing 5.5% of revenue, and €112 million in our transportation business, representing 3.6% of revenue. Our share of EBIT generated by FCC amounted to €229 million in 2001, or 9.2% of our share of FCC's revenue. Costs incurred by our holding companies and not reimbursed by our operating companies had a negative impact of €30 million on our EBIT in 2001. We recorded 31.7% of our total EBIT in 2001 in France, 33.6% in Europe (excluding France), 30.1% in the Americas and 4.6% in the rest of the world. EBIT breakdowns for 2000 are not available.

As a percentage of our revenue, EBIT increased from 6.3% in 2000 to 6.9% in 2001. The improvement in our EBIT margin resulted principally from a reduction in our "other net operating expenses," from €251.0 million in 2000 to €6.0 million in 2001. This category consists principally of non-recurring charges that were previously recorded as "exceptional items" under our former accounting presentation.

Operating Income

Our operating income amounted to €2.1 billion in 2001, an increase of 7.5% over operating income of €1.9 billion, resulting from different levels of growth in each of our operating segments in 2001.

Operating income generated by our water business grew 9.9% from €1.0 billion in 2000 to €1.1 billion in 2001. This increase was primarily due to strong operating performance in France, where we implemented productivity plans and experienced a slight growth in volumes, the implementation by Vivendi Water Systems of a restructuring plan and, outside Europe and the Americas, to improvements in existing contracts, the award of a significant number of new contracts and the development of our industrial customer base. As a result, our operating margin improved slightly from 8.0% in 2000 to 8.2% in 2001.

Operating income contributed by our waste management business remained stable at €393 million in 2001, compared to operating income of €394 million in 2000. Our operating income in this segment was affected by a decline in paper prices (with a negative impact of €20 million) and the economic slowdown in North America and, to a lesser extent, Australia, which was partially offset by additional operating income contributed by acquired operations and an improvement in profitability in our U.K. subsidiary. As a result, our operating margin declined from 7.5% in 2000 to 6.6% in 2001.

Our energy services business contributed operating income of €224 million in 2001, an increase of 17.1% over operating income of €191 million in 2000. This increase was primarily due to an improvement in the operating margins of our traditional activities in France, the integration of EDF's energy services operations and the development of our activities outside France. Our operating margin, however, declined from 6.3% in 2000 to 5.6% in 2001, mainly as a result of lower operating margins generated by EDF's energy services operations that were integrated into our energy services business, which more than offset an improvement in our operating margins outside France principally due to new contracts won in Eastern Europe.

Our transportation business contributed operating income of €112 million in 2001, representing an increase of 6.5% over operating income of €105 million in 2000, principally as a result of the extraordinary indemnities received in connection with our eviction from the South Central contract in the United Kingdom. Operating margins in our transportation business improved slightly, increasing from 3.4% in 2000 to 3.6% in 2001.

FCC's contribution to our operating income amounted to €231 million in 2001, representing an increase of 11.2% over operating income of €208 million in 2000. This increase was mainly attributable to a cyclical increase in demand for environmental services in Spain during 2001. FCC's operating margin declined slightly from 9.8% in 2000 to 9.4% in 2001.

Goodwill Amortization

Our goodwill amortization increased sharply from €306 million in 2000 to €2.9 billion in 2001, principally due to:

- a slight increase in recurring goodwill amortization from €232.3 million in 2000 to €257 million in 2001 as a result of acquisitions made in 2000 and 2001; and
- an increase in non-recurring goodwill amortization from €74 million in 2000, which is primarily related to the impairment of the goodwill associated with Onyx's U.K. operations, to €2.7 billion in 2001, which includes an exceptional goodwill write-off of €2.6 billion relating to an adjustment of goodwill recorded in connection with the acquisition of United States Filter Corporation. Our management determined that the goodwill recorded for this transaction was impaired and wrote down a significant portion of this goodwill based upon an estimate of discounted cash flows. This analysis was based on a 10-year projection at a discount rate of 7% and a terminal value. Our management has reviewed the estimated cash flows as a result of the evolution of the U.S. economy. See "Overview — Presentation of Information in this Section — Changes in Accounting Methods and Presentation of Accounts — Changes in Goodwill Amortization."

Financial Income (Expense)

We incurred net financial expense (which includes dividends received, profit or loss on sales of marketable securities, foreign exchange profit or loss and financing costs) of €798 million in 2001, compared with net financial expense of €892 million in 2000 (as restated to take into account our new accounting presentation). The decrease in net financial expense was principally due to a decline in our average financing costs from €875 million in 2000 to €764 million in 2001. The decrease in our financing costs is attributable to a reduction in the principal amount outstanding under our long-term indebtedness as a result of our capital increase in 2000, as well as a decline in interest rates for euro- and dollar-denominated debt and the early termination of part of our financial transactions with Vivendi Universal. The average cost of our debt decreased from 5.1% in 2000 to 4.9% in 2001.

Excluding financing costs, our net financial expense amounted to €34 million in 2001, compared to net financial expense of €17 million in 2000. This increase is due to an increase in our financial provisions of €54 million in 2001 (compared to a decrease of €20 million in 2000), which more than offset a net foreign exchange gain of €16 million in 2001 (compared to a foreign exchange loss of €12 million in 2000).

Other Income (Expense)

We record non-recurring results and charges as "other income (expense)," including capital gains and losses. We posted net other income of €39 million in 2001, compared with net other income of €777 million in 2000. The amount for 2001 included a total capital gain and dilution gain of €121 million recorded in connection with the implementation of our strategic partnership agreement with EDF, a capital gain of €23 million recorded by FCC in

connection with the disposal of its interest in Safei and a capital gain of €11 million in connection with the disposal of our interest in Midkent. These gains more than offset €100 million in other expense incurred in connection with the impairment of certain non-strategic assets of Berliner Wasser Betriebe that we plan to sell in 2002. The amount for 2000 included a total capital gain and dilution gain recorded in connection with our strategic partnership agreement with EDF (€729 million).

Tax Expense

Our tax expense in 2001 was €462 million, compared with tax expense of €459.2 million in 2000. Our tax expense remained stable following the gradual implementation, not yet completed, of a group-wide tax policy, which includes the creation of a tax consolidation group in France.

Our effective corporate income tax rate in 2001 amounted to 38.4% of our consolidated profit before amortization of goodwill compared to 31.2% in 2000.

Our Share in Net Earnings of Companies Accounted For by the Equity Method

Our share in net earnings of companies accounted for by the equity method reached €47.8 million in 2001, compared to €60.6 million in 2000. The largest contributions were provided by companies accounted for by FCC using the equity method (€16.2 million), U.K. water distribution companies (€13.7 million) and U.S.-based water company Philadelphia Suburban Corporation (€11.9 million).

Minority Interest

Our minority interest expense totaled €131.2 million in 2001, compared to €161.4 million in 2000. The principal minority interests are related to FCC and Proactiva (€88.1 million), Dalkia (€39.3 million), our waste management subsidiaries (€31.7 million) and Connex (€4.3 million), which more than offset minority interest income from our water activities amounting to €32.2 million.

Consolidated Net Income

We recorded a consolidated net loss of €2.3 billion in 2001, compared with consolidated net income of €615 million in 2000. Excluding exceptional goodwill write-offs and other non-recurring charges, our recurring consolidated net income amounted to €420 million in 2001, compared to recurring consolidated net income of €342 million in 2000. The increase in recurring consolidated net income is mainly attributable to the increase in our EBIT and the decrease in our financing costs in 2001.

Based on our average number of shares outstanding during the year (346.2 million), recurring net earnings per share was €1.21, compared to recurring net earnings per share of €1.24 in 2000 (based on 275.7 million shares outstanding on average over 2000).

Year ended December 31, 2000 compared to year ended December 31, 1999

The following discussion is based on our results of operations in 2000 and 1999 prior to the restatement of our results to reflect the changes in our accounting methods and presentation of accounts in 2001. As a result, the information set forth in the following discussion may not correspond to the information provided in our consolidated financial statements. The principal differences between the information in the discussion below and the information set forth in our restated 2000 and 1999 financial statements include:

- the restatement of our 2000 and 1999 revenue and operating income to reflect our new accounting methods and presentation of accounts adopted in 2001;
- the reclassification of certain expenses and charges formerly recorded as "exceptional items" as operating expenses or restructuring costs; and
- the deduction of goodwill amortization charges in calculating operating income and the adoption of EBIT as a new indicator of operating performance.

See "Overview — Presentation of Information in this Section — Changes in Accounting Methods and Presentation of Accounts" and note 2 to our consolidated financial statements for a description of the main differences between the information discussion below and our restated 2000 and 1999 financial statements.

Revenue

Overview

We generated strong growth in 2000, raising revenue of €26.4 billion, an increase of 25% over revenue of €21.0 billion in 1999. This increase was the result of organic growth (11.0%), the impact of exchange rate fluctuations (4.7%), particularly increases in the value of the U.S. dollar and the British pound against the euro, and acquisitions (10.1%). With regard to the latter, the full-year impact of acquisitions made in 1999 accounted for an increase in revenue of approximately €1.85 billion as follows:

- United States Filter Corporation, consolidated over 12 months in 2000 and eight months in 1999, contributed an additional €1.32 billion in revenue in 2000;
- Waste Management's toxic waste management activities, consolidated over 12 months in 2000 and six months in 1999, contributed an additional €171 million in 2000;
- Superior Services, consolidated over 12 months in 2000 and five months of 1999, contributed an additional €203 million in 2000; and
- Norsk Gjenvinning, consolidated for the full year in 2000 but for no portion of 1999, contributed an additional €164 million in 2000.

Operations acquired in 2000 contributed a total of approximately €630 million to our revenue. The largest contributions were from GTI (€234 million), Haniel (€83 million), Pacific Waste Management (€55 million) and RIMSA (€45 million).

The following table shows a breakdown of our 2000 revenue by business segment, both in France and elsewhere:

	2000			1999		
(€ billions)	**France**	**Outside France**	**Total**	**France**	**Outside France**	**Total**
Water	5.7	7.1	12.8	5.6	4.9	10.5
Waste management	2.4	2.9	5.3	2.0	1.5	3.5
Energy	2.0	1.2	3.2	1.8	1.0	2.8
Transportation	0.9	2.1	3.0	0.6	1.8	2.4
FCC	–	2.1	2.1	–	1.8	1.8
Total	11.0	15.4	26.4	10.0	11.0	21.0

Revenue generated outside France totaled €15.4 billion in 2000, up 40% compared with 1999, accounting for 58% of the total. Our rapid growth outside of France, the result of both new contracts and acquisitions, continues a strong trend of recent years.

The following table shows a breakdown of our 2000 revenue by business segment and by geographical region outside of France:

(€ billions)	2000					1999
	Euro zone outside France	Europe outside euro zone	Americas	Rest of the world	Total	Total
Water	1.3	0.8	4.2	0.8	7.1	4.9
Waste management	0.3	0.8	1.5	0.3	2.9	1.5
Energy	0.5	0.7	–	–	1.2	1.0
Transportation	0.3	1.7	–	0.1	2.1	1.8
FCC	1.8	–	0.3	–	2.1	1.8
Total	4.2	4.0	6.0	1.2	15.4	11.0

Revenue from the euro zone outside France (eleven countries in Western Europe) increased by 37% in 2000. The substantial growth in water services in this region was attributable primarily to the full-year impact of contracts won in 1999 and 2000, the Berlin water contract in particular. Waste management operations in the region were strengthened by the purchase of Haniel in Germany, which added €83 million in revenue. Growth in the energy business came most from Germany and Portugal, while expansion in Germany was the main source of revenue growth in transportation.

The growth of almost 15% in Europe outside the euro zone countries was driven by waste management, which posted a 44% revenue increase, and, to a lesser extent, our transportation and energy operations. Waste management revenue was increased €164 million by the addition of Norsk Gjenvinning's operations in Norway, while transportation benefited from the full-year impact of the Stockholm metro contract: Revenue generated under that contract increased from €99 million to €221 million, due primarily to its inclusion for the full year and to increased passenger traffic. Our energy services business also expanded significantly in Eastern Europe.

In the Americas, our revenue grew by over 60% in 2000. The increase was particularly strong in waste management, where growth was almost 160%, primarily because Superior Services was consolidated for the full year for the first time. Growth in American waste management revenue also increased due to acquisitions made in North America as well as organic growth in Superior Services, operations acquired by Superior Services, Onyx North America, and Proactiva's waste management business. Water revenue benefited from the full-year consolidation of United States Filter Corporation.

We experienced revenue growth of €75 million, or 90%, in the Asia-Pacific region in 2000, primarily due to the new transportation contracts won in Sydney and Melbourne. Also contributing to growth in this region was our acquisition of Pacific Waste Management in Hong Kong, which was consolidated over six months, and the 21% organic growth generated by Collex, Onyx's Australian subsidiary.

Our exposure to emerging market risks remained limited in 2000, as revenue generated in developing countries was approximately €800 million, or 3% of our total for the year.

Water

During 2000, our water business posted revenue of €12.8 billion, up 22% compared to 1999. Organic growth reached 10%, with the remaining increase resulting from currency effects (6%), particularly from the appreciation of the U.S. dollar, and acquisitions, primarily the full-year impact of the United States Filter Corporation acquisition.

In France, our water operations posted a 2% increase in revenue to €5.7 billion in 2000. Water distribution revenue grew by over 3% as a result of a small increase in volumes and increases in prices as a result of indexation mechanisms. Our specialized engineering subsidiaries delivered a growth rate of over 10%, largely because of substantial cyclical demand.

Following the combination of OTV's activities with those of United States Filter Corporation International, the revenue contribution of the new combined entity, Vivendi Water Systems, increased by €0.2 billion compared with 1999 to €1.1 billion in 2000. This growth was driven mainly by the impact of the full-year consolidation of the international subsidiaries of United States Filter Corporation and a solid operational performance in a very competitive market, particularly in France.

Outside France, water revenue was almost €5.9 billion, an increase of 34.7% (€1.5 billion) compared with 1999. This revenue growth was driven mainly by the full-year impact of the United States Filter Corporation acquisition (€1.0 billion) and the organic growth United States Filter Corporation generated, partially offset by the divestment of Kinetics. In the United States, growth in municipal and industrial outsourcing was over 25% for the year. In addition, our consumer water business continued to expand, as did our filtration and surface preparation operations.

Waste Management

Our waste management revenue rose to €5.3 billion in 2000, up 50% compared with 1999. Organic growth of 13.4% was the product of strong operating performance, particularly in France, with significant increases in the volume of waste collected and processed. Unlike 1999, the paper salvage and recycling market also saw high price levels in 2000, which peaked in June and July 2000. Gains in France and elsewhere were partially offset by weakness in our U.K. operations, where significant restructuring measures were undertaken to improve performance, primarily through a rationalization of the corporate structure of our businesses there.

Revenue generated outside France increased by 92% to €2.9 billion in 2000, primarily due to acquisitions. In keeping with our overall policy, we continued to expand in key markets in 2000, with the full-year consolidation of our North American waste activities and the acquisition of Norsk Gjenvinning in Norway at the beginning of the year, followed by the purchase of controlling interest in Waste Management International's activities in Hong Kong and Mexico. The expansion drive also led to the acquisition of some smaller companies in Europe and Asia.

Revenue generated by our French waste operations increased due to the operating performance mentioned above and also due to several mid-size acquisitions, including the FASSA group (which previously belonged to GTI) and the Neturba group in the Greater Paris area.

Energy Services

Our energy services revenue was €3.2 billion in 2000, an increase of 13.4% over revenue of €2.8 billion in 1999. Organic growth was 9.5%, external growth was 2.6%, and changes in currency exchange rates, particularly the appreciation of the British pound against the euro, added 1.3%. Organic growth derived primarily from new co-generation contracts, the development of other heating and industrial facilities management contracts in France and the expansion of existing businesses in international markets, particularly the United Kingdom, Spain and Portugal. The partnership with EDF, which began to be implemented on December 27, 2000, did not have any effect on our 2000 revenue.

Transportation

Our transportation business recorded revenue of €3.1 billion in 2000, up 28.6% compared with 1999. Of this increase, 13.1% was attributable to organic growth, 11.0% to acquisitions and 4.5% to currency effects deriving from appreciation in the British pound and the Swedish krona against the euro. Organic growth was driven chiefly by Connex's international activities; we generated organic growth of 14.5% outside France. The main growth drivers outside France were the full-year impact of contracts won in 1999 (particularly in Stockholm and Melbourne), as well as the expansion of existing contracts (e.g., through increases in passenger volumes). Organic revenue growth was particularly strong in Scandinavia, eastern Europe, Germany and Australia. Organic growth in France was 9.5%, due largely to the new Saint Etienne contract, which contributed an additional €26 million in revenue in 2000, and a 9.8% rise in revenue at our subsidiary Sud Cars.

FCC

To harmonize the financial information presented in this document with the financial information published by FCC, we have based our discussion of FCC's operating results in 2001 above on FCC's total revenue and operating

income, while the discussion of FCC's operating results in 2000 and 1999 below only take into consideration our proportionate share of FCC's revenue and operating income. As a result, revenue and operating income of FCC presented in the discussion below may not be comparable to the same measures of operating result presented in our 2001 discussion above.

FCC (excluding Proactiva) generated revenue growth of 11% in 2000. Our consolidated 49% share of FCC's revenue was €2.1 billion in 2000. FCC's services business, which generated revenue of €570 million, experienced brisk growth during the year. Its construction activities, aided by very favorable business conditions in Spain, posted revenue of €1.0 billion (up 10.1%). Revenue growth in Spain was approximately 12.5%. FCC's cement business, conducted through its 48% interest in Portland Valderrivas, posted revenue of €330 million (up 54.7%), largely as a result of strong growth in Spain (11%) and the full-year consolidation of U.S.-based Giant.

Operating Expenses

During 2000, operating expense before amortization and depreciation totaled €23.6 billion, compared with €19.2 billion in 1999. Payroll costs grew from €5.9 billion to €7.3 billion, with purchases and external services rising from €10.2 billion to €13 billion. All these increases were attributable primarily to the impact of acquisitions. Purchases and external services accounted for 49.4% of net revenue (compared with 50.4% in 1999 including United States Filter Corporation and Superior Services for the full year), while payroll costs accounted for 28.3% of net revenue (compared with 29.3% in 1999). These trends reflected efficiency gains and tight cost control.

Our weighted average number of employees was 215,000, up from 171,000 in 1999. This increase was primarily attributable to the full-year impact of United States Filter Corporation and Superior Services and the acquisitions made during 2000.

Operating Income

Our operating income for 2000 totaled €1.9 billion, representing an increase of 29.4% compared with 1999. Organic growth was 11%. The effect of changes in currency exchange rates accounted for 6.4% of the growth; the remainder was due to acquisitions made during 2000 and the full-year consolidation of United States Filter Corporation and Superior Services. The operating margin improved slightly from 7.0% to 7.2%.

Our water businesses contributed €1.0 billion to our operating income in 2000, representing an increase of 33% over 1999. Organic growth in operating income was 11.5%. The operating income generated by water activities outside of France and the United States more than doubled due to the impact of the contracts won or acquired since 1999. The water business posted an operating margin of 8.1% compared with 7.3% in 1999. This increase was mainly due to improved cost controls, particularly in our international water operations. The personnel expenses associated with our water business represented 23.6% of 2000 revenue, down from 24.4% in 1999.

Our waste management business contributed €399 million to our operating income in 2000, an increase of 44.5% over operating income of €275 million in 1999. Excluding the effect of acquisitions/disposals and at constant currency exchange rates, our waste-related operating profit grew by 2.2%. Excluding our U.K. operations, however, organic growth in operating income was almost 14%.

Our energy services business contributed €191 million to our operating income in 2000, representing an increase of approximately 14% over 1999. Growth in operating income remained basically in line with revenue growth. The partnership with EDF, which began to be implemented on December 27, 2000, did not have any effect on our 2000 operating income.

Our transportation business contributed €107.8 million to our operating income in 2000, an increase of 14.6% over the previous year. This increase reflected the impact of new acquisitions, the healthy performance of our Stockholm metro operations and contracts in the United Kingdom, which together more than offset a significant increase in diesel oil prices across Europe. Organic growth in operating income was 7.5% in 2000.

Our 49% share of operating income generated by FCC (excluding Proactiva) was €208 million in 2000, an increase of 12.2% from 1999. Organic growth in operating income was 18.9% in 2000. Our consolidated share of FCC's overall growth was less than organic growth due to the sale of a majority interest in FCC's real estate operations, as a result of which we did not continue consolidating the results of these operations in 2000.

Goodwill Amortization

Our goodwill amortization decreased slightly from €367 million in 1999 to €306 million in 2000. The 2000 amount includes a goodwill write-off of €58 million, primarily related to the impairment of the goodwill associated with Onyx's U.K. operations. These operations consist of both dry and wet waste collection, landfill, and waste treatment facilities. The business is conducted with both industrial and municipal customers under short and long-term contracts. During 1999, operating results began to decline due to industry overcapacity and strong competitive pricing pressure. Our U.K. management began to respond to this situation by reducing costs. At the end of 1999, profitability had declined significantly, but our U.K. operations were still sufficiently profitable to recover the carrying value of its long-lived assets, including goodwill. Because operating results continued to decline during 2000, our U.K. management team performed an analysis of the business and overall industry conditions and implemented several additional actions in 2000. These actions included the closure of several treatment facilities, the termination of certain unprofitable long-term municipal contracts and further cost reductions. The actions were taken because management believed that the prevailing industry conditions would continue for the foreseeable future. Management also revised the operating forecast to reflect the estimated effect of its actions and its view of long-term industry conditions. Based upon the resulting forecast of estimated undiscounted future cash flows, management determined that our goodwill was impaired and wrote down an amount of goodwill based upon an estimate of discounted future cash flow. This analysis was performed at the lowest level of identifiable assets. Recurring goodwill amortization amounted to €232 million in 2000, compared with €165 million in 1999. This increase resulted from the full-year consolidation of United States Filter Corporation and our 2000 acquisitions.

Financial Income (Expense)

In 2000, we incurred net financial expense (which includes dividends received, profit or loss on sales of marketable securities, foreign exchange profit or loss and financing costs) of €884 million, compared with €623 million in 1999. The rise in financial expense was attributable principally to the increase in the average net long-term debt resulting from the financing of acquisitions made in 1998 and 1999. The increase in interest costs was offset in part by a reduction of the amortization of the redemption premium of our convertible bonds. Our indebtedness declined as a result of the capital increase and asset disposals that occurred in the second half of 2000. The average cost of our debt was 5.1% in 2000.

Exceptional Items

We posted net exceptional income before tax of €445 million in 2000, compared with net exceptional expense of €181 million in 1999. The amount for 2000 included a total capital gain and "dilution" gain of €799 million, including a €729 million capital gain recorded in connection with the EDF/Dalkia transaction described under "Item 4. Information on the Company–Business Overview–Our Services–Energy Services." This gain more than offset €184 million in costs incurred in connection with anticipated future profitability enhancements. The latter amount related primarily to the closure of unprofitable waste management and energy services businesses as well as the termination of several contracts in the United Kingdom, which, in the aggregate, resulted in costs of €86 million. Of these costs, €68.7 million were related to the waste management segment and consisted primarily of impairments of assets (€32.6 million), losses on contracts we terminated (€9.8 million) and payments or provisions related to disposals of assets and site restoration (€23.2 million) and other miscellaneous costs (€3.1 million). The remaining €17.3 million consisted of losses on contracts we terminated in the energy services business. An additional €63 million in expenses was incurred in connection with the reorganization of our headquarters, of which €45 million was recorded as a restructuring reserve. This amount includes severance costs associated with the consolidation of several regional offices into our new corporate headquarters. The remaining €18 million was expensed over the period as restructuring activities, in addition to existing plans, in our energy and water businesses. Another €4.5 million of costs related to various minor plans were accrued under French GAAP, of which €4.1 million does not comply with the provisions of EITF 94-3. Finally, several non-recurring individual amounts have been recorded at affiliates' levels for a total of €92.5 million.

Tax Expense

Our tax expense in 2000 was €468 million, compared with tax expense of €275 million in 1999. Deferred tax showed a net gain of €7 million in 2000, compared with a net charge of €24 million in 1999.

Following the initial public offering of our shares, we and our French subsidiaries left Vivendi Universal's consolidated tax group. Consequently, our 2000 French tax expense corresponds to the aggregate tax payable by us and our French subsidiaries on an individual basis.

The corporate income tax expense in 2000 amounted to 31.2% of our consolidated profit before tax and amortization of goodwill not deductible for tax purposes (compared to 44.4% in 1999). The level of the effective tax rate was lower than the French statutory rate of 37.77% due largely to the reduced rate of tax payable on the capital gain recorded on the sale of the interest in Dalkia Holding.

Our Share in Net Earnings of Companies Accounted For by the Equity Method

Our share in net earnings of companies accounted for by the equity method amounted to €60.6 million in 2000, up from €44.5 million in 1999. The largest contributions were provided by some of FCC's subsidiaries (€16.9 million), U.K. water distribution companies held through General Utilities (€16.3 million) and U.S.-based water company Philadelphia Suburban (€10.5 million). The inclusion of earnings from FCC's real estate activities and Sanepar-Domino's water distribution activities in Brazil was largely responsible for the growth in this category.

Minority Interest

The minority interest expense totaled €161.4 million in 2000, compared to €93.4 million in 1999. The principal minority interest is related to FCC (€90.2 million), Berliner Wasser Betriebe (€18 million) and Budapest Water (€6 million).

Consolidated Net Income

As a result of the factors discussed above, our consolidated net income was €614.8 million in 2000, compared with a net loss of €42.3 million in 1999. Based on our average number of shares outstanding during the year (275.1 million), net earnings per share was €2.24. Net income excluding exceptional income and related taxes was €342 million, or €1.24 per share, and exceptional income net of tax and minority interests was €273 million, or €0.99 per share.

LIQUIDITY AND CAPITAL RESOURCES

Cash Flows

Net cash flow from operating activities increased by €1.3 billion, from €1.6 billion in 2000 to €2.9 billion in 2001. Net cash flow from operating activities includes funds generated from operations and changes in operating assets and liabilities. Excluding net changes in working capital, which strongly improved in 2001 due to the implementation of a receivables sales program, net cash flow from operating activities rose to €2.0 billion in 2000 and €2.5 billion in 2001. This increase of €502 million was primarily due to an increase in profitability in each of our business segments, which contributed €363 million, and a decrease in borrowing costs of €111 million in 2001.

Net cash flow from investing activities includes cash flows resulting from acquisitions and divestitures of tangible and financial assets, acquisitions and disposals of businesses, equity-method investments and net changes in other investments and marketable securities. Cash outflows from investing activities were €3.4 billion in 2001, compared to an outflow of €1.5 billion in 2000. Cash outflow in 2001 was primarily attributable to an increase in cash used in industrial investments, which totaled €2.9 billion, and in financial investments, which totaled €1.3 billion, net of cash generated by asset disposals, which totaled €392 million. Cash outflow in 2000 benefited from an increase in cash generated from disposals, particularly the sale of an interest in Dalkia to EDF.

Net cash inflow from financing activities was €1.2 billion in 2001, mainly due to an increase in our long-term debt to improve the average maturity of our indebtedness (currently 3.5 years). We also recorded cash inflows totaling €411 million primarily attributable to increases in Dalkia's capital due to the implementation of our strategic partnership agreement with EDF (€177 million) and other financing activities described under "— Sources of Funds" below. In 2000, we recorded €2.7 billion in cash inflows associated with an increase in our share capital that permitted us to reduce our outstanding indebtedness.

Sources of Funds

We meet our long-term financing and refinancing needs through bank loans and debt instruments. To deal with short-term fluctuations in our financing requirements, we issue commercial paper and draw on short-term loan facilities. During 2001, we entered into a number of new financings including:

- A €3 billion syndicated credit facility in March 2001, under which we have drawn €737.5 million in short-term loans that matured in March 2002 and €590 million in long-term loans that mature in March 2006 and bear interest at a floating rate generally based on EURIBOR or LIBOR;

- The issuance of several series of bonds, including €2 billion in bonds due in June 2008 that bear interest at a floating rate based on 3-month EURIBOR (after giving effect to an interest rate swap relating to these bonds), €250 million in bonds due in February 2003 that bear interest at a floating rate based on 3-month EURIBOR, and €500 million in bonds due in November 2005 that bear interest at a fixed rate of 4.87%;

- A sharp increase in the use of our commercial paper program, the maximum amount of which was increased from €2 billion to €4 billion in 2001. As of December 31, 2001, our outstanding commercial paper amounted to €2.0 billion with maturities ranging from 30 to 180 days, with interest capitalized on half of the outstanding principal amount at a floating rate based on EONIA and the other half at a fixed rate; and

- In December 2001, we issued €300 million company-obligated mandatorily redeemable securities of a subsidiary (VEFO – Vivendi Environnement Financière de l'Ouest), which is fully controlled by us. These securities, which mature on December 28, 2006 and are accounted for as minority interests under French GAAP, enabled us to strengthen our financial position.

We used the proceeds of these financial transactions to repay debt that we owed to Vivendi Universal and to refinance our existing debt to extend the average maturity of our outstanding indebetdness. See "Contractual Obligations and Other Commercial Commitments" for a description of our outstanding indebtedness as of December 31, 2001, after giving effect to these refinancing transactions.

We also participated indirectly in the issuance by Vivendi Universal of bonds that are to be repaid either in existing shares of Vinci held by us and Vivendi Universal or cash, at the option of Vivendi Universal. In connection with this transaction, we received a loan from Vivendi Universal in a principal amount of €120 million relating to 1,552,305 shares of Vinci held by our subsidiary Dalkia France. The terms of the loan are identical to the terms of the exchangeable bonds issued by Vivendi Universal, which bear interest at a rate of 1% per year and mature in March 2006. We transferred the economic benefits of the loan to Dalkia France.

To optimize the management of our working capital, we adopted a receivables sales program at the end of 2001 relating to receivables generated by our water business in an aggregate amount of €928 million. Pursuant to this program, in 2001 several of our U.S. water subsidiaries sold receivables amounting to U.S.$155 million and several of our French water subsidiaries sold receivables amounting to €752 million to a French securitization fund. We have retained a subordinated interest in the pool of receivables transferred to the French securitization fund that entitles us to receive collections on the sold receivables after all amounts due to the fund have been fully paid. Under the sale documents, we have agreed to provide billing and collection services in respect of the sold receivables in the ordinary course. We do not have any obligation to guarantee or otherwise provide funds to cover shortfalls in collections. In addition, we sold €520 million in receivables at face value, less charges and expenses, to financial institutions in the context of factoring transactions in 2001. We have no further obligations in respect of the receivables sold to these financial institutions.

Following these transactions, our total outstanding net debt (financial debt net of cash and receivables) stood at €14.3 billion at December 31, 2001. Our net debt consisted primarily of our convertible bonds (€1.5 billion), other bonds and debt instruments (€3.2 billion), bank loans (€3.4 billion) and commercial paper (€2 billion). Our cash and receivables amounted to €2.1 billion at December 31, 2001. Most of our debt instruments and loan agreements contain covenants that require us to maintain certain minimum financial ratios, including historic and forward debt service coverage ratios and interest coverage and debt payout ratios based on annual earnings before interest, taxes, depreciation and amortization, as defined in the relevant agreements. Each agreement contains different ratios and coverage amounts, and would allow our creditors to require us to repay all outstanding amounts in the event we cease to comply with one or more of these covenants. We are currently in compliance with all of the financial covenants set forth in our debt instruments and agreements.

We believe that our future capital requirements, including those for organic growth and certain acquisitions, can be met from operating cash flow, disposals of non-core assets and, if necessary, a moderate increase in debt. We are exposed, however, to certain risks relating to the availability or use of our sources of funds, particularly the risk of a downgrade in our credit ratings. The main credit rating agencies, Moody's and Standard & Poor's, have assigned investment-grade credit ratings to our company. However, on May 3, 2002, Moody's placed our credit rating on watch with negative implications, while on May 7, 2002, Standard & Poor's revised its outlook on our company from stable to negative. A downgrade in our credit ratings could lead to a significant increase in the cost of our outstanding debt and our future borrowing costs, which in turn could negatively affect our financial condition and our ability to incur additional debt to finance our operations or refinance maturing debt in the future. We are currently not subject to any material credit rating downgrade covenants, except for a guarantee that we granted for the benefit of certain lenders of one of our subsidiaries in respect of a €800 million loan, which becomes immediately payable in the event our credit rating is lower than BBB+ (Standard & Poor's) or Baa2 (Moody's). Our credit ratings are currently BBB+ (Standard & Poor's) and A3 (Moody's).

Use of Funds

Capital Expenditures

Capital expenditures totaled €2.9 billion in 2001, representing an increase of 10.2% over capital expenditures of €2.6 billion in 2000. Our capital expenditures were made in our different business segments in the following manner:

- Capital expenditures in our water business amounted to €1.2 billion in 2001 (an increase of 17% over capital expenditures of €1.0 billion in 2000), of which €655 million were for growth-related spending and €533 million were for replacement and maintenance spending;

- Capital expenditures in our waste management business amounted to €794 million in 2001 (a decrease of 8.7% over capital expenditures of €870 million in 2000), of which €343 million were for growth-related spending and €451 million were for replacement and maintenance spending;

- Capital expenditures in our energy services business amounted to €402 million in 2001 (an increase of 11% over capital expenditures of €362 million in 2000), of which €276 million were for growth-related spending and €126 million were for replacement and maintenance spending;

- Capital expenditures in our transportation business amounted to €288 million in 2001 (an increase of 58.5% over capital expenditures of €182 million in 2000), of which €114 million were for growth-related spending and €174 million were for replacement and maintenance spending; and

- The attributable portion of FCC's (49%) and Proactiva's capital expenditures amounted to €207 million (an increase of 12.1% over capital expenditures of €184 million in 2000), of which €109 million were for growth-related spending and €98 million were for replacement and maintenance spending.

Financial Investments

Our financial investments, which consist of equity-method investments and other equity participations, totaled €1.2 billion in 2001, representing an increase of 26.8% over financial investments of €0.9 billion in 2000. Many of our financial investments consist of acquisitions of local entities or interests in local entities in connection with new contracts won outside France. Our financial investments were made in our different business segments in the following manner:

- Financial investments in our water business amounted to €508 million in 2001 (an increase of 209% compared with 2000), primarily relating to our contracts in Prague (€177 million), Görlitz (€57 million), and Bucharest (€35 million) and our contract with HEI, a South Korean industrial group (€71 million);

- Financial investments in our waste management business amounted to €123 million in 2001 (a decrease of 79% compared with 2000, during which a number of acquisitions were made in the United States), including €23 million in connection with our contract with Novartis;

- Financial investments in our energy services business amounted to €303 million in 2001 (compared to €40 million in 2000), primarily relating to the transfer of EDF's energy services operations (€165 million) and our acquisition of Siram (€81.8 million);

- Financial investments in our transportation business amounted to €144 million in 2001 (an increase of 55% compared with 2000), primarily relating to our acquisition of BBA (€48 million), Yellow Transportation (€21.8 million) and Portillo.

Contractual Obligations and Other Commercial Commitments

We have various contractual obligations and other commercial commitments arising from our operations. These obligations and commitments are more fully described in this document under various headings in "Operating and Financial Review and Prospects" as well as in the notes to our consolidated financial statements.

The following table lists the aggregate maturities of our long-term debt and operating leases at December 31, 2001 (in millions of euro):

		Payments Due by Period			
Contractual Obligations	**Total**	**Less than 1 year**	**1-2 years**	**2-5 years**	**After 5 years**
Long-Term Debt(1)	13,134.0	N/A	1,227.4	7,461.8	4,444.8
Operating Leases	2,693.7	349.7	616.3	537.5	1,190.2
Total	16,648.2	469.2	2,014.7	8,123.0	6,041.3

(1) Includes the principal portion of our capital lease obligations.

The following table lists the aggregate expiration amounts of various classes of commitments related to our operations at December 31, 2001 (in millions of euro):

Other Commercial Commitments	**Total Amounts Committed**
Lines of Credit	–
Performance Bonds and Guarantees(1)	3,116.0
Undertakings for Fixed Assets(2)	2,400.0
Fees Payable to Local Authorities(3)	222.9
Other Commercial Commitments(4)	613.0

(1) Includes €0.8 billion in guarantees for the benefit of insurance companies that have agreed to issue performance bonds from time to time in connection with our activities in the United States. There are no outstanding performance bonds issued by these insurance companies.

(2) Pursuant to certain concession contracts with public authorities, we assume responsibility for the replacement of fixed assets of the networks we manage under these concessions. This amount reflects our estimates of the aggregate amount of expenditures required for this purpose over the duration of the relevant contracts.

(3) Reflects the minimum amount of fees payable to local authorities pursuant to certain outsourcing contracts, of which €37.0 million are due in 2002, €32.8 million in 2003, €29.9 million in 2004, €26.8 million in 2005, €23.0 million in 2006 and €73.4 million in 2007 and thereafter.

(4) Reflects the maximum amount of indemnities that we may be required to pay certain previous land owners in the context of a water services contract with local authorities in Berlin, Germany.

The large majority of our performance bonds and guarantees represent guarantees by one company in our consolidated group of the performance obligations of other companies in our consolidated group, typically subsidiaries of the company giving the guarantee. As a result, they represent primarily guarantees of the performance of our own contractual obligations, when considered on a consolidated basis.

We may also be required to acquire the remaining interest in the holding company that owns 57% of FCC's outstanding shares under certain circumstances, the other shareholder in the holding company. In addition, if we purchase the remaining interest in this holding company, the Spanish stock market authorities may require us to launch a public tender offer for the remaining 43% of FCC not held by the holding company. See "Item 3. Risk Factors — Risks Relating to Our Operations — We may be required to sell our interest in FCC or to finance an investment in FCC."

RESEARCH AND DEVELOPMENT, PATENTS AND LICENSES

See "Information on the Company — Business Overview — Research and Development" and "Information on the Company — Business Overview — Intellectual Property."

ITEM 6: DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

DIRECTORS AND SENIOR MANAGEMENT

In accordance with French law applicable to a *société anonyme à directoire et conseil de surveillance*, a form of stock corporation, we have a two-tier management structure pursuant to which a management board (*directoire*) manages our day-to-day affairs under the general supervision of a supervisory board (*conseil de surveillance*), the members of which are elected by shareholders. We refer to the members of our management board and the members of our supervisory board collectively as "directors."

Supervisory Board

The supervisory board has the responsibility of supervising the management of our company. Throughout the year it carries out such inspections as it considers appropriate and is given access to any documents it considers necessary. The supervisory board also reviews the annual report and accounts prepared by the management board and presents its review of the report and accounts to the shareholders at the annual shareholders meeting. It authorizes the management board to take certain actions related to strategic decisions, including consummating transactions that could substantially affect the scope of our activities and executing significant agreements. In addition, under French law, the supervisory board holds certain specific powers, including the power to appoint the members of the management board.

Pursuant to our *statuts*, which were adopted at a shareholders' meeting held on April 21, 2000, the supervisory board must have between three and 24 members. Our supervisory board currently consists of 14 members, four of which are independent members. Our *statuts* provide that each member is elected by the shareholders at an ordinary general meeting of the shareholders for a renewable four year term. Members of the supervisory board can be removed from office by a majority shareholder vote at any time. They meet as often as the interests of our company require. During 2001, our supervisory board met six times. Under the French commercial code, members of our supervisory board can be held civilly liable for unlawful actions and omissions taken in connection with their duties as directors, in particular, for failing to supervise adequately the management of our company. Unlike members of a management board, however, supervisory board members cannot be held liable for unlawful actions of the company. Also unlike members of the management board, supervisory board members are not subject to joint and several liability. Our *statuts* provide that each member of our supervisory board must own at least 750 of our shares.

The following table sets forth the names of the members of the supervisory board, their current function in our company and their principal business activities outside of our company. At meetings held during 2000, Vivendi Universal, as our majority shareholder, elected all current members of the supervisory board, which appointed the members of the management board.

Name	Function in Vivendi Environnement	Principal Business Activities Outside Vivendi Environnement	Expiration Date of Current Term	Date Initially Appointed
Jean-Marie Messier.....	Chairman of the supervisory board	Chairman and CEO of Vivendi Universal	April 2004	April 2000
Eric Licoys.....	Vice Chairman of the supervisory board	Chairman and CEO of Havas Multimedia; COO of Vivendi Universal	April 2004	April 2000
Daniel Bouton.....	Director	Chairman and CEO of Société Générale	October 2004	October 2000
Jean-Marc Espalioux	Director	Chairman of the management board of Accor	September 2004	September 2000
Paul-Louis Girardot	Director	Director of the Committee of the Seine-Normandy Basin Water Authority	October 2004	October 2000
Catherine Gros	Director	Executive Vice President — Public Relations of Vivendi Universal	October 2004	October 2000
Guillaume Hannezo	Director	Senior Executive Vice President and CFO of Vivendi Universal, Vice Chairman of the supervisory board of Viventures Partners	April 2004	April 2000
Richard Heckman.....	Director	Member of the board of directors of K-2, Inc., United Rentals Inc., Station Casino's and Philadelphia Suburban Inc.; Chairman of the Listing Committee of the NYSE	October 2004	October 2000
Esther Koplowitz	Director	Chairwoman of B 1998 SL	September 2004	September 2000
Arthur Laffer.....	Director*	Founding member of the Congressional Policy Advisory Board	September 2004	September 2000
Serge Michel.....	Director*	Chairman of Soficot	October 2004	October 2000
Georges Ralli	Director*	Managing Director, the Lazard Group	October 2004	October 2000
Murray Stuart	Director*	Director of Royal Bank of Scotland Group plc, Old Mutual plc and CMG plc	October 2004	October 2000
Antoine Zacharias.....	Director	Chairman and CEO of Vinci	September 2004	September 2000

* Independent members of supervisory board.

Jean-Marie Messier holds degrees from the Ecole Polytechnique and the Ecole Nationale d'Administration (the "ENA"). After holding several positions in the French Finance Ministry from 1982 to 1988, he became a partner at Lazard Freres & Cie. In 1994, he was appointed President and Chief Executive Officer of Vivendi Universal. Mr. Messier can be contacted at Vivendi Universal, 42 avenue de Friedland, 75380 Paris Cedex 08. Mr. Messier is also a director of Alcatel, BNP Paribas, Compagnie de Saint Gobain, LVMH, UGC, FCC, Vinci, Echostar Communications, USA Networks, The New York Stock Exchange and Vizzavi Europe.

Eric Licoys has degrees in political science, law and economics and has served in senior positions in a variety of companies. From 1962 to 1970, he was successively Deputy Director at Crédit Naval, Crédit Vendome and Banque Occidentale pour l'Industrie et le Commerce. In the 1970s and early 1980s, he served as Chairman and Chief Executive Officer of Société Européenne des Grands Restaurants (Laurent) and Union de Participations Immobilières, Executive Vice President of Banque Occidentale pour l'Industrie et le Commerce and Senior Vice President of Occidentale Finances. He became Senior Vice President at Compagnie Financiere Barclays in 1982 and Chairman and Chief Executive Officer in 1986. In 1990, he was appointed Director and Executive Vice President of Fonds Partenaires Gestion (Lazard Group), where he became Chairman in 1995. He became Chief Operating Officer of Vivendi Universal in 1999. Mr. Licoys can be contacted at Vivendi Universal Publishing, 31, rue du Colisée 75008 Paris. Mr. Licoys is also a director of Banque Eurofin, Cegetel Groupe and Intermediate Capital Group plc.

Daniel Bouton holds a degree in political science and is an alumnus of the ENA. As part of the French financial controllers' civil service corps, he occupied a number of different positions in the French Finance Ministry, including that of Budget Director, between 1988 and 1991. Since 1991 he has worked at Société Générale, serving as Managing Director from 1993 to 1997, and as President from 1997 to the present. Mr. Bouton can be contacted at Société Générale, Tour Société Générale, 17 cours Valmy 92972 Paris, La Defense Cedex. Mr. Bouton is also a director of Schneider Electric and TotalFinaElf.

Jean Marc Espalioux holds degrees in political science, law and economics, is an alumnus of the ENA and served in the French financial controllers' civil service corps from 1978 to 1983. In 1984 he joined Vivendi Universal, where he served as Chief Financial Officer from 1987 to 1996 and as Deputy Managing Director from 1996 to 1997. In 1997 he was appointed to his current position as President of the Management Board of Accor. Mr. Espalioux can be contacted at Accor, Tour Maine Montparnasse 33, avenue du Maine 75755 Paris Cedex 15. Mr. Espalioux is also a director of Air France, Fiat France and Vivendi Universal.

Paul Louis Girardot was a Managing Director of Vivendi Universal until 1998. A specialist in the development of public service outsourcing activities, he has been very involved in the development not only of our water services, but also in telecommunications (particularly radio-telephony) and energy services (particularly co-generation). Mr. Girardot can be contacted at 7, rue de Tilsitt 75008 Paris.

Catherine Gros was trained as a journalist in the French Centre de Formation des Journalistes and the London School of Journalism. She joined Vivendi Universal's communications department in 1990 after having begun her career as a journalist. Ms. Gros can be contacted at Vivendi Universal, 42 avenue de Friedland, 75380 Paris Cedex 08.

Guillaume Hannezo is an alumnus of the Ecole Normale Supérieure, the Paris Institute of Political Science (IEP) and the ENA. He worked in the French Finance Ministry from 1985 to 1993 serving as economics advisor to the French President's office from 1991 to 1993. He then became Director of Strategy and Management Control at Assurances Générales de France, where he was appointed Chief Financial Officer in 1994. He became Chief Financial Officer of Vivendi Universal in 1997. Mr. Hannezo can be contacted at Vivendi Universal, 42 avenue de Friedland, 75380 Paris Cedex 08. Mr. Hannezo is also a director of UGC.

Richard Heckmann, a Harvard Business School graduate, is the founder of United States Filter Corporation and its President since 1990. Prior to founding United States Filter Corporation, Mr. Heckmann was Vice President of Prudential Bache Securities. He has also served as Assistant Director for Finance and Investment at the Small Business Administration in Washington D.C. Mr. Heckmann can be contacted at United States Filter Corporation, 40-004 Cook Street, Palm Desert, CA 92211, U.S.A. Mr. Heckmann is also a director of K-2 Inc., United Rentals Inc. and Philadelphia Suburban Corp.

Esther Koplowitz became Vice President of Construcciones y Contratas in 1991. That company, founded by her father, merged with Fomento de Obras y Construcciones under Ms. Koplowitz's leadership to create FCC. Ms. Koplowitz is also involved in social work through her foundation Ayuda al Desvalido. Ms. Koplowitz can be contacted at FCC, Torre Picasso Plaza Pablo Ruiz Picasso, 28020 Madrid, Spain. Mrs. Koplowitz is also a director of Vivendi Universal.

Arthur Laffer, Ph.D holds degrees in economics from Yale and Stanford Universities. He has a long and distinguished career in academia as well as in public service. He has held professorships at the Universities of Chicago, Southern California and Pepperdine. He has been Economic Director of the Federal Office of Management and Budget (1970), special advisor to the Secretary of the Treasury and to the Secretary of Defense (1972-1977) and a member of the Presidential Council of Economic Advisors (1981 to 1989). Professor Laffer can be contacted at Laffer Investments, Institutional Asset Managers, 5405 Morehouse Drive, Suite 340, San Diego, CA 92121, U.S.A. Mr. Laffer is also a director of MasTec Inc., Neff Corp., Oxigene Inc., Nicholas-Applegate Growth Equity Fund, ProFlowers, eDelights.com, Direct Stock Markets, ValuBond.com, Sonic Telecom, VirtualCom, Pointivity, U.S. Script LLC and Castle Creek.

Serge Michel has spent his entire career in the construction and public works business, having served as Deputy Managing Director and President of SOGEA, President of Vinci, President of CISE and, until 1992, Deputy Managing Director of Vivendi Universal. He is currently President of Soficot, CIAM and Carré des Champs Elysées. Mr. Michel can be contacted at Soficot, 103 boulevard Haussmann, 75008 Paris. Mr. Michel is also a director of Vinci, FCC and Eiffage.

Georges Ralli holds degrees in finance, political science (from the Paris Institute of Political Science (IEP)) and business. He has been a partner of Lazard Frères since 1993, having joined the bank in 1986. He began his banking career at Crédit Lyonnais (1970-1981) and later headed the department of financial negotiations at Crédit du Nord. In 1982 he served as Secretary of the Commission for the Development and Protection of Savings. Mr. Ralli can be contacted at Lazard Frères, 121, boulevard Haussmann, 75008 Paris. Mr. Ralli is also a director of Chargeurs, Silic, Eurafrance, Direct Finance and Eurazeo.

Murray Stuart holds degrees in literature and law from the University of Glasgow, and is also trained as an accountant. Mr. Stuart has worked for International Computers Plc. (as Chief Financial Officer and Deputy Director), Carnaud Metalbox (as Managing Director and President) and Scottish Power Plc. (as President from 1992 to 2000). He has also served as President of Trust Hammersmith Hospitals NHS, an important public health education and research center in London. Mr. Stuart can be contacted at Longacre, Guildford Road, Chobham, Woking, Surrey, GU24 8EA, United Kingdom. Mr. Stuart is also a director of Royal Bank of Scotland Group plc, Old Mutual plc and CMG plc.

Antoine Zacharias has been with Vivendi Universal since 1971. In 1991 he was appointed Managing Director of Vinci, where he has served as Chairman of the Board of Directors of Vinci and of Vinci Deutscheland since 1997. Mr. Zacharias can be contacted at Vinci, 1, cours Ferdinand de Lesseps 92851, Reuil Malmaison, France. Mr. Zacharias is also a director of Eurohypo and Nexity.

Management Board

Under French law and our *statuts*, the management board has broad powers to act on behalf of our company to further our corporate purposes and to define and implement our company's policies, subject to those powers expressly granted by law or our *statuts* to the supervisory board or our shareholders. Pursuant to our *statuts*, the management board must obtain the authorization of the supervisory board to enter into a number of material transactions and to take certain significant actions. However, these restrictions cannot be enforced against third parties who have entered into such a transaction in good faith. Whenever a transaction requires the authorization of the supervisory board and such authorization is refused, the management board may refer the matter to a general meeting of shareholders, at which the shareholders may override the supervisory board and grant the authorization.

Pursuant to our *statuts*, the management board must have at least two but no more than seven members, each of whom shall be appointed for a renewable four year term by a majority of the supervisory board. The chairman of our management board has the power to represent our company before third parties. Our management board currently consists of 6 members. Management board members serve until the expiration of their respective terms, or

until their resignation, death, passing of the legal age limit, appointment as a member of the supervisory board, or removal by the shareholders. Our supervisory board may fill any vacancies on the management board due to resignation or death within two months. The supervisory board also appoints one of the members of the management board as President of the management board. Under French law and our *statuts*, the President of the management board may be removed as President (but not as a member of the management board) at any time by the supervisory board with or without cause. A member of the management board may be removed by our shareholders or our supervisory board. A member of the management board cannot be a member of the supervisory board as well.

The management board meets as often as the interests of our company requires. During 2001, our management board met ten times. Under French law, a member of the management board must be an individual, but need not be a shareholder of our company. There is no limitation, other than applicable age limits, on the number of terms that a member of the management board may serve. Pursuant to our *statuts*, the age limit applicable to each member of the management board is 65 but the supervisory board has the power to extend this age limit to 67. The French commercial code requires the management board to manage our company properly and to avoid actions contrary to our interests. Members of the management board are subject to liability if these requirements are not satisfied. In addition, in some circumstances, management board members can be held jointly and severally liable for damages incurred by third parties as a result of our company's violation of applicable law or our *statuts*. Management board members can be held criminally liable for some serious violations of applicable law by our company.

The following table sets forth the names of the members of the management board, their current function in our company, their principal business activities outside of our company, the date their term is scheduled to expire and the date they were initially appointed. The members of our management board are also our senior managers.

Name	Function in Vivendi Environnement	Principal Business Activities Outside Vivendi Environnement	Expiration Date of Current Term	Date Initially Appointed
Henri Proglio	Chairman of the management board and Chief Executive Officer	None	April 2004	April 2000
Jérôme Contamine	Executive Vice President, Finance	None	April 2004	September 2000
Antoine Frérot.....	Chief Executive Officer of Connex	None	April 2004	April 2000
Denis Gasquet.....	Chief Executive Officer of Onyx	None	April 2004	April 2000
Jean-Pierre Denis	Chief Executive Officer of Dalkia	None	April 2004	April 2000
Andy Seidel	Chief Executive Officer of Vivendi Water North America	None	April 2004	April 2000

Henri Proglio is a graduate of the HEC business school in Paris. He joined Compagnie Générale des Eaux in 1972 and was appointed President and Chief Executive Officer of CGEA in 1990. He was appointed Executive Vice President of Vivendi Universal and President and Chief Executive Officer of Vivendi Water in 1999. He became President of our management board in 2000. Mr. Proglio can be contacted at Vivendi Environnement, 36-38 avenue Kléber, 75116 Paris. Mr. Proglio is also a director of Vinci, FCC and EDF International.

Jérôme Contamine holds degrees from the Ecole Polytechnique, the Ecole Nationale de la Statistique et de l'Administration Economique and the ENA. He served as auditor for the Cour Des Comptes from 1984 to 1988 and held a variety of senior positions with Elf (and later TotalFinaElf) between 1988 and 2000. He became Chief Financial Officer and Deputy Managing Director of our company in June, 2000. Mr. Contamine can be contacted at Vivendi Environnement, 36-38 avenue Kléber, 75116 Paris. Mr. Contamine is also a director of Statoil and FCC.

Antoine Frérot is a graduate of the Ecole Polytechnique and holds a doctorate from the Ecole Nationale des Ponts et Chaussées. He began his career as an engineer and joined Cergrene, a research center, in 1983, becoming a director in 1984. He joined Compagnie Générale des Eaux in 1990, and was appointed Managing Director in charge of public transport of Connex in 1995. Mr. Frérot can be contacted at CGEA-Connex, Parc des Fontaines, 169 avenue Georges Clemenceau, 92735 Nanterre Cedex.

Denis Gasquet is a graduate of the Ecole Polytechnique and the Centre de Perfectionnement aux Affaires. From 1979 to 1989, he served in a variety of positions in the Office National des Forets. He joined Compagnie Générale des Eaux in 1989, becoming Chief Executive Officer of Onyx in 1996. Mr. Gasquet can be contacted at CGEA-Onyx, Parc des Fontaines, 163-169 avenue Georges Clemenceau, 92735 Nanterre Cedex.

Jean-Pierre Denis is a graduate of the HEC business school in Paris and the ENA. He joined the French financial controllers' civil service corps, and, afterwards, was appointed deputy director of the Paris mayor's office (1992-1995) and deputy general secretary of the office of the President of the French Republic (1995-1997). He joined Compagnie Générale des Eaux in 1997, becoming Chief Executive Officer of Dalkia in 1999. Mr. Denis can be contacted at Dalkia, Quartier Valmy-Espace 21, 33 Place Ronde 92981, Paris, La Defense Cedex.

Andy Seidel holds a B.S. in chemical engineering from the University of Pennsylvania and an M.B.A. from the Wharton School. He helped found United States Filter Corporation and served as President and Chief Operating Officer of its water and waste water group when it was acquired by Vivendi Universal in 1999. Mr. Seidel can be contacted at United States Filter Corporation, 40-004 Cook Street, Palm Desert, CA 92211, U.S.A.

COMPENSATION

The members of our supervisory board received the following compensation during the 2001 fiscal year for services to our company and its subsidiaries, including compensation in kind and compensation paid for attending meetings of our supervisory board (*jetons de présence*):

	Compensation paid (in €) by	
	Our company	Our subsidiaries
Jean-Marie Messier	43,750	24,392
Eric Licoys	31,250	25,408
Daniel Bouton	31,250	–
Jean-Marc Espalioux	43,750	–
Paul-Louis Girardot	31,250	7,622
Catherine Gros	31,250	–
Guillaume Hannezo	40,625	17,784
Richard Heckmann	31,250	–
Esther Koplowitz	40,625	–
Arthur Laffer	31,250	–
Serge Michel	40,625	–
Georges Ralli	40,625	–
Murray Stuart	31,250	–
Antoine Zacharias	31,250	–

The members of our management board received the following gross compensation (including compensation in kind) during the 2001 fiscal year for services to our company and its subsidiaries:

	Compensation paid (in €) by	
	Our company	Our subsidiaries
Henri Proglio	997,313	55,670
Jérôme Contamine	383,084	15,000
Jean-Pierre Denis	497,115	6,860
Antoine Frérot	483,810	10,213
Denis Gasquet	466,790	19,204
Andrew Seidel	856,920	–

BOARD PRACTICES

None of our directors and senior managers are parties to contracts with our company or its subsidiaries that provide for the grant of benefits upon the termination of their employment.

Our supervisory board has established three independent committees–an audit and transaction committee, a directors' committee and a commitment committee:

- the audit and transaction committee reviews our financial statements before they are submitted to our supervisory board; transactions between us and Vivendi Universal; our accounting policies and methods; the quality of our internal control procedures and the working programs of our internal and external auditors. As part of its mission, the committee is entitled to meet with the statutory auditors and senior management responsible for preparing the statements and internal procedures without the presence of the other members of the supervisory board and the members of the management board. The audit and transaction committee currently consists of Jean-Marc Espalioux (chairman), Guillaume Hannezo and Georges Ralli. The audit and transaction committee held 3 meetings during 2001.

- the directors' committee reviews the compensation of our directors and senior managers and our policies relating to the granting of options and subscription rights on our shares to our executive officers. The committee must also be consulted on the selection of our directors. The directors' committee currently consists of Jean-Marie Messier (chairman), Esther Koplowitz and Serge Michel. The directors' committee held 3 meetings during 2001.

- the commitment committee reviews and advises the supervisory board on requests made by the management board for the approval by the supervisory board of any guarantees and other liabilities for third-party obligations to be issued or assumed by our company. The commitment committee also receives a periodic report on the execution of these commitments for third-party obligations. The commitment committee currently consists of Jean-Marc Espalioux (chairman), Guillaume Hannezo and Georges Ralli. The commitment committee held its first meeting in February 2002.

In addition, our company has created an executive committee that is consulted and makes specific proposals on the main issues facing our company. The executive committee comprises all of the members of our management board and ten other members of senior management from each of our four operating divisions and each of our centralized corporate departments. Each member of the committee takes the necessary actions to ensure that the guidelines adopted by the committee are implemented in the relevant operating division or corporate department for which it is responsible.

EMPLOYEES

As of December 31, 2001, we employed approximately 295,000 people worldwide (including 100% of the employees of FCC and Proactiva). Our weighted average number of employees (including our proportional share of employees in operations that are proportionally consolidated by our company) was approximately 239,000 as of December 31, 2001 (compared to 215,000 in 2000 and 171,000 in 1999). Approximately 10% of our employees are members of management and 53% are less than 40 years old. Excluding the effects of changes in our consolidation of companies, our employees increased by over 9,000 in 2001.

The following table shows the distribution of our employees by activity and geographic location as of December 31, 2001:

	Water	Waste	Energy Services	Transportation	FCC*	Total	%
Europe	55,068	46,381	34,064	46,314	45,361	227,188	76.9%
of which France	*26,694*	*29,903*	*17,970*	*19,628*	*151*	*94,346*	*32%*
North America	17,546	8,921	–	1,200	1,085	28,752	9.7%
South America	8,875	4,451	2,116	294	6,313	22,049	7.5%
Africa/Middle East	2,099	4,963	–	138	34	7,234	2.5%
Asia/Pacific	2,118	6,079	366	1,500	–	10,063	3.4%
Total	85,706	70,795	36,546	49,446	52,793	295,286	100%
%	29%	24%	12.4%	17%	17.9%	100%	

* Includes 100% of the employees of companies that are proportionally consolidated by our company, including FCC (in which we hold an indirect 27.9% interest) and Proactiva (in which we hold a direct 50% interest).

Our goal is to guarantee sustained economic growth accompanied by quantitative and qualitative employment improvement, an ambitious policy to manage our human resources and greater social cohesion, while at the same time being actively involved with our employees in solidarity actions.

Promoting capabilities at a local level

The environmental services business is essentially a local business that is organized around multiple autonomous units that are responsible for the improvement of their own local environments. These units must be able to anticipate the needs of customers and provide innovative services. We encourage decentralization in the management of our employees and favor promotion within our company by helping each employee to develop his or her sense of autonomy and responsibility and to become actively involved in our business and in the evolution of his or her professional career. Because we consider that our employees are our true representatives with our clients, we pay particular attention to the development of their skills within our company.

Favoring the training of all of our employees

Our investments in employee training result from our strong ambition to pursue the economic and social development of our company, which in turn benefits our employees and our customers. Our investments in employee training represented approximately 2% of total wages paid worldwide by our company and approximately 2.5% of total wages paid in France in 2001. More than half of our employees around the world benefited from at least one of our training programs in 2001.

Our employee training programs seek to achieve a number of objectives. Employee training increases the technical performance and profitability of our company by identifying and developing the capabilities of our employees in anticipation of the foreseeable evolution of our business. It also enables us to optimize the quality of services offered to our customers due to the availability of employees that are continuously more competent, diverse and capable of generating synergies, particularly in the preparation and implementation of industrial projects in which our social engineering is well recognized and appreciated. Our training programs also reinforce the identity and the cohesion of our company and encourage the mobility of our employees, including on an international level.

The main tools of our training programs are the *Institut de l'Environnement Urbain* (Institute of Urban Environment or IEU) and, more recently, our network of establishments and partnerships that have been created around the IEU in a number of regions throughout the world. Our establishments and partnerships are located in the United Kingdom, Germany, Australia, the United States, Gabon, Hong Kong, Malaysia and we are currently in the process of opening new ones in the Czech Republic and Morocco. The IEU is involved in all levels of training, while favoring vocational training that enables our employees to obtain degrees, including the CAP, the *bac professionel* and the university diplomas created in coordination with the Universities of Cergy-Pontoise and Paris-Dauphine and the ESSEC in France. With its 250 graduates, the IEU also contributes to the development of the recognition of professional training in partnership with the French National Education department, in the same manner as Dalkia has done in partnership with the French Ministry of Employment. In 2001, the IEU inaugurated the "Water" and "Energy" departments, which join the "Property" and "Transportation" departments. The IEU is now able to deliver global training programs covering all aspects of the environmental services business. The IEU is capable of providing long-term training, internships and seminars to 710 people each year and has also become a training center for apprentices (411 apprentices trained in 2001), a professional training center (5,000 interns received in 2001) and a center for research and dialogue uniting all of our employees.

Organizing mobility

One of the main elements of our social policies is the mobility of our employees, which we organize both at a professional level within an operating division as well as at a company-wide level within our various divisions and geographic locations.

We have established a common classification system for our 30,000 executives around the world, which facilitates the management and follow-up of their careers, while at the same time adapting to the development of our activities and the dynamism of our organization. We have also taken other measures to disseminate information on our company among our employees, including, for example, the creation of an internet site that proposes employment positions within our company to enhance our employees' information on available positions within our company. We have also created a pension fund for our international executives guaranteeing pension coverage throughout their professional life to promote the development of international careers within our company. We are also creating a contingency pooling system in order to advocate, in each country, interesting coverage levels for retirement, disability and death, as well as to group existing retirements plans.

Innovating

We make commitments and implement actions that go beyond our regulatory and contractual obligations in several areas. Regarding health and security, we take voluntary actions and deploy innovating means to create a culture of prevention that will lead to a higher degree of security, risk control and health protection at our work sites and to improved working conditions.

In terms of profit sharing, we intend to establish a corporate savings plan that is available to the largest possible number of our employees. We have also created a social observatory that has been assigned to produce data, studies and research and conduct experiments that enable us to address current socioeconomic issues facing our employees around the world.

Becoming involved in the local environment

As a result of the individual and collective dedication of our employees, we make significant contributions to local or national communities by showing our commitment and solidarity, in particular in the most disfavored areas. Our employees are very active in their communities in developing countries, particularly by participating in the emergency aid missions of Waterforce, through which approximately 50 of our employees provided aid and assistance to disaster areas in 2001. Our employees' involvement is also illustrated by their participation in education activities for local populations regarding environmental preservation and sanitary issues.

SHARE OWNERSHIP

None of our directors and senior managers owns 1% or more of our shares. Our directors and senior managers as a group own less than one percent of our shares. As of December 31, 2000, our directors and senior managers as a group owned options to purchase 295,410 of our shares with an exercise price of €32.50, which vest in June 2003 and expire in June 2008. In addition, during 2001 we granted our directors and senior managers options to subscribe shares of our company as follows:

	Number of Shares	Exercise Price	Expiration Date	Vesting Date
Henri Proglio	208,000	€42	February 8, 2009	February 9, 2004
Jérôme Contamine	41,600	€42	February 8, 2009	February 9, 2004
Jean-Pierre Denis	41,600	€42	February 8, 2009	February 9, 2004
Antoine Frérot	41,600	€42	February 8, 2009	February 9, 2004
Denis Gasquet	41,600	€42	February 8, 2009	February 9, 2004
Andrew Seidel	41,600	€42	February 8, 2009	February 9, 2004

As of December 31, 2001, none of the options granted to our directors and senior managers had been exercised.

On June 21, 2000, our shareholders gave our management board a three-year authorization to grant options to purchase or to subscribe to shares of our company to members of our management and other employees. The shares purchasable upon exercise of the options must be either newly issued or held as treasury shares following the implementation of a share repurchase program. The purchasable shares may not represent, in the aggregate, more than 2.5% of our total capital.

Pursuant to this authority, on June 23, 2000 our management board decided to implement an "outperformance" stock option program. Under the program, we granted 30 of our principal managers options to purchase 780,000 treasury shares at €32.50 per share. The options will become exercisable if, three years after they are granted, the market performance of our shares has exceeded that of our main competitors by not less than 25%. Options granted pursuant to this plan will expire in June 2008. As of December 31, 2001 10,000 options had been exercised.

On February 8, 2001, our management board decided to implement a stock option plan pursuant to which 1,500 of our employees will be entitled to receive options to subscribe to a total of 3,462,000 of newly-issued shares of our company at €42 per share, which was the fair market value of our shares at the time the options were granted. Options granted pursuant to this plan will expire in February 2009. As of December 31, 2001 none of these options had been exercised.

ITEM 7: MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

MAJOR SHAREHOLDERS

Vivendi Universal owns 218,278,926 of our shares, representing 63.05% of our total share capital. SNEGE, a wholly owned subsidiary of Vivendi Universal, held 99.99% of our shares from the time of our incorporation in 1995 until March 31, 1999, when Vivendi Universal acquired 100% of our shares for their nominal value in a series of transactions that were completed on April 9, 1999. In July, 2000, Vivendi Universal's interest in our company was reduced to approximately 63% as a result of an initial public offering in France and an international private placement of our shares and the conversion of our convertible bonds into our shares. Following the public offering, private placement and bond conversion, Vivendi Universal purchased an additional 9% of our shares on the open market, increasing its interest in our company to approximately 72%.

On February 8, 2001, Vivendi Universal issued €1.809 billion principal amount of bonds that are exchangeable for shares of our company held by Vivendi Universal, representing 9.3% of our share capital. The 2% five-year bonds were issued at a price of €55.90, a 30% premium to the closing price of our shares on Euronext Paris on February 7, 2001. Each bond is exchangeable for one of our shares.

On December 4, 2001, Vivendi Universal sold 32.4 million of our shares, representing 9.3% of our total share capital, on the open market at a price of €38 per share. On December 17, 2001, we distributed one free warrant for each of our 346,174,955 shares to persons who held our shares on December 14, 2001. The warrants are listed on the *Premier Marché* of Euronext Paris. Subject to adjustments, each 7 warrants will entitle the holder to subscribe one share of our company at a subscription price of €55 per share. Altogether, the warrants may be exercised for up to 49,453,565 of our shares, subject to anti-dilution adjustments. The warrants may be exercised at any time from December 17, 2001 to and including March 8, 2006. As of December 31, 2001, 5,719 warrants had been exercised, which resulted in the issuance of 817 new shares and an increase in share capital of €11,029.50 Warrants distributed in respect of shares held in the form of ADSs were sold on Euronext Paris by The Bank of New York, acting as depositary for our ADSs, and the proceeds were distributed to holders of ADSs. As a result of the issuance of our warrants, Vivendi Universal may subscribe and purchase shares representing up to 9.3% of our total share capital.

In March 2002, Vivendi Universal publicly stated that it may cease consolidating the financial accounts of our company in the future in order to clearly distinguish its media and communications business and its environmental services business, but that it would remain our main shareholder. Under applicable French and U.S. accounting principles, Vivendi Universal would need to hold less than a majority of our shares in order to not consolidate our financial accounts. Vivendi Universal also indicated that it had not fixed any timetable for any reduction in its share ownership in our company.

To the best of our knowledge, no person other than Vivendi Universal holds 5% or more of our shares. Vivendi Universal does not have different voting rights than our other shareholders except by virtue of the greater number of shares it holds. We believe that approximately 32% of our outstanding shares are held by a large number of institutional investors, including 10% held by French institutional investors and a significant portion by UK institutional investors, and the remaining 5% are held by individual investors. As of December 31, 2001, our treasury shares represented approximately 1.25% of our share capital. We believe that we had approximately 300,000 shareholders as of November 19, 2001.

We estimate that less than 5% of our shares are currently held in the United States by fewer than 1,000 holders.

RELATED PARTY TRANSACTIONS

Formation

Vivendi Universal created our company in 1999 by grouping together the majority of its existing environment-related operations as follows:

- transferring to us its 49% interest in the Spanish company B 1998 SL, a holding company that owns 56.53% of FCC, at market value (€691 million);

- contributing to us its 100% interest in Compagnie Générale d'Entreprises Automobiles for €633.9 million, its 100% interest in Dalkia Holding for €915.0 million, its 4.19% interest in Dalkia for €58.9 million, its 100% interest in Compagnie Générale des Eaux for €1,307.7 million and its 14.3% interest in Philadelphia Suburban Corporation for €51.9 million. Each contribution was made for the book value of the interest contributed. On the same date, we transferred the interests in Compagnie Générale des Eaux and Philadelphia Suburban Corporation to Vivendi Water at book value in exchange for shares of Vivendi Water stock; and

- transferring securities representing its interest in United States Filter Corporation to Vivendi Water for €2.7 billion.

As of December 31, 1999, at the closing of these transactions, Vivendi Universal owned 100% of our capital and, after various debt transfers within the environment sector, our company (exclusive of our subsidiaries) owed Vivendi Universal €8,122 million, net of loans owed by Vivendi Universal in connection with the convertible bonds in an aggregate amount of €2,807 million.

Vivendi Universal also transferred a number of intangible water assets, including the brand "Compagnie Générale des Eaux," the related logo and various related trademarks to Compagnie Générale des Eaux.

Transfer of Water Distribution and Treatment Operations to Compagnie Générale des Eaux

Vivendi Universal sold its water-related operations in France (with the exception of certain water-related contracts, as described below) to our wholly-owned subsidiary Compagnie Générale des Eaux at book value in a transaction that took effect on November 1, 1999 (the "water transfer"). For accounting purposes, the water transfer was made effective as of January 1, 1999.

Some of Vivendi Universal's contracts to provide water-related services contain provisions that limit its ability to transfer those contracts without the permission of the other parties. Vivendi Universal has transferred to us all assets and liabilities associated with those contracts that it was permitted to transfer, as well as the right to receive the operating income generated after January 1, 1999 under those contracts. Accordingly, the operating income generated by Vivendi Universal's water operations after January 1, 1999 was transferred to Compagnie Générale des Eaux.

During 2000 and 2001, Vivendi Universal transferred to us the remaining contracts as it received the required consents from the other parties to these contracts. In 2000, Vivendi Universal transferred to us contracts with a book value of €240 million, while in 2001 the book value of contracts transferred to us was €2.9 million. As of December 31, 2001, Vivendi Universal had not yet transferred 90 contracts with a book value of €22.2 million, representing approximately 0.02% of the water-related operations transferred by Vivendi Universal to Compagnie Générale des Eaux.

Vivendi Universal has agreed that, upon expiration of any contracts not transferred to us, our company, and not Vivendi Universal, will be entitled to submit a bid for the renewal of these contracts. Vivendi Universal has also agreed that it will not bid for water contracts with public authorities for 25 years from the execution of the transfer agreements, and will assist us in obtaining new contracts and renewals of existing contracts. As a result, we believe that the renewal ratio of contracts not transferred to our company by Vivendi Universal will not vary significantly from the renewal ratio of contracts that have been transferred to our company.

Financial Agreements

We have entered into a number of agreements with Vivendi Universal and some of its affiliates in connection with our formation and the initial public offering of our shares. These agreements, which establish the financial relationship between Vivendi Universal and our company, include:

- an intercompany short-term loan agreement;

- an infrastructure renewal and maintenance guarantee agreement relating to our water and heat distribution activities; and

- a counter-guarantee agreement related to guarantees granted by Vivendi Universal in favor of our subsidiaries on or prior to July 20, 2000.

Our supervisory board approved these contracts on June 19, 2000.

We have also entered into a number of indebtedness and other financial transactions with Vivendi Universal that are not related to our formation, including an interest rate swap and a loan relating to a bond issued by Vivendi Universal that is exchangeable for shares of Vinci held by one of our subsidiaries.

Loan Agreement

In connection with the contribution and sale by Vivendi Universal to us of its interests in several companies in the course of our formation, at December 31, 1999, our company (exclusive of our subsidiaries) owed Vivendi Universal €8.1 billion (net of debts owed by Vivendi Universal in connection with the convertible bonds) through a shareholder's current account, which had been reduced to €1.2 billion as of December 31, 2000.

On June 20, 2000, this shareholder's account was consolidated for a period of five years under a credit line extended to us by Vivendi Universal for a maximum amount of €10.5 billion, less €2.4 billion in net proceeds of the increase in our capital stock effected in connection with our initial public offering. Amounts drawn under this €8.1 billion credit line are repayable by us to Vivendi Universal at maturity on December 31, 2004, except that if Vivendi Universal ceases to hold at least 50% of our shares, we would be obligated to fully repay the amounts drawn immediately. On May 2, 2001, we reimbursed in full all outstanding amounts due by our company to Vivendi Universal under this shareholder's account credit line.

Under the terms of this agreement, amounts made available to us by Vivendi Universal under this credit line bear interest at a rate of 5.70% per annum from January 1, 2000, less a fixed quarterly amount of €10.3 million during five years, except in the event of a default or a public tender offer for our company. During 2001, we paid Vivendi Universal a total net amount of €38.5 million under the terms of this credit line, compared to €408.1 million in 2000.

We and Vivendi Universal have entered into an agreement to amend several provisions of the credit line agreement on the basis of valuation criteria at December 12, 2001, which include:

- a reduction in the notional amount of our interest rate swap agreement with Vivendi Universal by €1.7 billion (resulting in a notional amount of €3.3 billion), subject to the payment by our company of a cash settlement amount equal to €58 million, which corresponds to the market value of the cancelled notional amount of our interest rate swap agreement (see "—Interest Rate Swap Agreement"); and

- a decrease in the amount of the fixed quarterly payments made by us under the credit line agreement from €10.3 million to €5.15 million, in exchange for an indemnity payment by Vivendi Universal to our company equal to €58 million, which corresponds to the present value of the future payments foregone by our company.

In addition, the aggregate amount available under the credit line will be increased, subject to the maximum total amount available, each time that a holder of our exchangeable bonds exercises its right to exchange its bonds into shares of Vivendi Universal on the basis of the principal amount due and accrued interest on its bonds. We have agreed to exercise our right to redeem these exchangeable bonds prior to their maturity if instructed to do so by Vivendi Universal. We may exercise this early redemption right at any time after January 1, 2002.

Guarantee Agreement

In connection with the formation of our company and Vivendi Universal's contribution or sale to us of its interests in its water and energy services operations, we have replaced Vivendi Universal as managing partner (*associé commandité*) of substantially all Vivendi Universal's water and energy services subsidiaries. As managing partner of these subsidiaries, we have assumed Vivendi Universal's obligations to reimburse those subsidiaries for expenses related to the maintenance and replacement of equipment, in exchange for annual indemnity payments and statutory dividends from these subsidiaries.

As managing partner of the subsidiaries, we have the power to appoint managers (*gérants*). We are also jointly liable for those subsidiaries' obligations. Under a guarantee agreement dated June 20, 2000, Vivendi Universal will pay us up to €381 million for any loss that we suffer over a period of 12 years as a result of our undertaking to reimburse the subsidiaries for expenses associated with the maintenance or replacement of equipment. This guarantee covers both recurring expenses (those incurred in accordance with budgeted amounts and charges recorded in previous years) and exceptional expenses. Recurring expenses are guaranteed up to an initial limit of €15.9 million a year (subject to adjustment), a limit that is indexed to the cost of equipment maintenance and repair. The maximum total amount we can recover for recurring expenses is €228.7 million. Exceptional expenses are guaranteed up to a maximum total amount of €381.1 million less any sums already paid to us under the guarantee. If the amount we claim under this provision is over €228.7 million, we will repay the excess to Vivendi Universal over a period of five years.

In the event of a successful bid for our company that is not approved by our management board, Vivendi Universal's obligations under the guarantee agreement will automatically terminate. However, our obligation to repay Vivendi Universal any amount due in excess of €229 million will be unaffected by such an event.

Counter-Guarantee Agreement

Prior to our formation, Vivendi Universal granted a variety of guarantees (subject to a cap of €6 billion) to third parties on behalf of our subsidiaries, generally in connection with those subsidiaries' bids for public auctions, transfers of contracts by Vivendi Universal to Vivendi Water, receipt of funds from bank financing and sales of assets (the "subsidiary guarantees"). As of December 31, 2001, the total amount potentially due under the subsidiary guarantees was approximately €2.3 billion.

Due to the potentially high cost of renegotiating each subsidiary guarantee, we have entered into a counter-guarantee agreement dated June 20, 2000, pursuant to which we will indemnify Vivendi Universal for any costs, losses or expenses it incurs in connection with the subsidiary guarantees. Under the counter-guarantee agreement, we are also required to use our best efforts to obtain the consent of beneficiaries of the subsidiary guarantees to the transfer of the subsidiary guarantees from Vivendi Universal to us. When such a transfer occurs, we are released from our obligations under the counter-guarantee agreement as they relate to the transferred guarantee.

Interest Rate Swap

We entered into an interest rate swap agreement with Vivendi Universal dated September 15, 2000 that covers a notional amount of up to €5 billion, which expires on December 31, 2004. Pursuant to this agreement, Vivendi Universal pays a floating rate based on 3-month EURIBOR and we pay a fixed rate of 5.20% per annum, in each case in respect of the notional amount. As a result, we will pay a fixed rate of 5.20% per annum on debt we incur to refinance our debt to Vivendi Universal. As of December 31, 2001, the amount covered by the agreement was €3.3 billion.

Vinci Exchangeable Bond

We also participated indirectly in the issuance by Vivendi Universal of bonds that are to be repaid either in existing shares of Vinci held by us and Vivendi Universal or cash, at the option of Vivendi Universal. In connection with this transaction, we received a loan from Vivendi Universal in a principal amount of €120 million relating to 1,552,305 shares of Vinci held by our subsidiary Dalkia France. The terms of the loan are identical to the terms of the exchangeable bonds issued by Vivendi Universal, which bear interest at a rate of 1% per year and mature in March 2006. We transferred the economic benefits of the loan to Dalkia France.

Other Agreements

FCC Agreement

Vivendi Universal transferred to us its 49% interest in B 1998 SL, a holding company that owns 57% of FCC, a Spanish company listed on the Madrid stock exchange, for €691 million. Consequently, we indirectly own 27.9% of FCC. Ms. Esther Koplowitz, a member of our supervisory board and a member of Vivendi Universal's board of directors, holds the remaining 51% of B 1998 SL.

On October 6, 1998, Vivendi Universal and Ms. Koplowitz signed a shareholders' agreement establishing shared control of the economic activity of B 1998 SL, FCC, and FCC's subsidiaries (the "FCC group"). Upon the transfer by Vivendi Universal of its interest in the FCC group to Vivendi Environnement, we replaced Vivendi Universal as a party to this shareholders' agreement. Specifically, the agreement provides that Vivendi Environnement and Ms. Koplowitz are to be equally represented in the main executive bodies of the FCC group, i.e., the boards of directors and executive committees of FCC and its subsidiaries. B 1998 SL's articles of association also provide that certain important decisions with respect to the FCC group, such as increases or decreases of capital, amendments to articles of association, mergers, spin-offs or dissolutions, require supermajority shareholder approval. None of those decisions, therefore, could be taken without the consent of both Vivendi Environnement and Ms. Koplowitz.

Under the terms of an option agreement also dated October 6, 1998, Ms. Koplowitz has an option to sell to Vivendi Universal, at any time through October 6, 2008, Ms. Koplowitz's 51% interest in B 1998 SL at a price based on the average market value of FCC's shares during the three months preceding the exercise of the option (up to seven times FCC's EBITDA or 29.5 times FCC's earnings per share for the previous year, whichever is lower).

Vivendi Universal has agreed to sell to us, and we have agreed to buy, Ms. Koplowitz's 51% interest in B 1998 SL if Ms. Koplowitz exercises the option. If we purchase this interest, we will own 100% of B 1998 SL. Under these circumstances, Spanish law would require us to launch a public tender offer for the 43.5% of FCC not owned by B 1998 SL. The price per share of the offer would be determined by the Spanish stock exchange authorities. If based on the price of FCC's common stock on February 28, 2002, the price for the 43.5% interest would be approximately €1.29 billion, subject to adjustment by the Spanish stock exchange authorities.

B 1998 SL's statuts provide for reciprocal rights of first refusal in the event of the sale of the B 1998 SL shares to a third party. In the event Vivendi Universal ceases to own a majority of our capital, Ms. Koplowitz has the right to buy our interest in B 1998 SL at a price equal to the lower of the purchase price we paid to Vivendi Universal and the market value of the interest in B 1998 SL. Based on the market value of our interest in B 1998 SL as of April 18, 2002, the price payable by Ms. Koplowitz for our interest would have been equal to the purchase price we paid to Vivendi Universal (€691 million).

Services Agreement

In 2000, we paid Vivendi Universal €40.4 million for the services it rendered pursuant to a services agreement, which expired on December 31, 2000. This payment was based on the cost to Vivendi Universal of providing those services. Our need for services of the sort described above decreased significantly upon completion of our corporate headquarters in 2001, and we did not enter into any services agreements with Vivendi Universal in 2001.

Trademark License Agreement

We entered into a trademark license agreement with Vivendi Universal on June 20, 2000 (with effect as of January 1, 2000) that grants us the right to use the trademark "Vivendi Environnement" in France and in all other countries in which the trademark is registered for a license fee of €30,490 per year, excluding taxes. Under the terms of the agreement, we may not grant a sub-license to any of our subsidiaries. The license has a term of five years, and is renewable automatically for sucessive 5-year periods, unless terminated by either party with six months' prior notice. If Vivendi Universal ceases to hold, directly or indirectly, shares carrying a majority of our voting power, the agreement will be automatically terminated, and we will be required to change our corporate name, and to otherwise stop using the trademark, within two years.

Domino Holding Sale

In connection with the formation of Proactiva, our 50/50 joint venture with FCC, we acquired Vivendi Universal's 30% interest in Domino Holding, a Brazilian water firm, in 2000.

Sale of Plane to Richard Heckmann

In May 2001, United States Filter Corporation sold a used Canadair Challenger aircraft to Richard Heckmann, President of United States Filter Corporation and a member of our supervisory board, for $8,000,000.

ITEM 8: FINANCIAL INFORMATION

CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

Please refer to the consolidated financial statements and the notes and exhibits thereto in Item 18.

Barbier Frinault & Cie., Member of Andersen Worldwide and one of our two independent auditors, has informed us that on March 14, 2002, an indictment was unsealed charging Arthur Andersen LLP, the U.S. Member of Andersen Worldwide, with federal obstruction of justice arising from the U.S. government's investigation of Enron Corp. Arthur Andersen LLP has indicated that it intends to contest vigorously the indictment.

As a U.S.-listed company, we are required to file with the SEC annual financial statements audited by our independent statutory auditors. Our access to the U.S. capital markets and our ability to make timely SEC filings could be impaired if the SEC ceases accepting financial statements audited by Members of Andersen Worldwide or if for any reason any Member of Andersen Worldwide performing auditing services for us is unable to perform such services for us.

Litigation

In the ordinary course of our business, we are involved, from time to time, in various legal proceedings. We maintain liability insurance and believe that our coverage is sufficient to protect us adequately from any material financial loss as a result of any legal claims made against us or in which we become involved.

On June 21, 2000, the French competition commission opened an investigation into the state of competition in drinking water and wastewater treatment markets in France. On February 27, 2001, Compagnie Générale des Eaux was served with a complaint alleging that it had illicitly cooperated with its competitors in the course of bidding for certain water services contracts, particularly by declining to bid for contracts that were also subject to bids by joint ventures Compagnie Générale des Eaux had formed with other water companies. In June 2001, Compagnie Générale des Eaux responded to the complaint by explaining, on a case-by-case basis, its lawful reasons for declining to bid for the contracts in question. In January 2002, Compagnie Générale des Eaux submitted an additional brief to the court in response to the conclusions submitted by the French competition commission. We cannot predict what the final result of this proceeding will be nor the amount of financial penalties, if any, that might be imposed in connection with this proceeding.

On April 12, 2000, a large number of French construction companies, including Sade-CGTH, a subsidiary of Vivendi Water, received a complaint from the French competition commission alleging that the construction companies had unlawfully agreed to restrict competition in bidding for 44 public sector construction contracts in the Paris metropolitan area. Sade-CGTH filed an answer to the complaint denying the allegations on September 13, 2000. The French competition commission filed a supplemental complaint in November 2001, which replaces its original complaint and reduces the number of construction contracts subject to scrutiny to 32 contracts, 4 of which involve Sade-CGTH. In January 2002, Sade-CGTH and the other construction companies filed an answer to the complaint which contests the commission's complaint on the merits and on the basis of irregularities in the complaint procedure that have affected the companies' right of defense. We cannot predict what the final result of this proceeding will be nor the amount of financial penalties, if any, that might be imposed in connection with this proceeding.

On November 27, 1998, the French general direction for consumers, competition and the prevention of fraud ("DGCCRF") obtained an order from a French court authorizing it to perform an inspection on the premises of our transportation subsidiaries CGEA Transport, Transdev, CGFTE and ViaGTI, with the objective of obtaining elements of proof relating to possible anti-competitive practices in the urban transportation market. The DGCCRF proceeded to perform these inspections and seizures on December 17, 1998. We appealed the order of the French court authorizing these inspections, which was rejected by the French Supreme Court on June 14, 2000. We also filed a motion with the French court that authorized the inspections contesting the legality of the procedures used by the DGCCRF in performing the inspections and seizures. The French court declined its jurisdiction to decide on the legality of the procedures on March 24, 2000, on the grounds that this subject-matter falls within the jurisdiction of the French competition commission. We appealed the decision of the court on March 24, 2000 on the grounds that

the legality of the procedures falls within the jurisdiction of the court that issued the order. The Supreme Court has not yet rendered a verdict on this issue. We have not made any provision for this claim.

In April 1998, Onyx and JANCOM International Development Projects ("JANCOM"), a Philippine company, concluded an agreement with the government of the Philippines to plan to participate jointly in a contract to construct and manage a waste management center in the San Mateo area of Manila, The Philippines. This agreement was subject to the condition that the contract with the Philippine government become effective, which was in turn subject to a number of conditions that were not fulfilled. On November 4, 1999, the Government of the Philippines declared that the project was abandoned. On May 4, 2001, Onyx received an arbitration demand from the secretary of the International Chamber of Commerce ("ICC") in which JANCOM alleges that Onyx violated a contractual exclusivity clause and requests the payment of damages amounting to US$100 million, without specifying the basis for the amount of the damages claimed. Onyx rejected JANCOM's claims on the grounds, among others, that neither the contract with the Philippine government nor the agreement concluded with JANCOM became effective. In addition, Onyx has filed a counterclaim against JANCOM for damages amounting to US$1 million. We do not expect this claim to have any material impact on our operations or financial results and have not established any reserves in our accounts.

On September 22, 1999 and February 10, 2000, several lawsuits were filed in the Commonwealth Court in Arecibo, Puerto Rico against, among others, Compañía de Aguas de Puerto Rico ("CAPR"). CAPR was a subsidiary of Aqua Alliance until 2000, when it was transferred to Proactiva, our joint venture with FCC. The complaints allege that CAPR, which operated numerous water production and waste water treatment facilities in Puerto Rico until May 2002, unlawfully allowed its Barceloneta plant to emit offensive odors and hazardous substances into the environment and thus damaged the health of the plaintiffs, a group of local residents. The suits are currently in the discovery stage, which is scheduled to end in July 2002. We do not believe that the suits will have a material adverse effect on our business and intend to defend them vigorously.

Dividend Policy

Subject to the approval of our shareholders and applicable provisions of the French commercial code and our *statuts*, we currently intend to pay dividends in the future as determined by the management board and approved by our shareholders. The payment and amount of any future dividends will depend on a number of factors, including our financial performance and net income, general business conditions and our business plans and investment policies. See "Item 10. Additional Information — Memorandum and Articles of Association — Rights, Preferences and Restrictions Applicable to Our Ordinary Shares — Dividends" and "Item 3. Key Information — Selected Financial Data — Dividends."

SIGNIFICANT CHANGES

The following discussion should be read in conjunction with our discussion of the evolution of our business, our financial condition, our results of operations and a comparison of our operating results and financial condition in preceding periods included in "Item 5. Operating and Financial Review and Prospects."

The following discussion contains forward-looking statements that involve risks and uncertainties, including, but not limited to, those described under "Key Information — Risk Factors." Our results may differ materially from those anticipated in the forward-looking statements.

Recent Developments

Results of Operations for the Fiscal Quarter ended March 31, 2002

On April 29, 2002, we announced our results of operations for the fiscal quarter ended March 31, 2002 compared to the fiscal quarter ended March 31, 2001. Our consolidated revenue for the first quarter of 2002 was €7.5 billion, an increase of 12.4% compared to consolidated revenue of €6.7 billion in the first quarter of 2001. This increase is mainly attributable to organic growth, which accounted for 6.2% of the increase, external growth, which accounted for 4.7% of the increase, and the impact of fluctuations in currency exchange rates, which accounted for the remaining 1.5% of the increase. Excluding non-core activities that we intend to divest in 2002, our consolidated revenue grew by 14% in the first quarter of 2002 compared to the first quarter of 2001, including organic growth of 6.6%.

Under French GAAP, our consolidated EBIT for the first quarter of 2002 was €481 million, representing growth of 8.1% compared to the first quarter of 2001. Excluding non-core activities that we intend to divest in 2002, our EBIT in the first quarter of 2002 grew by 10.3% compared to the first quarter of 2001.

Organic growth in the first quarter of 2002 is mainly attributable to the commencement of operations under new contracts won in 2001. Excluding the impact of the termination of the South Central transportation contract in August 2001, organic growth in our core activities was 8.5%.

External growth includes:

— in our energy services activities, the consolidation of EDF's energy service subsidiaries (€205 million) and the impact of the acquisition of SIRAM in Italy;

— in our waste management activities, the consolidation of the activities of the Marius Pedersen foundation in Denmark and Central Europe; and

— in our transportation activities, the acquisition of the Verney group in France.

External growth was partially offset by divestments of non-core activities in our water business, including the disposal of Johnson Screen in the United States, pursuant to our strategy to focus on core activities and divest non-strategic assets and operations.

Fluctuations in exchange rates related mainly to the increase in value of the U.S. dollar against the euro.

Revenue generated outside France amounted to €4.2 billion in the first quarter of 2002, representing 56% of our total revenue during this period, which is approximately the same proportion of revenue generated outside France in the first quarter of 2001.

Water

Our water business recorded revenue of €3.3 billion in the first quarter of 2002, an increase of 6.5% compared to revenue of €3.1 billion in the first quarter of 2001. Organic growth accounted for 6.1% of the increase and fluctuations in currency exchange rates accounted for 2.0%, which was partially offset by the negative impact (1.6%) resulting from divestments of non-core activities. Excluding non-core activities that we intend to divest in 2002, organic growth amounted to 6.9%. In France, Vivendi Water's operating performance remained stable at 5%.

Growth outside France was 8.7%, mainly due to a 24.5% increase in outsourcing services in the Rest of the World region (which excludes the United States) as a result of the commencement or development of operations under new contracts won in 2000 and 2001 in Central Europe (Bucharest, Prague), Germany (Görlitz), Morocco (Tangiers and Tetouan), and in Asia (Ulpu, Gusco and Hynix).

In the United States, revenue from our water business increased slightly on a comparable basis. Equipment sales in our water business showed signs of recovery, while non-core equipment sales have not yet returned to their early 2001 level.

Waste Management

Our waste management business recorded revenue of €1.5 billion in the first quarter of 2002, an increase of 9.5% compared to revenue of €1.3 billion in the first quarter of 2001. Organic growth accounted for 5.0% of the increase, external growth accounted for 2.6% and fluctuations in currency exchange rates accounted for 1.9%.

Revenue growth in our waste management business was mainly due to a strong increase of 15.2% in revenues generated outside France and less robust growth of 2.1% in France. Outside France, growth as attributable mainly to the development of business in Northern Europe (Bromley and Sheffield in the U.K., and in Norway) and in the Asia-Pacific region through our contracts with Pacific Waste Management and Collex. External growth was primarily due to the acquisition of the waste management activities of the Marius Pedersen foundation in 2001.

Energy services

Our energy services business recorded revenue of €1.3 billion in the first quarter of 2002, an increase of 39.7% compared to revenue of €0.9 billion in the first quarter of 2001. External growth accounted for 28.7% of the increase, while organic growth accounted for 10.3% and fluctuations in currency exchange rates accounted for 0.7%.

Our energy services generated organic growth in France (7.1%), as a result of the continued development of our co-generation activities, and outside France (17.9%) as a result of the commencement or the development of our operations under contracts won in 2001, particularly in the city of Tallinn, Estonia.

Strong external growth recorded by our energy services activities in the first quarter of 2002 is due primarily to the consolidation of EDF's energy service subsidiaries transferred to Dalkia in 2001, the acquisition of SIRAM in Italy and the acquisition of the two co-generation units in Usti nad Labem, Czech Republic.

Transportation

Our transportation business recorded revenue of €829 million in the first quarter of 2002, an increase of 9.6% compared to revenue of €756 million in the first quarter of 2001. External growth accounted for 6.3% of the increase, organic growth accounted for 2.8% and fluctuations in currency exchange rates accounted for 0.4%.

In France, revenue recorded by our transportation business rose 28%, of which organic growth accounted for 14%. External growth resulted primarily from the consolidation of the Verney group, which contributed additional revenue of €31.5 million in the first quarter of 2002.

Outside France, the net impact of the loss of the South Central contract was almost entirely offset by new contracts won in Northern and Eastern Europe, in the United States (through Yellow Transportation) and in the Asia-Pacific region. Excluding the loss of the South Central contract, organic growth in our transportation business outside France was 27%.

FCC

FCC contributed €582 million to our consolidated revenue in the first quarter of 2002, an increase of 9.3% compared to €533 million in the first quarter of 2001. Organic growth accounted for 8.1% of the increase and external growth accounted for the remaining 1.2%.

The increase in revenue contributed by FCC was principally due to organic growth in municipal services and good operating performance in the cement business due to an increase in average sales prices in the first quarter of 2002.

Major Business Developments

Since the date of our consolidated financial statements, we have pursued our strategic goals to increase organic growth, obtain new contracts, enter into new partnerships and alliances and continue to divest non-strategic assets. The following are the most significant business developments in each of our operating segments since the close of fiscal year 2001.

Water

U.S. Filter Corporation entered into an agreement in February 2002 for the sale of the Filtration and Separation Group (FSG) for approximately U.S.$360 million. This sale represents the last stage in the divestiture process of these U.S. activities commenced with the sale of Johnson Screen in 2001. This divestiture process has generated aggregate proceeds of U.S.$500 million. The sale is currently awaiting approval by the relevant antitrust authorities.

Vivendi Water sold its minority interest in Bristol Water, a U.K. water distribution company, for €38 million as part of our divestiture program for non-strategic assets.

U.S. Filter Corporation entered into a contract with Orange County, California (U.S.) to build the largest microfiltration treatment site in the world, which will use our Memcor membranes.

Through U.S. Filter Corporation, we were awarded a contract in March 2002 to operate the potable water network of Indianapolis, the twelfth largest city in the United States with 1.1 million people, for 20 years (with expected total revenue of approximately $1.5 billion).

In April 2002, First Aqua (JVCo) Limited acquired Southern Water, a U.K. water and wastewater operator, from Scottish Power at an enterprise value of £2.0 billion, which is equivalent to Southern Water's estimated average gross regulatory asset value as at March 2002. In May 2002, Vivendi Water UK, a wholly-owned subsidiary of Vivendi Water entered into an agreement with First Aqua Holdings Limited to acquire First Aqua (JVCo) Limited, the holding company of Southern Water. The acquisition by Vivendi Water UK is still subject to separate approvals by the European Union and U.K. antitrust authorities and to the availability of satisfactory long-term non-recourse financing to refinance existing debt of First Aqua (JVCo) Limited and Southern Water. The acquisition is expected to be consummated at the end of 2002. The consideration is based on the same enterprise value used for the acquisition of Southern Water by First Aqua (JVCo) Limited. However, the acquisition by Vivendi Water UK, which will be effected through an investment in First Aqua (JVCo) Limited, will be limited to an investment of £420 million (€680 million) following the debt refinancing. The balance will be provided by financial participants unrelated to Vivendi Water. Following the consummation of the acquisition and the implementation of the refinancing, Vivendi Water UK will hold a majority of the capital stock of First Aqua (JVCo) Limited and will fully consolidate the results of Southern Water. The remaining equity interests held by the financial participants will be considered as minority interests. We expect that this acquisition, which allows Vivendi Water to enter the wastewater services market and commence developing integrated water management services in the U.K., will provide us with a platform to further develop our industrial outsourcing activities in the U.K.

In May 2002, Compañía de Aguas de Puerto Rico ("CAPR"), a subsidiary of Vivendi Water, was not awarded the renewal of a contract to operate the water and wastewater services of the Commonwealth of Puerto Rico that had been subject to an international offer for tenders.

In May 2002, we announced that we have started exclusive negotiations with AXA Private Equity for the sale of Bonna Sabla, a French subsidiary of Vivendi Water that manufacturers pre-cast concrete products primarily for water and wastewater systems, as part of our divestiture program for non-strategic assets.

In May 2002, Vivendi Water was chosen to operate and maintain the water services in the business district of Pudong in the city of Shanghai for 50 years (with expected total revenue of €10 billion), which is the first outsourcing contract in the People's Republic of China that grants a foreign company the responsibility for the entire water cycle from potable water production, network distribution and customer services. Under the terms of this contract, Vivendi Water will acquire a 50% interest in Shanghai Pudong Vivendi Water Corporation, a new joint venture company, for approximately €266 million. At the start of operations, the joint venture will supply potable water to 550,000 customers with an average daily consumption of 1.2 million cubic meters.

Waste Management

In March 2002, Onyx was awarded an industrial waste management contract in Australia, which is expected to generate total revenue of €10 million over 3 years.

Energy Services

Edenkia, in association with Onyx, won a contract for the management of technical maintenance, cleaning services, waste treatment and logistics at the Futuroscope site in France, which is the fifth largest theme park in Europe with approximately 2.5 million visitors in 2000. We expect this contract to generate total revenue of €40 million over 5 years. The 211 members of Futuroscope's personnel that were employed in these activities will join our company in the first half of 2002.

In March 2002, Dalkia International announced that the municipal council of the city of Poznan (600,000 inhabitants) had chosen it to acquire a controlling interest in PEC Poznan, which operates the urban heating network of the city. Pursuant to the terms of the contract, Dalkia International will acquire a 51% interest in PEC Poznan for €44 million.

Transportation

In Sweden, Connex won two contracts in the city of Eskilstuna, which are expected to generate annual revenue of €9 million over 6 years, and a 4-year contract in the Scania region, which we expect will increase our annual revenue in this region to €34 million in 2002.

In France, Connex acquired the Verney transportation group, which recorded revenue exceeding €150 million in 2001.

In Germany, Connex won a contract to operate a number of rail lines in North Rhineland which is expected to generate average annual revenue of €20 million over 10 years.

In Ireland, Connex won a contract to operate Dublin's light rail line for 5 years (with expected total revenue of €77 million).

FCC

In April 2002, we approved the principle of a proposed merger between FCC and Portland Valderrivas S.A., which is expected to simplify the holding structure of FCC's cement activities by removing a holding layer that has had a negative impact on FCC's stock price in the past. This transaction, which is expected to have a positive impact on the earnings per share of both companies, will not change our joint control of FCC with Mrs. Esther Koplowitz.

Outlook

Markets

Our market continues to suffer the effects of the short-term economic difficulties in North America that affected our business in 2001. However, we believe that our European markets show favorable prospects for 2002, particularly outside of Western Europe. We also believe that the Asian region, particularly China and South Korea, offer exceptional growth opportunities for environmental management services and continue to show signs of economic growth.

More generally, we expect that demand for our services by our private and public customers will continue to rise, primarily due to increasingly strict norms, investment requirements, and the need to outsource increasingly complex and integrated tasks to the best professionals.

Guidance

During 2002, we intend to continue to develop our industrial and governmental outsourcing operations and to continue to make selective acquisitions to broaden our international businesses. We expect that our business will continue to win new contracts and will benefit from our recent restructuring initiatives.

We currently anticipate that in 2002 we will benefit from the consolidation of contracts won and the integration of operations acquired in 2001. In addition, we expect that the implementation in 2002 and 2003 of our cost-restructuring program adopted in 2001 will lead to an increase in profitability throughout our businesses. We have also decided to accelerate our divestiture program for non-strategic assets in the United States to focus on our core municipal and private outsourcing business and services to individuals. Consequently, our goal is to increase our revenue, excluding non-strategic activities, by 35% to 40% over the 2000-2004 period and to improve our operating performance with growth at least equal to growth in our revenue. In 2002, the anticipated evolution of the economic environment and the contracts won or expected to be won allow us to raise our revenue growth target to more than 10%, excluding non-strategic activities. A variety of factors, however, including those described under "Key Information — Risk Factors," could cause our expectations not to be realized, affect our ability to generate revenue, cause us to implement changes in our operations (and incur related costs) or have other negative effects on our operating results.

ITEM 9: THE OFFER AND LISTING

TRADING MARKETS

Our ordinary shares are listed on the *Premier Marché* of Euronext Paris. Since August 8, 2001, our shares have been included in the CAC 40, a widely followed equity index of 40 major French stocks published by Euronext Paris. Our shares have been listed on The New York Stock Exchange in the form of American Depositary Shares ("ADSs") since October 5, 2001. Each ADS represents one ordinary share.

Trading On The Premier Marché

General

On September 22, 2000, the *Société des Bourses Françaises S.A.* (known as the ParisBourse[SBF] S.A.), Amsterdam Exchange N.V. and the *Societé de la Bourse de Valeurs Mobilières de Bruxelles S.A.* merged to create Euronext N.V., a Dutch holding company and the first pan-European stock exchange. Subsequently, ParisBourse[SBF] S.A. changed its name to Euronext Paris. Securities quoted on any of the stock exchanges participating in Euronext will be traded through a common Euronext platform, with central clearinghouse, settlement and custody structures. However, these securities will remain listed on their respective local exchanges. Euronext Paris retains responsibility for the admission of securities to its trading markets, as well as the regulation of these markets.

Securities approved for listing by Euronext Paris are traded in one of two regulated markets, the *Bourse de Paris*, which in turn comprises the *Premier Marché* and the *Second Marché*, and the *Nouveau Marché*. These markets are all operated and managed by Euronext Paris, a market operator (*entreprise de marché*) responsible for the admission of securities and the supervision of trading in listed securities. Euronext Paris publishes a daily official price list that includes price information on listed securities. The securities of most large public companies are listed on the *Premier Marché*, with the *Second Marché* available for small and medium-sized companies. Trading on the *Nouveau Marché* was introduced in March 1996 to allow small capitalization and start-up companies to access the stock market. In addition, the securities of certain other companies are traded on a non-regulated, over-the-counter market, the *Marché Libre OTC.*

Premier Marché

Securities listed on the *Premier Marché* of Euronext Paris are officially traded through authorized financial institutions that are members of Euronext Paris. Securities are traded continuously n each business day from 9:00 a.m. to 5:25 p.m. (Paris time), with a pre-opening session from 7:15 a.m. to 9:00 a.m. and a post-closing session from 5:25 p.m. to 5:30 p.m. (during which time trades are recorded but not executed), and an opening auction at 9:00 a.m. and a closing auction at 5:30 p.m. Any trade of a security that occurs after a stock exchange session closes is recorded on the next business day at the previous session's closing price for that security. Euronext Paris has introduced continuous electronic trading during trading hours for most listed securities.

Euronext Paris places securities listed on the *Premier Marché* in one of two categories, depending on their trading volume. Our shares trade in the category known as *Continu*, which includes the most actively traded securities.

Euronext Paris may restrict trading in a security listed on the *Premier Marché* if the quoted price of the security increases or decreases beyond the specific price limits defined by its regulations (*réservation à la hausse ou à la baisse*). In particular, trading is automatically restricted in a security whose quoted price varies by more than 10 % from the last price determined in an auction or by more than 2 % from the last traded price. If the order that has caused the restriction is cancelled within the following minutes, the trading of this security resumes. If the order is not cancelled, an auction is organized after a call phase of five minutes, during which orders are entered in the central order book but not executed. Euronext Paris may also suspend trading of a security listed on the *Premier Marché* in other limited circumstances (suspension de la cotation), in particular to prevent or halt disorderly market conditions. In addition, in exceptional cases including, for example, in the context of a takeover bid, the CMF may also suspend trading of the security concerned.

Trades of securities listed on the *Premier Marché* are settled on a cash basis on the third day following the trade. Market intermediaries are also permitted to offer investors a deferred settlement service (*service de règlement*

différé) for a fee. The deferred settlement service is only available for trades in securities that either (1) are a component of the SBF 120 Index or (2) have both a total market capitalization of at least €1 billion and a daily average volume of trades of at least €1 million. Investors can elect on the determination date (*date de liquidation*), which is the fifth trading day before the end of the month, either to settle by the last trading day of the month or to pay an additional fee and postpone the settlement decision to the determination date of the following month. Our shares are currently eligible for the deferred settlement service.

Equity securities traded on a deferred settlement basis are considered to have been transferred only after they have been registered in the purchaser's account. Under French securities regulations, any sale of a security traded on a deferred settlement basis during the month of a dividend payment is deemed to occur after the dividend has been paid. If the sale takes place before, but during the month of, a dividend payment date, the purchaser's account will be credited with an amount equal to the dividend paid and the seller's account will be debited by the same amount.

Trading by Vivendi Environnement in its Shares

Under French law, a company may not issue shares to itself, but it may purchase its own shares in the limited cases described in Item 10 under "Additional Information — Memorandum and Articles of Association — Trading in Our Own Shares."

Trading History

The table below sets forth, for the periods indicated, the reported high and low sales prices (in euro) and the trading volume (in shares) of our shares on the *Premier Marché* of Euronext Paris.

	High	Low	Trading Volume
2002			
April	39.10	34.66	19,147,026
First Quarter	39.20	33.55	57,297,156
March	37.87	33.55	24,538,663
February	38.90	36.25	12,200,709
January	39.20	35.27	20,557,784
2001			
Fourth Quarter	44.50	36.10	120,996,762
December	40.78	36.10	92,132,110
November	44.50	40.16	14,431,156
October	44.30	41.10	14,433,496
Third Quarter	51.25	40.00	40,825,017
Second Quarter	51.40	46.91	25,040,547
First Quarter	50.25	38.50	55,241,583
2000			
Fourth Quarter	49.00	39.50	26,287,055
Third Quarter (from July 20)	46.00	32.50	119,020,919

Source: Euronext Paris

Our shares were offered at €32.50 per share in our initial public offering in France and at €34 per share in our international private placement.

Trading On The New York Stock Exchange

The table below sets forth, for the periods indicated, the reported high and low sales prices (in U.S. dollars) and the trading volume (in ADSs) of our ADSs on The New York Stock Exchange.

	High	Low	Trading Volume
2002			
April	34.20	30.75	60,692
First Quarter	34.20	29.53	128,785
March	33.50	29.53	62,700
February	33.80	31.79	22,390
January	34.20	32.30	43,695
2001			
Fourth Quarter (from October 5)	39.45	32.40	294,495
December	36.00	32.40	126,693
November	39.00	36.74	53,994
October (from October 5)	39.45	37.00	113,798

Source: NYSE (volumes) and Bloomberg and Van der Moolen (prices).

We urge you to obtain current market quotations.

ITEM 10: ADDITIONAL INFORMATION

MEMORANDUM AND ARTICLES OF ASSOCIATION

Objects and Purposes

Under Article three of our *statuts*, our corporate purpose is to engage, directly or indirectly, in France and in all other countries, in:

- the management, whether for private, business or public sector customers, of all service activities related to the environment, and in particular, water, waste water treatment, energy, transportation and waste management services;
- the acquisition, licensing and operation of all patents, licenses, trademarks and models pertaining directly or indirectly to our operations;
- the acquisition of all share interests, by way of subscription, purchase, contribution, exchange or through any and all other means, of bonds, shares and all other corporate securities, whether existing or to be issued in the future, and the right to dispose of the same; and
- all transactions, whether commercial, industrial, financial or involving real or personal property and related directly or indirectly to the purposes stated above.

Directors

Our *statuts* provide that each member of our supervisory board must own at least 750 of our shares, but impose no share ownership requirements on members of our management board.

The French commercial code provides that each director is eligible for reappointment upon the expiration of his or her term of office. Our *statuts* fix the term of reappointment at four years, provided that no member of the management board may be older than 65.

Under the French commercial code, any transaction directly or indirectly between a company and a member of its supervisory or management board that cannot be reasonably considered to be in the ordinary course of business of the company is subject to the supervisory board's prior consent. Any such transaction concluded without the prior consent of the supervisory board can be nullified if it causes prejudice to the company. The interested director can be held liable on this basis. The statutory auditor must be informed of the transaction within one month following its conclusion and must prepare a report to be submitted to the shareholders for approval at their next meeting. At the meeting, the interested director may not vote on the resolution approving the transaction, nor may his or her shares be taken into account in determining the outcome of the vote or whether a quorum is present. In the event the transaction is not ratified by the shareholders at a shareholders' meeting, it will remain enforceable by third parties against the company, but the company may in turn hold the interested director and, in some circumstances, other members of the management board, liable for any damages it may suffer as a result. In addition, the transaction may be canceled if it is fraudulent. In the case of transactions with directors that can be considered within the company's ordinary course of business, the interested director must provide a copy of the governing agreement to the chairman of the supervisory board, who must inform the members of the supervisory board and the statutory auditor of the principal terms of each such transaction. Moreover, certain transactions between a corporation and one of its directors who is a natural person are prohibited under the French commercial code. Our directors are not authorized, in the absence of an independent quorum, to vote compensation to themselves or other directors. Our *statuts* contain no provisions specifically concerning loans from our company to our directors.

Transactions with Major Shareholders

The limitations imposed by the French commercial code on transactions between a company and interested directors, described in the preceding paragraph, also apply to transactions between a company and a holder of shares carrying 5% or more of its voting power (or, if such shareholder is a legal entity, the entity's parent, if any) and to transactions between companies with common directors or executive officers. Accordingly, transactions between our company and Vivendi Universal are subject to those limitations.

Rights, Preferences and Restrictions Applicable to Our Ordinary Shares

Dividends

Dividends on our shares are distributed to shareholders *pro rata*. The dividend payment date is decided by the shareholders at an ordinary general meeting (or by the management board in the absence of such a decision by the shareholders). Under the French commercial code, we must pay any dividends within nine months of the end of our fiscal year unless otherwise authorized by court order. Subject to certain conditions, our management board can determine the distribution of interim dividends during the course of the fiscal year, but in any case before the approval of the annual accounts by the annual ordinary general meeting of shareholders. Dividends on shares that are not claimed within five years of the date of declared payment revert to the French State.

Voting Rights

Each of our shares carries the right to cast one vote in shareholder elections.

Liquidation Rights

If our company is liquidated, any assets remaining after payment of our debts, liquidation expenses and all of our remaining obligations will be distributed first to repay in full the nominal value of our shares. Any surplus will be distributed *pro rata* among shareholders in proportion to the nominal value of their shareholdings.

Preferential Subscription Rights

Under the French commercial code, if we issue additional shares, or any equity securities or other specific kinds of additional securities carrying a right, directly or indirectly, to purchase equity securities issued by our company for cash, current shareholders will have preferential subscription rights to these securities on a pro rata basis. These preferential rights will require us to give priority treatment to those shareholders over other persons wishing to subscribe for the securities. The rights entitle the individual or entity that holds them to subscribe to an issue of any securities that may increase our share capital by means of a cash payment or a set-off of cash debts. Preferential subscription rights are transferable during the subscription period relating to a particular offering. These rights may also be listed on the Paris Bourse. A two-thirds majority of our shares entitled to vote at an extraordinary general meeting may vote to waive preferential subscription rights with respect to any particular offering. French law requires a company's governing board and independent auditors to present reports that specifically address any proposal to waive preferential subscription rights. In the event of a waiver, the issue of securities must be completed within the period prescribed by law. The shareholders may also decide at an extraordinary general meeting to give the existing shareholders a non-transferable priority right to subscribe for the new securities during a limited period of time. Shareholders may also waive their own preferential subscription rights with respect to any particular offering.

Amendments to Rights of Holders

Rights of a given class of shareholders can be amended only by action of an extraordinary general meeting of the class of shareholders affected. Two-thirds of the shares of the affected class voting either in person or by mail or proxy must approve any proposal to amend shareholder rights. The quorum requirements for a special meeting are 50% of the voting shares, or 25% upon resumption of an adjourned meeting.

Ordinary and Extraordinary Meetings

In accordance with the French commercial code, there are two types of general shareholders' meetings: ordinary and extraordinary.

Ordinary general meetings of shareholders are required for matters that are not specifically reserved by law to extraordinary general meetings, such as:

- electing, replacing and removing members of the supervisory board;
- appointing independent auditors;
- declaring dividends or authorizing dividends to be paid in shares; and

- issuing debt securities.

Extraordinary general meetings of shareholders are required for approval of matters such as amendments to our *statuts*, including any amendment required in connection with extraordinary corporate actions. Extraordinary corporate actions include:

- changing our company's name or corporate purpose;
- increasing or decreasing our share capital;
- creating a new class of equity securities;
- authorizing the issuance of investment certificates or convertible or exchangeable securities;
- establishing any other rights to equity securities;
- selling or transferring substantially all of our assets; and
- the voluntary liquidation of our company.

Convening Shareholders' Meetings

The French commercial code requires our management board to convene an annual ordinary general meeting of shareholders to approve our annual accounts. This meeting must be held within six months of the end of each fiscal year. This period may be extended by an order of the President of the *Tribunal de Commerce*. The management board and the supervisory board may also convene an ordinary or extraordinary meeting of shareholders upon proper notice at any time during the year. If the management board and the supervisory board fail to convene a shareholders' meeting, our independent auditors or a court-appointed agent may call the meeting. Any of the following may request the court to appoint an agent:

- one or several shareholders holding at least 5% of our share capital;
- in cases of urgency, designated employee representatives or any interested party;
- duly qualified associations of shareholders who have held their shares in registered form for at least two years and who together hold at least 1% of the voting rights of our company; or
- in a bankruptcy, our liquidator or court-appointed agent may also call a shareholders' meeting in some instances.

Shareholders holding more than 50% of our share capital or voting rights may also convene a shareholders' meeting after a public offer or a sale of a controlling stake of our capital.

Notice of Shareholders' Meetings

We must announce general meetings at least 30 days in advance by means of a preliminary notice published in the *Bulletin des Annonces Légales Obligatoires* ("BALO"). The preliminary notice must first be sent to the Commission des Opérations de Bourse (the "COB"). The COB also recommends that the preliminary notice be published in a newspaper of national circulation in France. The preliminary notice must disclose, among other things, the time, date, and place of the meeting, whether the meeting will be ordinary or extraordinary, the agenda, a draft of the resolutions to be submitted to the shareholders, a description of the procedures which holders of bearer shares must follow to attend the meeting, the procedure for voting by mail, and a statement informing the shareholders that they may propose additional resolutions to the management board within ten days of the publication of the notice.

We must send a final notice containing the agenda and other information about the meeting at least 15 days prior to the meeting or at least six days prior to the resumption of any meeting adjourned for lack of a quorum. The final notice must be sent by mail to all registered shareholders who have held shares for more than one month prior to the date of the preliminary notice. The final notice must also be published in BALO and in a newspaper authorized

to publish legal announcements in the local administrative department in which our company is registered, with prior notice having been given to the COB.

In general, shareholders can take action at shareholders' meetings only on matters listed in the agenda for the meeting. One exception to this rule is that shareholders may take action with respect to the dismissal of members of the supervisory board regardless of whether these actions are on the agenda. Additional resolutions to be submitted for approval by the shareholders at the meeting may be proposed to the management board (within ten days of the publication of the preliminary notice in the BALO) by:

- designated employee representatives;
- one or several shareholders holding a specified percentage of shares; or
- a duly qualified association of shareholders who have held their shares in registered form for at least two years and who together hold at least 1% of our voting rights.

The management board must submit properly proposed resolutions to a vote of the shareholders.

During the two weeks preceding a meeting of shareholders, any shareholder may submit written questions to the management board relating to the agenda for the meeting. The management board must respond to these questions during the meeting.

Attendance and Voting at Shareholders' Meetings

Each share confers on the shareholder the right to cast one vote. Shareholders may attend ordinary meetings and extraordinary meetings and exercise their voting rights subject to the conditions specified in the French commercial code and our *statuts*. In particular, a holder must have accurately disclosed any substantial interest in our company (as described under "— Anti-Takeover Provisions — Disclosure of Substantial Stakeholdings" and "— Anti-Takeover Effects of Applicable Law and Regulations") and the holder's shares must be fully paid up. In addition, a shareholder is not permitted to vote on specific resolutions that would confer a particular benefit on that shareholder. There is no requirement that shareholders have a minimum number of shares in order to attend or to be represented at an ordinary or extraordinary general meeting.

To participate in any general meeting, a holder of shares held in registered form must have shares registered in his or her name in a shareholder account maintained by us or on our behalf by an agent appointed by us at least two days prior to the date set for the meeting. A holder of bearer shares must obtain an account certificate indicating indicate the number of bearer shares the holder owns from the accredited intermediary with whom the holder has deposited his or her shares. The holder must deposit this certificate at the place specified in the notice of the meeting at least two days before the meeting. The board of directors may extend these deadlines for the benefit of all shareholders.

Proxies and Votes by Mail

In general, all shareholders who have properly registered their shares or duly presented a certificate from their accredited financial intermediary may participate in general meetings. Shareholders may participate in general meetings either in person or by proxy. Shareholders may vote in person, by proxy or by mail.

Proxies will be sent to any shareholder on request. To be counted, such proxies must be received at our registered office, or at any other address indicated on the notice convening the meeting, prior to the date of the meeting. A shareholder may grant proxies to his or her spouse or to another shareholder. A shareholder that is a corporation may grant proxies to a legal representative. Alternatively, the shareholder may send us a blank proxy without nominating any representative. In this case, the chairman of the meeting will vote blank proxies in favor of all resolutions proposed by the management board and against all others.

With respect to votes by mail, we are required to send shareholders a voting form. The completed form must be returned to us, in paper format or in electronic form, at least three days prior to the date of the shareholders' meeting.

Quorum

The French commercial code requires that shareholders having at least 25% of the shares entitled to voting rights must be present in person or be voting by mail or by proxy to fulfill the quorum requirement for:

- an ordinary general meeting; or
- an extraordinary general meeting where an increase in our share capital is proposed through incorporation of reserves, profits or share premium.

The quorum requirement is one third of the shares entitled to voting rights, on the same basis, for any other extraordinary general meeting.

If a quorum is not present at a meeting, the meeting is adjourned. When an adjourned meeting is resumed, there is no quorum requirement for an ordinary meeting or for an extraordinary general meeting where an increase in our share capital is proposed through incorporation of reserves, profits or share premium. However, only questions that were on the agenda of the adjourned meeting may be discussed and voted upon. In the case of any other reconvened extraordinary general meeting, shareholders having at least 25% of outstanding voting rights must be present in person or be voting by mail or proxy for a quorum. If a quorum is not present, the reconvened meeting may be adjourned for a maximum of two months. Any deliberation by the shareholders taking place without a quorum is void.

Majority

A simple majority of shareholders present or represented may pass any resolution on matters required to be considered at an ordinary general meeting, or concerning a capital increase by incorporation of reserves, profits or share premium at an extraordinary general meeting. At any other extraordinary general meeting, a two-thirds majority of the shareholder votes cast is required.

A unanimous shareholder vote is required to increase liabilities of shareholders.

Abstention from voting by those present or those represented by proxy or voting mail is counted as a vote against the resolution submitted to the shareholder vote.

In general, a shareholder is entitled to one vote per share at any general meeting. Under the French commercial code, shares of a company held by entities controlled directly or indirectly by that company are not entitled to voting rights and are not considered for quorum purposes.

Limitations on Right to Own Securities

Our *statuts* contain no provisions that limit the right of shareholders to own our securities or hold or exercise voting rights associated with those securities. See "— Exchange Controls" for a description of certain requirements imposed by the French commercial code.

Trading in Our Own Shares

Under French law, our company may not issue shares to itself. However, we may, either directly or through a financial intermediary acting on our behalf, purchase shares representing up to 10% of Vivendi Environnement's share capital for the purpose of optimizing our company's asset and financial management, providing shares to our employees under a profit-sharing plan or stock option plan, or delivering shares to third parties in exchange offers or acquisitions or upon exercise of options, warrants, exchangeable bonds or other instruments granting rights to our shares. To acquire our own , shares, Vivendi Environnement first must file a *note d'information* that has received the approval (*visa*) of the COB and obtain the approval of our shareholders at an ordinary general meeting.

Pursuant to a resolution approved by our shareholders at the general meeting held on April 25, 2002, we are authorized to purchase and sell our shares by any means, including block trades and combinations of financial derivative instruments, within the 10% limit provided by law (representing 34,617,577 shares at February 20, 2002), for an 18-month period from the date of the general meeting, at a maximum purchase price of €60 (or the corresponding amount in any other currency) and at the minimum sale price of €32.50 (or the corresponding amount in any other currency). We are only permitted to make payments up to an aggregate amount of €2.1 billion for our

shares. In the context of this authorization, our management board is permitted to issue trade orders, execute sale or transfer documents, enter into agreements and options, and to cancel shares and reduce our share capital as appropriate and handle any related formalities. Our management board may delegate any of these powers to its chairman. On April 5, 2002, the COB approved a *note d'information* relating to this share repurchase program.

Anti-Takeover Provisions — Disclosure of Substantial Shareholdings

Our *statuts* provide that any person or group that fails to notify us within 15 days of acquiring, directly or indirectly, or disposing of 0.5% or any multiple of 0.5% of our shares will be deprived of voting rights for shares in excess of the unreported fraction. In addition, accredited intermediaries that hold shares on behalf of non-French resident shareholders are required to comply with this notification obligation in respect of the total amount of shares held on behalf of the non-French resident shareholders.

Anti-Takeover Effects of Applicable Law and Regulations

In addition, the French commercial code provides that any individual or entity, acting alone or in concert with others, that becomes the owner, directly or indirectly, of more than 5%, 10%, 20%, one-third, 50% or two-thirds of the outstanding shares or voting rights of a listed company in France, such as our company, or that increases or decreases its shareholding or voting rights above or below any of those percentages, must notify the company within 15 calendar days of the date it crosses such thresholds of the number of shares it holds and their voting rights. The individual or entity must also notify the *Conseil des Marches Financiers* ("CMF") within five trading days of the date it crosses these thresholds.

French law and COB regulations impose additional reporting requirements on persons who acquire more than 10% or 20% of the outstanding shares or voting rights of a listed company. These persons must file a report with the company, the COB and the CMF within fifteen days of the date they cross the threshold. In the report, the acquiror must specify its intentions for the following 12-month period, including whether or not it intends to continue its purchases, to acquire control of the company in question or to nominate candidates for the board of directors. The CMF makes the notice public. The acquiror must also publish a press release stating its intentions in a financial newspaper of national circulation in France. The acquiror may amend its stated intentions, provided that it does so on the basis of significant changes in its own situation or that of its shareholders. Upon any change of intention, it must file a new report.

To permit holders to give the required notice, we are required to publish in the BALO no later than 15 calendar days after the annual ordinary general meeting of shareholders information with respect to the total number of voting rights outstanding as of the date of such meeting. In addition, if the number of outstanding voting rights changes by 5% or more between two annual ordinary general meetings, we are required to publish in the BALO, within 15 calendar days of such change, the number of voting rights outstanding and provide the CMF with written notice of such information. The CMF publishes the total number of voting rights so notified by all listed companies in a weekly notice, noting the date each such number was last updated.

If any person fails to comply with the legal notification requirement, the shares or voting rights in excess of the relevant threshold will be deprived of voting rights for all shareholders' meetings until the end of a two-year period following the date on which their owner complies with the notification requirements. In addition, any shareholder who fails to comply with these requirements may have all or part of its voting rights suspended for up to five years by the Commercial Court at the request of the chairman, any shareholder or the COB, and may be subject to a fine.

Under CMF regulations, and subject to limited exemptions granted by the CMF, any person or persons acting in concert that own in excess of one-third of the share capital or voting rights of a French listed company must initiate a public tender offer for the remaining outstanding share capital of such company.

In addition, a number of provisions of the French commercial code allow corporations to adopt *statuts* that have anti-takeover effects, including provisions that allow:

- shares with double voting rights;
- a company's board of directors to increase the company's share capital during a tender offer; and

- limitations on the voting power of shareholders.

MATERIAL CONTRACTS

In view of the size and scope of our operations, we believe that the only contract to which we are a party that could be considered material to our company as a whole is our contract with EDF, the principal terms of which are described under "Information on the Company — Business Overview — Our Services — Energy Services."

EXCHANGE CONTROLS

The French commercial code currently does not limit the right of nonresidents of France or non-French persons to own and vote shares. However, nonresidents of France must file an administrative notice with French authorities in connection with the acquisition of a controlling interest in our company. Under existing administrative rulings, ownership of 20% or more of our share capital or voting rights is regarded as a controlling interest, but a lower percentage might be held to be a controlling interest in some circumstances depending upon factors such as:

- the acquiring party's intentions; and
- the acquiring party's ability to elect directors, and financial reliance by us on the acquiring party.

French exchange control regulations currently do not limit the amount of payments that we may remit to nonresidents of France. Laws and regulations concerning foreign exchange controls do require, however, that all payments or transfers of funds made by a French resident to a nonresident be handled by an accredited intermediary. In France, all registered banks and most credit establishments are accredited intermediaries.

TAXATION

On August 31, 1994, the United States and France signed a tax treaty (the "Treaty"). The following is a general summary of the material tax effects that may apply to you as a holder of our shares or ADSs for purposes of U.S. federal income tax and French tax, if all of the following apply to you:

- you own, directly or indirectly, less than 5% of our share capital;
- you are:
  - a citizen or resident of the United States for United States federal income tax purposes;
  - a U.S. domestic corporation; or
  - otherwise subject to U.S. federal income taxation on a net income basis in respect of your shares of our company;
- you are entitled to the benefits of the Treaty under the "Limitations of Benefits" article of the Treaty;
- you hold your shares or ADSs of our company as capital assets; and
- your functional currency is the U.S. dollar.

You are strongly urged to consult your own tax advisor regarding the consequences to you of acquiring, owning or disposing of our shares or ADSs, rather than relying on this summary. The summary may not apply to you or may not completely or accurately describe tax consequences to you. For example, special rules may apply to U.S. expatriates, insurance companies, tax-exempt organizations, financial institutions, persons subject to the alternative minimum tax, securities broker-dealers, traders in securities that elect to mark-to-market and persons holding their shares or ADSs as parties to a conversion transaction, among others. Those special rules are not discussed in this document. The summary is based on the laws, conventions and treaties in force as of the date of this document, all of which are subject to changes, possibly with retroactive effect. Also, this summary does not discuss any tax rules other than U.S. federal income tax and French tax rules. Further, the U.S. and French tax authorities and courts are not bound by this summary and may disagree with its conclusions.

Beneficial owners of ADSs will be treated as owners of the underlying shares for U.S. federal income tax purposes. Deposits and withdrawals of shares in exchange for ADSs will not result in the realization of gain or loss for U.S. federal income tax purposes.

Taxation of Dividends

Withholding Tax and Avoir Fiscal

We will withhold tax from your dividend at the reduced rate of 15%, provided that you have complied with the following procedures:

- You must complete French Treasury Form RF1 A EU-No. 5052, "Application for Refund," and deliver it to the French tax authorities before the date of payment of the dividend. If you are not an individual, you must also provide the French tax authorities an affidavit attesting that you are the beneficial owner of all the rights attached to the full ownership of the shares, including, among other things, the dividend rights.
- If you cannot complete Form RF1 A EU-No. 5052 before the date of payment of the dividend, and if you are entitled to a payment in respect of the French *avoir fiscal* pursuant to the Treaty (see below), you may complete a simplified certificate and send it to the French tax authorities. This certificate must state that:
- you are a resident of the United States for purposes of the Treaty;
- your ownership of our shares or ADSs is not effectively connected with a permanent establishment or a fixed base in France;
- you own all the rights attached to the full ownership of the shares or ADSs, including, among other things, the dividend rights; and
- you meet all the requirements of the Treaty for the reduced rate of withholding tax and the transfer of the French *avoir fiscal.*

If you have not completed Form RF1 A EU-No. 5052 or the simplified certificate before the dividend payment date, we will deduct French withholding tax at the rate of 25%. In that case, you may claim a refund of the excess withholding tax by completing and providing the French tax authorities with Form RF1 A EU-No. 5052 by December 31 of the second calendar year following the year during which the withholding tax is paid.

The Application for Refund and the simplified certificate, together with instructions, can be obtained from the U.S. Internal Revenue Service or from the *Centre des Impôts des Non Résidents*, 9 rue d'Uzès, 75094 Paris Cedex 02, France, upon request.

Under the Treaty, you may be entitled, in certain circumstances, to a French tax credit called the *avoir fiscal.* The *avoir fiscal* is generally equal to 50% of the dividend paid for individuals, or 15% of the dividend paid for shareholders other than individuals (increased in this latter case by an additional amount equal to 70% of the equalization tax known as the *précompte* actually paid in cash by the distributing company in respect of the dividend distribution, see below "The Précompte"). You may be entitled to a payment equal to the *avoir fiscal*, less a 15% withholding tax, if any one of the following applies to you:

- you are an individual or other non-corporate holder that is a resident of the United States for purposes of the Treaty;
- you are a U.S. corporation, other than a regulated investment company;
- you are a U.S. corporation that is a regulated investment company, provided that less than 20% of your shares are beneficially owned by persons who are neither citizens nor residents of the United States; or
- you are a partnership or trust that is a resident of the United States for purposes of the Treaty, but only to the extent that your partners, beneficiaries or grantors would qualify as eligible under the first or second points on this list and are subject to U.S. income tax with respect to such dividends and payment of the *avoir fiscal.*

Another condition to be entitled to a payment in respect of the *avoir fiscal* is that you (or your partners, beneficiaries or grantors, as applicable, if you are a partnership or a trust) be subject to U.S. federal income taxes on the payment of the *avoir fiscal* and the related dividend.

If you are eligible, you may claim the *avoir fiscal* by complying with the same filing requirements as those conditioning the application of the reduced 15% withholding tax. As noted below, you will not receive this payment until after January 15 of the calendar year following the year in which the dividend was paid.

Specific rules apply to the following:

- tax-exempt U.S. pension funds, which include the exempt pension funds established and managed in order to pay retirement benefits subject to the provisions of Section 401(a) of the Internal Revenue Code (qualified retirement plans), Section 403(b) of the Internal Revenue Code (tax deferred annuity contracts) or Section 457 of the Internal Revenue Code (deferred compensation plans); and

- various other tax-exempt entities, including certain state-owned institutions, not-for-profit organizations and individuals (with respect to dividends they beneficially own and that are derived from an individual retirement account).

Entities in these two categories are eligible for a reduced withholding tax rate of 15% on dividends, subject to the same withholding tax filing requirements as eligible U.S. holders, except that they may have to supply additional documentation evidencing their entitlement to these benefits. Subject to the same filing requirements, these entities are also entitled to a partial *avoir fiscal* equal to 30/85 of the gross *avoir fiscal* generally payable to corporations, subject to deduction of a 15% withholding tax.

The *avoir fiscal* or partial *avoir fiscal* and any French withholding tax refund will not be paid before January 15 following the end of the calendar year in which the dividend is paid.

For U.S. federal income tax purposes, the gross amount of a dividend and any *avoir fiscal*, including any amounts withheld due to French withholding tax, will be included in your gross income as dividend income when payment is received by you, to the extent they are paid or declared paid out of our current or accumulated earnings and profits as calculated for U.S. federal income tax purposes. Dividends paid by our company will not give rise to any U.S. dividends received deduction. They will generally constitute foreign source "passive" income for foreign tax credit purposes.

Also for U.S. federal income tax purposes, the amount of any dividend paid in euro, including any French withholding taxes, will be equal to the U.S. dollar value of the euro on the date the dividend is included in income, regardless of whether the payment is in fact converted into U.S. dollars. If the payment is not converted into U.S. dollars on the date of receipt, you will generally be required to recognize U.S. source ordinary income or loss when you sell or dispose of euro. You may also be required to recognize foreign currency gain or loss if you receive a refund under the Treaty of tax withheld in excess of the treaty rate. This foreign currency gain or loss will generally be U.S. source ordinary income or loss.

To the extent that any dividends paid exceed our current and accumulated earnings and profits as calculated for U.S. federal income tax purposes, the distribution will be treated as follows:

- first, as a tax-free return of capital, which will cause a reduction in the adjusted basis of your shares in our company. This adjustment will increase the amount of gain, or decrease the amount of loss, that you will recognize if you later dispose of those shares; and

- second, the balance of the dividend in excess of the adjusted basis will be taxed as capital gain recognized on a sale or exchange.

French withholding tax imposed on the dividends you receive and on any *avoir fiscal* at 15% under the Treaty is treated as payment of a foreign income tax. You may take this amount as a credit against your U.S. federal income tax liability, subject to specific conditions and limitations.

The Précompte

A French company must pay an equalization tax known as the *précompte* to the French tax authorities if it distributes dividends out of:

- profits that have not been taxed at the ordinary corporate income tax rate, or
- profits that have been earned and taxed more than five years before the distribution.

The amount of the *précompte* is 50% of the net dividends before withholding tax.

If you are not entitled to the full *avoir fiscal* (as described above), you may generally obtain a refund from the French tax authorities in respect of any *précompte* paid by us with respect to dividends distributed to you. Under the Treaty, the amount of the *précompte* refunded to U.S. residents is reduced by the 15% withholding tax applied to dividends and by the partial *avoir fiscal*, if any. You are entitled to a refund of any *précompte* that we actually pay in cash, but not to any *précompte* that we pay by offsetting French and/or foreign tax credits. To apply for a refund of the *précompte*, you should file French Treasury Form RF1 B EU-No. 5053 before the end of the year following the year in which the dividend was paid. The form and its instructions are available from the Internal Revenue Service in the United States or from the *Centre des Impôts des Non Résidents*.

For U.S. federal income tax purposes, the gross amount of the *précompte*, including any amounts withheld due to French withholding tax, will be included in your gross income as dividend income when you receive the *précompte*. It will generally constitute foreign source income for foreign tax credit purposes. The amount of any *précompte* paid in euro, including any French withholding taxes, will be equal to the U.S. dollar value of the euro on the date the *précompte* is included in income, regardless of whether the payment is in fact converted into U.S. dollars. If the *précompte* is not converted into U.S. dollars on the date of receipt, you will generally be required to recognize a U.S. source ordinary income or loss when you sell or dispose of the euro.

Taxation of Capital Gains

If you are a resident of the United States for purposes of the Treaty, you will not be subject to French tax on any capital gain if you sell or exchange your shares, unless you have a permanent establishment or fixed base in France and the shares you sold or exchanged were part of the business property of that permanent establishment or fixed base. Special rules apply to individuals who are residents of more than one country.

In general, for U.S. federal income tax purposes, you will recognize capital gain or loss if you sell or exchange your shares in the same manner as you would if you were to sell or exchange any other shares held as capital assets. Any gain or loss will generally be U.S. source gain or loss. If you are an individual, any capital gain will generally be subject to U.S. federal income tax at preferential rates if you meet the specified minimum holding periods.

French Estate and Gift Taxes

Under "The Convention Between the United States of America and the French Republic for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Estates, Inheritance and Gifts of November 24, 1978," if you transfer your shares or ADSs by gift or if they are transferred by reason of your death, that transfer will be subject to French gift or inheritance tax only if one of the following applies:

- you are domiciled in France at the time of making the gift or at the time of your death; or
- you used the shares or ADSs in conducting a business through a permanent establishment or fixed base in France, or you held the shares or ADSs for that use.

French Wealth Tax

The French wealth tax does not generally apply to shares or ADSs if the holder is a resident of the United States for purposes of the Treaty.

French Transfer Taxes

Transfers of shares or ADSs of listed common stock are not subject to French registration or transfer taxes, unless the transfer is effected by means of a written agreement executed in France (in which case a 1% registration duty, subject to a maximum of €3,049 per transfer, applies).

United States Information Reporting and Backup Withholding

Dividend payments on the shares and proceeds from the sale, exchange or other disposition of the shares may be subject to information reporting to the Internal Revenue Service and possible U.S. backup withholding. U.S. federal backup withholding generally is a withholding tax imposed at the rate of 31% on specified payments to persons that fail to furnish required information. Backup withholding will not apply to a holder who furnishes a correct taxpayer identification number or certificate of foreign status and makes any other required certification, or who is otherwise exempt from backup withholding. Any U.S. persons required to establish their exempt status generally must file Internal Revenue Service Form W-9, entitled Request for Taxpayer Identification Number and Certification. Finalized Treasury regulations have generally expanded the circumstances under which information reporting and backup withholding may apply.

Amounts withheld as backup withholding may be credited against your U.S. federal income tax liability. You may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the Internal Revenue Service and furnishing any required information.

DOCUMENTS ON DISPLAY

Certain documents referred to in this document can be inspected at our offices at 36-38, avenue Kléber, 75116 Paris, France.

We are subject to the periodic reporting and other informational requirements of the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F no later than six months after the close of each fiscal year. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the SEC at Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549. The public may obtain information regarding the SEC's Public Reference Rooms by calling the SEC at 1-800-SEC-0330. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions in Section 16 of the Exchange Act.

ENFORCEABILITY OF CIVIL LIABILITIES AGAINST FOREIGN PERSONS

Our company is a corporation organized under the laws of France. The majority of our directors are citizens and residents of countries other than the United States, and the majority of our assets are located outside of the United States. Accordingly, it may be difficult for investors:

- to obtain jurisdiction over our company or our directors in courts in the United States in actions predicated on the civil liability provisions of the U.S. federal securities laws;
- to enforce judgments obtained in such actions against us or our directors;
- to obtain judgments against us or our directors in original actions in non-U.S. courts predicated solely upon the U.S. federal securities laws; or
- to enforce against us or our directors in non-U.S. courts judgments of courts in the United States predicated upon the civil liability provisions of the U.S. federal securities laws.

Actions brought in France for enforcement of judgments of U.S. courts rendered against French persons, including some directors of our company, would require those persons to waive their right to be sued in France under Article15 of the French Civil Code. In addition, actions in the United States under the U.S. federal securities laws could be affected under certain circumstances by the French law of July16, 1980, which may preclude or restrict the obtaining of evidence in France or from French persons in connection with those actions. Each of the foregoing statements applies to our auditors as well.

ITEM 11: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As a result of our global operating and financing activities, we are subject to various market risks relating primarily to fluctuations in interest rates, foreign currency exchange rates and equity market risk due to investment securities. We apply a centrally managed risk management policy. As part of this policy, derivative financial instruments are used to manage interest rate risk, primarily related to long term debt, and foreign currency risk associated with foreign denominated assets. We do not generally use derivative or other financial instruments for trading purposes. Our accounting policy for hedging instruments is described in Note 2 to our financial statements.

Exposure to interest rate risk

As a result of our outgoing financing activities, our operating results are exposed to fluctuations in interest rates. We have short-term and long-term financings with both fixed and variable interest rates. Short-term debt is primarily comprised of euro-denominated secured and unsecured notes and commercial paper payable to investors and bank lines of credit used to finance working capital requirements. Short-term financial assets are primarily comprised of cash and marketable securities. Long-term debt represents bonds and notes payable to banks used to finance long-term investments.

At December 31, 2001, our short-term debt amounted to €4.9 billion and our long-term debt amounted to €13.1 billion. Approximately 62% of our total debt outstanding at December 31, 2001 was denominated in euro, 25% in U.S. dollars and 6% in British pounds. At December 31, 2001, approximately 55% of our euro-denominated debt, 80% of our U.S. dollar-denominated debt and 20% of our British pound-denominated debt bore interest at floating rates, in each case after giving effect to our financial hedging instruments. As a result, approximately 40% of our total gross debt bore interest at fixed rates, while 60% was subject to floating interest rates. During 2001, the average cost of our net debt was 4.85%, compared to 5.1% during 2000.

Interest rate risk management instruments used to manage our exposure to interest rate variations include pay-variable and pay-fixed interest rate swaps and interest rate caps and collars. Pay-variable swaps effectively convert fixed rate debt into variable rate debt and are considered financial hedges against changes in the fair value of fixed rate debt. Pay-fixed swaps and interest rate caps and collars convert variable rate debt into fixed rate debt and are considered financial hedges against changes in future cash flows required for interest payments on variable rate debt.

Based upon the above information, a hypothetical increase in average market rates of 0.1% over 2002 would result in a decrease (before taxes) in our annual net income of approximately €10 million assuming a constant financing structure.

Exposure to foreign currency risk

We have worldwide operations that include significant operations in countries outside of the euro zone, mainly the United States and the United Kingdom. Because product and operating costs are based largely on the currency in which related revenues are generated, we face limited related foreign exchange exposure linked to commercial transactions. We are exposed to foreign currency exchange risk to the extent of planned disposals of assets denominated in currencies other than the euro as well as known non-euro cash needs. We enter into currency forward contracts to hedge specific firm commitments and anticipated foreign currency denominated transactions.

We manage all significant hedging operations in a centralized manner.

We have significant investments denominated in foreign currencies, principally U.S. dollars and British pounds. Our policy is to hedge our exposure to currency fluctuations by incurring debt denominated in the corresponding currency based on future cash flow projections.

Exposure to equity risk

Our exposure to equity risk relates primarily to our investments in the securities of unconsolidated entities. As of December 31, 2001 we held equity securities as follows (in millions of euro):

Company	Fair Value
Vivendi Environment(1)(2)	133
Vivendi Universal(2)	19
Vinci	102

(1) Excluding shares held for stock option purposes.

(2) Under French GAAP, these securities are recorded at cost and classified as "other marketable securities." Under U.S. GAAP, our shares are recorded as treasury shares at cost and the Vivendi Universal shares are considered "available for sale securities" and adjusted to market value.

A hypothetical decrease of 10% in overall portfolio share prices in 2002 would result in a decrease in our equity portfolio of €25 million.

Exposure to other market risks

Our exposure to other market risks, including changes in commodity prices, are not considered material.

Ethics, vigilance and risk management

Ethics and vigilance

In accordance with the commitments we made in our 2000 Annual Report, we developed in 2001 a vigilance program for our company with each of our four operating divisions and our corporate departments. We expect this process to result in a general agreement from all of our employees in 2002 to reaffirm their commitment to our strong corporate values, including a strict observance of applicable laws under all circumstances, loyalty towards our clients and consumers, and a sense of solidarity, meaning tolerance, respect of others, social dialogue and a commitment to help the most disfavored.

We have established mechanisms to monitor the application of our norms and procedures throughout our company through regular reports to designated persons within each operating division that are responsible for the application of these norms and procedures in each division. This process, which is a part of the vigilance program established by Vivendi Universal, anticipates the implementation of the new French economic regulations published on May 15, 2001.

Coordination committee for the evaluation and prevention of risks

We created a coordination committee for the evaluation and prevention of risks ("CEPR") in 2001, under the general corporate secretariat, to provide support and aid to our operating divisions. The CEPR is composed of the general manager of each of our operating divisions and the head of each of our corporate departments. The CEPR met for the first time in December 2001. The CEPR is responsible for identifying and prioritizing our principal risks and for the development of model protection and prevention mechanisms that are to be gradually generalized and implemented throughout our company. The CEPR has established specialized working committees dedicated to the legal risks, industrial risks, environmental and sanitary risks and financial risks.

Management of legal risks

In the context of the development of our business in France and internationally, we consider that the management of our legal risks is a key issue. Our priorities include the respect of legal and regulatory provisions and the adoption of ethical rules within our company and with respect to our partners. In addition, the specificity of our activities (outsourcing of local public services with operations in over 100 countries and relationships with a variety of representatives and counterparties) has led us to adopt legal vigilance rules to guide our employees in their activities and in the preparation of legal documents.

In particular, our rules cover civil liability and insurance policies, criminal responsibility, intellectual and industrial property, ethics, standard contractual clauses, sponsorship and patronage, confidentiality and compliance

with labor laws and security norms. In addition to the formalization of a number of these rules in internal memos, the Legal Departments of our company and each of its operating divisions ensure, on a daily basis, an adequate management of our legal risks in tight coordination with our operating teams in the field.

We also ensure that our rules are coherent with Vivendi Universal's vigilance program through the wide dissemination throughout all of our operating divisions of this program and our participation in a joint working group with Vivendi Universal that holds periodic working sessions.

Management of industrial, environmental and sanitary risks

Sanitary risks are subject to particular consideration, including the risks relating to the operation of our facilities and the risks relating to certain types of pollution that cannot be treated through traditional methods (for example, the presence of nitrates or bacteria (légionnelles) in our water and the emission of dioxides from our waste incineration activities).

We believe that mere compliance with regulatory norms does not suffice to ensure a perfect control of sanitary risks, and we have voluntarily taken a number of steps to establish strict vigilance and prevention procedures in the context of a global sanitary policy, particularly with respect to our multi-service offerings (for example, sanitary diagnosis and checkpoint controls and inspections).

Management of financial risks

We have centralized the management within our company of our exposure to risks resulting from fluctuations in currency exchange rates to ensure an effective control of our coverage mechanisms. Our exposure to the effect of fluctuations in currency exchange rates on our transactions is limited due to the nature of our services. We limit our exposure to the impact of fluctuations of currency exchange rates on our assets and liabilities relating to our international investments by financing our local operations and acquisitions, to the extent possible, in local currency. Our company carries out all interest rate and currency exchange rate coverage operations and any material transactions with derivative products relating to our business.

Our subsidiaries' liquidity and capital resources is also managed by our company. Each of our operating divisions centralizes the treasury activities of its operating subsidiaries, while our company centralizes the treasury activities of each of our operating divisions to ensure a fluid allocation of funds between our different subsidiaries. In addition to our ability to directly access the capital markets for sources of funding due to the size and credit standing of our company, we have confirmed, unused credit lines extended by a number of large financial institutions.

Our company also controls our subsidiaries' commitments to financial institutions through different internal reporting mechanisms, including a computer database on financial commitments and regular meetings with the managers of the treasury departments of our operating divisions. We also make customary verifications during the preparation of our financial statements. Our banking relationships are centralized and our company monitors regularly the status of its consolidated commitments to its principal banks. Our management board has the power, upon authorization of our supervisory board, to issue guarantees subject to an aggregate maximum amount and a maximum amount for each transaction. The commitment committee of our supervisory board is regularly informed of the use of these authorizations.

We also assume the centralized management of interest rate risks, except for certain project financing transactions effected by our subsidiaries that require specific coverage. Management decisions are proposed to our senior management in the context of monthly meetings during which our company's interest rate position is analyzed. Although we use a wide range of derivative instruments to cover these risks, our primary coverage mechanisms rely on swaps and caps.

We created several working groups in 2001, which include representatives of each of our operating divisions, to extend and improve the centralization of our treasury, to normalize and develop our cash flow expectations and to evaluate our exposure to hedging and derivative instruments in light of U.S. accounting principles.

ITEM 12: DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

Not Applicable.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS

None.

ITEM 15. [RESERVED]

ITEM 16. [RESERVED]

PART III

ITEM 17: FINANCIAL STATEMENTS

Not Applicable.

ITEM 18: FINANCIAL STATEMENTS

VIVENDI ENVIRONNEMENT
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REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To the Shareholders of Vivendi Environnement:

We have audited the accompanying consolidated balance sheet of Vivendi Environnement and subsidiaries (together the "Company"), as of December 31, 2001 and 2000 and the related consolidated statements of income, change in shareholders' equity and cash flows for each of the years then ended, expressed in Euros. We have audited the accompanying consolidated balance sheet of the Company's predecessor (statement prepared in accordance with the principles described in Note 2) for the year ended December 31, 1999 and the related statements of income, change in shareholders' equity and cash flows for the year then ended, expressed in Euros. We have also audited the information presented in Note 26, which includes the approximate effect of the differences between accounting principles generally accepted in France and the United States of America on the consolidated net income and shareholders' equity of Vivendi Environnement and subsidiaries as of December 31, 2001, 2000 and 1999 and for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in France and the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statements presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, (a) the financial position of Vivendi Environnement and subsidiaries as of December 31, 2001, 2000 and 1999 and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in France and (b) the information with respect to accounting principles generally accepted in the United States of America as of and for the years ended December 31, 2001, 2000 and 1999 set forth in Note 26.

The accompanying financial statements as of and for the year ended December 31, 2001 include changes in accounting principles related to presentation of the statements of income and cash flows and changes in the definition of exceptional income. The Company also changed its accounting policy relating to goodwill whereby it forgoes the imputation of a part of goodwill on shareholders' equity as of January 1, 2001. These changes are described in Note 2.

The accounting practices of the Company used in preparing the accompanying financial statements vary in certain respects from accounting principles generally accepted in the United States of America. A description of the significant differences between the Company's accounting practices and accounting principles generally accepted in the United States of America and the approximate effect of those differences on consolidated net income and shareholders' equity for the years ended December 31, 2001, 2000 and 1999 is set forth in Note 26 to the consolidated financial statements.

/s/ Barbier Frinault & Cie Andersen

Barbier Frinault & Cie
Andersen

/s/ RSM Salustro Reydel

RSM Salustro Reydel

Paris France

April 10, 2002
(Except with respect to the matters discussed in Note 26 as to which the date is May 23, 2002)

VIVENDI ENVIRONNEMENT

CONSOLIDATED BALANCE SHEETS – ASSETS

	At December 31,			
	2001 ($ millions)	2001	2000 (€ millions)	1999
Goodwill, net	5,983.8	6,795.8	7,056.5	6,224.3
Other intangible assets, net	3,942.1	4,477.0	4,223.4	3,877.3
Property plant and equipment	14,830.8	16,843.4	14,275.7	12,374.9
Publicly-owned utility networks	5,421.1	6,156.7	5,619.2	3,960.6
Accumulated depreciation	(7,756.3)	(8,808.8)	(7,512.1)	(5,170.5)
Property, plant and equipment, net	12,495.6	14,191.3	12,382.8	11,165.0
Investments accounted for using the equity method	544.2	618.0	523.4	344.3
Investments accounted for using the cost method	216.4	245.8	244.1	349.9
Portfolio investments held as financial assets	944.6	1,072.8	932.0	742.5
Financial assets	1,705.2	1,936.6	1,699.5	1,436.7
Total long-term assets	24,126.7	27,400.7	25,362.2	22,703.3
Inventories and work-in-progress	1,359.2	1,543.7	1,483.4	1,502.7
Accounts receivable	10,624.3	12,066.0	10,727.9	10,069.1
Short-term loans	867.7	985.5	224.8	5,311.7
Cash and cash equivalents	1,839.7	2,089.3	1,528.1	1,389.5
Other marketable securities	285.4	324.1	496.6	431.4
Total current assets	14,976.3	17,008.6	14,460.8	18,704.4
TOTAL ASSETS	39,103.0	44,409.3	39,823.0	41,407.7

The accompanying notes are an integral part of these consolidated financial statements.

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S. $ 1 = €1.1357.

VIVENDI ENVIRONNEMENT

CONSOLIDATED BALANCE SHEETS – LIABILITIES AND SHAREHOLDERS' EQUITY

	At December 31,			
	2001 ($ millions)	2001	2000 (€ millions)	1999
Share capital	4,115.0	4,673.4	4,673.4	2,946.1
Additional paid-in capital	1,998.4	2,269.6	232.6	(2,532.4)
Retained earnings	923.0	1,048.2	687.5	306.7
Net Income	(1,982.2)	(2,251.2)	614.8	(42.3)
Total shareholders' equity	5,054.2	5,740.0	6,208.3	678.1
Minority Interests	2,228.7	2,531.1	2,031.1	1,438.1
Deferred income	1,305.9	1,483.1	1,270.6	1,008.8
Reserves and allowances	2,813.9	3,195.7	3,085.4	2,688.8
Bonds	4,573.0	5,193.6	2,444.1	3,592.8
Other financial long-term debt	6,991.6	7,940.4	9,024.6	15,236.6
Long-term debt	11,564.6	13,134.0	11,468.7	18,829.4
Other long-term liabilities	437.2	496.6	660.9	790.1
Total long-term liabilities and shareholders' equity	23,404.5	26,580.5	24,725.0	25,433.3
Accounts payable	11,393.2	12,939.3	10,854.4	10,004.6
Bank overdrafts and other short-term borrowings	4,305.3	4,889.5	4,243.6	5,969.8
Total current liabilities	15,698.5	17,828.8	15,098.0	15,974.4
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	39,103.0	44,409.3	39,823.0	41,407.7

The accompanying notes are an integral part of these consolidated financial statements.

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S. $ 1 = €1.1357.

On January 1, 2001 Vivendi Environnement has forgone the imputation of the goodwill of US Filter recorded as a reduction of shareholders' equity, which represents an increase in additional paid-in capital of €2,037 million.

VIVENDI ENVIRONNEMENT

CONSOLIDATED STATEMENTS OF INCOME

	At December 31,			
	2001 ($ millions)	2001	2000 restated (€ millions)	1999 restated
Revenue	25,646.5	29,126.7	26,262.5	20,930.0
Cost of sales	(20,736.9)	(23,550.9)	(21,107.0)	(16,335.6)
Selling, general and administrative costs	(3,131.7)	(3,556.7)	(3,254.5)	(2,716.6)
Other operating income (expense)	(5.3)	(6.0)	(251.0)	(501.9)
EBIT	1,772.6	2,013.1	1,650.0	1,375.9
Goodwill amortization(1)	(2,562.4)	(2,910.1)	(306.3)	(366.8)
Restructuring costs	(43.5)	(49.4)	(54.4)	(47.2)
Operating income (loss)	(833.3)	(946.4)	1,289.3	961.9
Financial income (expenses)	(702.7)	(798.0)	(891.8)	(600.4)
Other income (expenses)	34.3	38.9	777.3	(56.4)
Net income (loss) before taxes, minority and equity interests	(1,501.7)	(1,705.5)	1,174.8	305.1
Income taxes	(407.1)	(462.3)	(459.2)	(298.5)
Net income (loss) before minority and equity interests	(1,908.8)	(2,167.8)	715.6	6.6
Equity in net income of affiliates	42.1	47.8	60.6	44.5
Minority interest	(115.5)	(131.2)	(161.4)	(93.4)
Net income (loss)	(1,982.2)	(2,251.2)	614.8	(42.3)
Basic earnings per share	(5.8)	(6.6)	2.2	(0.2)
Diluted earnings per share	(5.8)	(6.6)	2.2	(0.2)

The accompanying notes are an integral part of these consolidated financial statements.

(1) Goodwill amortization includes goodwill write-downs of €2,652.2 million in 2001, €74.2 million in 2000 and €195.7 million in 1999.

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S.$1 = €1.1357.

VIVENDI ENVIRONNEMENT

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Prepared in accordance with International Accounting Standard No. 7)

	At December 31,			
	2001 ($ millions)	2001	2000 restated (€ millions)	1999 restated
Cash flow from operating activities:				
Net income (loss)	(1,982.2)	(2,251.2)	614.8	(42.3)
Adjustment to reconcile net income to net cash provided by operating activities				
Depreciation and amortization	4,124.3	4,684.0	2,070.4	1,618.6
Financial provisions	47.3	53.7	6.0	48.3
Gains on sale on property and equipment and financial assets, net	(127.6)	(144.9)	(799.0)	(14.1)
Undistributed earnings of affiliates, net	(13.1)	(14.9)	(30.6)	(24.2)
Deferred taxes	79.4	90.2	(6.9)	24.6
Minority interests	115.5	131.2	161.4	93.4
Net changes in current assets and liabilities:				
Prepaid, deferrals and accruals	(81.8)	(92.9)	(63.4)	(120.7)
Increase (decrease) in working capital	384.6	436.8	(314.7)	(2.8)
Net cash provided by operating activities	2,546.4	2,892.0	1,638.0	1,580.8
Cash flow from investing activities:				
Purchase of property, plant and equipment	(2,534.6)	(2,878.5)	(2,586.2)	(1,902.6)
Proceeds from sale of property, plant and equipment	181.2	205.8	230.7	159.3
Purchase of investments	(1,029.1)	(1,168.8)	(659.3)	(7,903.5)
Proceeds from sale of investments	307.9	349.7	1,248.7	21.6
Purchase of portfolio investments held as financial assets	(129.1)	(146.6)	(37.2)	(36.2)
Proceeds from sale of portfolio investments held as financial assets	37.2	42.2	17.1	56.4
Disbursement on notes receivables	(86.9)	(98.7)	(75.0)	(854.8)
Principal payment on notes receivables	16.5	18.7	111.1	36.3
Net (increase) decrease in short-term loans	140.6	159.7	256.7	(4,390.8)
Sales and purchases of marketable securities	109.2	124.1	(43.3)	(17.4)
Net cash used in investing activities	(2,987.1)	(3,392.4)	(1,536.7)	(14,831.7)

The accompanying notes are an integral part of these consolidated financial statements.

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S.$1 = €1.1357.

VIVENDI ENVIRONNEMENT

CONSOLIDATED STATEMENTS OF CASH FLOWS – (Continued)
(Prepared in accordance with International Accounting Standard No. 7)

	At December 31,			
	2001 ($ millions)	2001	2000 restated (€ millions)	1999 restated
Cash flow from financing activities:				
Net increase (decrease) in short-term borrowings	(3.3)	(3.8)	3,293.4	1,535.1
Proceeds from issuance of bonds and other long-term debt	4,054.2	4,604.4	7,517.2	17,938.8
Principal payment on bonds and other long-term debt	(2,937.3)	(3,335.9)	(13,376.1)	(5,212.0)
Net proceeds from issuance of common stock	362.1	411.2	2,727.9	
Purchase of treasury stock	(121.9)	(138.4)	(44.3)	
Cash dividends paid	(263.3)	(299.0)	(46.5)	(258.1)
Net cash provided by financing activities	1,090.5	1,238.5	71.6	14,003.8
Effect of foreign currency exchange rate changes on cash and cash equivalents	(155.6)	(176.9)	(34.3)	42.8
Change in cash and cash equivalents	494.2	561.2	138.6	795.7
Cash and cash equivalents:				
Beginning	1,345.5	1,528.1	1,389.5	593.8
Ending	1,839.7	2,089.3	1,528.1	1,389.5
Supplemental disclosures of cash flow information:				
Cash payments for:				
Interest	680.5	772.8	878.6	613.4
Income Taxes	338.8	384.8	273.9	236.0
Supplemental disclosures for non-cash investing and financial activities:				
Acquisition:				
Issuance of common stock in settlement of note payable	—	—	1,396.6	—
Issuance of common stock of subsidiaries	155.9	177.0	—	—

The accompanying notes are an integral part of these consolidated financial statements.

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S.$1 = €1.1357.

VIVENDI ENVIRONNEMENT

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

(€ millions except for share information)	Number of Shares	Share capital	Additional paid-in capital	Retained earnings	Net income	Shareholders' equity
Balance at December 31, 1998	—	2,946.1	243.6	(6.1)	162.0	3,345.6
Net income (loss) for the year 1999					(42.3)	(42.3)
Foreign currency translation adjustment				315.3		315.3
Dividends paid and net income appropriation				(2.5)	(162.0)	(164.5)
Goodwill			(2,776.0)			(2,776.0)
Balance at December 31, 1999 (a)	218,228,507	2,946.1	(2,532.4)	306.7	(42.3)	678.1
Net income (loss) for the year 2000					614.8	614.8
Foreign currency translation adjustment				413.3		413.3
Dividends paid and net income appropriation				(42.3)	42.3	—
Goodwill			687.0	9.8		696.8
Capital increase	127,946,448	1,727.3	2,078.0			3,805.3
Balance at December 31, 2000	346,174,955	4,673.4	232.6	687.5	614.8	6,208.3
Net income (loss) for the year 2001					(2,251.2)	(2,251.2)
Foreign currency translation adjustment				(30.5)		(30.5)
Dividends paid and net income appropriation				392.2	(614.8)	(222.6)
Goodwill			2,037.0	(1.0)		2,036.0
Conversion of warrants	817	0.0				0.0
Balance at December 31, 2001	346,175,772	4,673.4	2,269.6	1,048.2	(2,251.2)	5,740.0
Balance at December 31, 2001 ($ millions)		4,115.0	1,998.4	923.0	(1,982.2)	5,054.2

(a) Following a 3 for 1 reverse stock split at the beginning of the year 2000. Before the split, the number of shares was 654,685,522.

The accompanying notes are an integral part of these consolidated financial statements.

For periods presented prior to January 1, 1999, the consolidated financial statements have been prepared in French Francs and translated into euros using the official fixed exchange rate €1 = FF6.55957, applicable since January 1, 1999 (see Note 2 to the consolidated financial statements).

For the convenience of the reader, the financial statements as of and for the year ended December 31, 2001 have been translated into U.S. Dollars at the rate of U.S.$1 = €1.1357.

1. DESCRIPTION OF BUSINESS

FORMATION OF VIVENDI ENVIRONNEMENT

Vivendi Environnement (or the Group) was formed at the end of 1999 and is a world-wide group providing environmental services. It includes the water, waste management, energy services and transportation activities formerly held by Vivendi Universal, as well as Vivendi Universal's former interest in the Spanish company Fomento de Construcciones y Contratas Group ("FCC"). Vivendi Environnement has been listed on the Paris Stock Exchange since July 20, 2000 and on the New-York Stock Exchange since October 5, 2001. As of December 31, 2001, Vivendi Universal had a 63% controlling interest in the Group.

SEGMENT DESCRIPTION

Vivendi Environnement supplies a wide array of environmental management services to a range of public authorities and industrial, commercial and residential customers. The Group offers a variety of integrated services, including water treatment and system operation, waste management, energy services, and transportation services. Through FCC, a publicly listed Spanish company, the Group also provides environmental and construction services.

Following is a brief description of each of the Group's business segments:

- Water – the Group manages and operates water and waste water treatment and distribution systems for public authorities and private companies. The Group is also a designer and manufacturer of water and waste water treatment equipment and water systems. In addition, the Group provides consumers with bottled water.
- Waste management – the Group collects hazardous and non-hazardous waste and offers related services, including disposal, treatment and recycling.
- Energy services – the Group provides energy management services and offers a wide range of industrial utilities and facilities management services.
- Transportation – the Group provides integrated transportation solutions involving bus, trains, maritime, tram and other networks.
- FCC – FCC operates in a number of different environmental and construction related industries.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Preparation

The consolidated financial statements of the Group have been prepared in accordance with accounting principles generally accepted in France ("French GAAP"). The Comité de la Réglementation Comptable ("CRC") issued new rules in April 1999 regarding methods of consolidation. These new rules came into effect for financial years beginning after January 1, 2000. The adoption of these new rules by the Group has lead to the following changes:

- adoption of average exchange rates for the translation of income statements of foreign companies; and
- adjustments to year-end exchange rate of balances denominated in foreign currency are recognized in income statement.

The Group has retroactively adopted these new rules for all periods presented. The effect of the retroactive adoption is not significant.

Vivendi Environnement applies since January 1, 2001 the regulation CRC-2000-06 relative to reserves.

The financial statements for 1999 include the operating results of the Group while it was part of Vivendi Universal. Financial statements prior to 2000 are not necessarily indicative of what the financial position, results of

operations, or cash flows would have been had the Group been a stand-alone company during such periods. Financial data included in the accompanying consolidated financial statements have been prepared on a basis that reflects the historical assets, liabilities, and operations of the business contributed to the Group by Vivendi Universal.

The financial statements of foreign subsidiaries have, when necessary, been adjusted to comply with French GAAP. French GAAP differs in certain respects from accounting principles generally accepted in the United States. A description of these differences and their approximate effects on net income and shareholders' equity is set forth in Note 26. The financial statements have been formatted in the original French GAAP financial statements presentation and where necessary have been modified to include certain additional disclosures in order to conform more closely with the content of financial statements required by the generally accepted accounting principles in the United States ("U.S. GAAP").

Change of presentation and accounting principles

In 2001 Vivendi Environnement has modified the presentation of its consolidated statement of income. It is now a statement of income by function. This presentation is in line with the French and international practices. This new presentation mainly consists of the reclassification of exceptional income. In order to allow a consistent comparison the restated historical years are also disclosed.

Until the end of 1999, and in accordance with French GAAP, for acquisitions which were completed through the issuance of capital, the portion of goodwill attributable to such proceeds could be charged to shareholders' equity, up to the amount of the related share premium.

Vivendi Environnement has been listed on the New-York Stock Exchange since October 5, 2001. Vivendi Environnement files with the SEC an annual report on Form 20-F which includes a reconciliation with U.S. GAAP of equity and net income as reported in the French accounts. One of the adjustments is the reclassification of the goodwill recorded under French GAAP as a reduction of shareholders' equity to the assets under U.S. GAAP.

According to the French Code of Commerce, the listing on the New-York Stock Exchange is considered as an event for which a better convergence between French GAAP and U.S. GAAP would improve the quality of financial information. Consequently, from 2001, Vivendi Environnement will no longer record goodwill as a reduction of shareholders' equity.

Convenience Translations

The consolidated balance sheet and consolidated statements of income and cash flows include amounts as of and for the year ended December 31, 2001 denominated in millions of U.S. dollars. These amounts are presented as permitted convenience translations under Rule 3-20 of Regulation S-X of the U.S. Securities Exchange Commission and have been prepared using *an exchange rate of U.S.$1 to €1.1357, which was the exchange rate as of December 29, 2001*. Convenience translations are presented solely for the convenience of the reader of these financial statements and should not be construed as representations that the local currency has been, could have been, or could in the future be converted into U.S. dollars at this or any other rate of exchange.

Principles of Consolidation

All companies over which the Group has legal or effective control are consolidated.

The Group uses the equity method of accounting for its investments in certain affiliates in which it owns less than 20% of the voting shares. In these situations, the Group exercises significant influence over the operating and financial decisions of the affiliate either (a) through the disproportionate representation on the affiliate's board of directors, *e.g.*, the percentage of directors appointed to the board by the Group is greater than the percentage of its shareholding interest and those directors allow the Group to exercise significant influence, and (b) because there is no shareholder with a majority voting ownership in the affiliate, which is a consideration under French accounting principles in determining whether significant influence exists, or (c) because the Group exercises substantive participating rights through shareholder agreements that allow the Group to veto or block decisions taken by the board of the affiliate in question. Significant investments in which the Group has 20% to 50% ownership or otherwise exercises significant influence are accounted for under the equity method.

The proportionate method of consolidation is used for investments in jointly controlled companies, where the Group and other shareholders have agreed to exercise joint control over significant financial and operations policies. For such entities, the Group records its proportionate interest in the balance sheet and income statement accounts.

All other investments in affiliates that are not consolidated are accounted for at cost.

Subsidiaries acquired are included in the consolidated financial statements as of the acquisition date. All material intercompany transactions have been eliminated. In the case of proportionally consolidated companies, intercompany transactions are eliminated on the basis of the Group's interest in the company involved.

Use of Estimates

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosures of contingent assets and liabilities. Actual results could differ significantly from these estimates. Significant estimates made by management in the preparation of these financial statements include amounts for pension liabilities, deferred taxes, valuation estimates for long-lived assets, as well as recorded and disclosed amounts for certain financial instruments.

Introduction of the Euro

Since the introduction of the euro on January 1, 1999, the functional and reporting currency of the Group has been the euro. Prior to this date, the functional and reporting currency of the Group was the French franc. Consequently, prior periods have been restated from French francs into euros using the official fixed exchange rate €1=FF 6.55957. These restated financial statements depict the same trends as the financial statements previously prepared using the French franc. Further, the restated financial statements will not be comparable to financial statements of other companies that report in euros that have restated prior periods from currencies different from the French franc.

Translation of Foreign Subsidiaries' Financial Statements

Balance sheets, statements of income and cash flows of subsidiaries whose functional currency is different from that of the Group are translated into the reporting currency at the applicable exchange rate (i.e., the closing year-end rate for balance sheets, or the average annual rate for income and cash flow statements). Translation gains and losses are recorded in retained earnings. The exchange rates of the significant currencies of non-euro countries used in the preparation of the consolidated financial statements were as follows:

Year-End Closing Exchange Rates	2001	2000	1999
U.S. dollar	1.1357	1.0747	0.9954
Pound sterling	1.6030	1.6023	1.6085

Average Annual Exchange Rates	2001	2000	1999
U.S. dollar	1.1148	1.0827	0.9382
Pound sterling	1.6058	1.6407	1.5180

The balance sheets, income and cash flow statements of subsidiaries operating in highly inflationary economies are re-measured (according to the historical method) in functional currency. Functional currency is defined as the currency used in the dominant country of the economic area to which the subsidiaries belong. Related translation effects are included in net income. These financial statements are then translated from the functional currency into the reporting currency on the basis of the year-end exchange rate and the translation adjustments are recorded in retained earnings.

Subsequent to the introduction of the euro on January 1, 1999, the balance sheets, income and cash flow statements of subsidiaries located in countries that have adopted the euro as their official currency are translated from their former national currencies to the euro at the official fixed exchange rates that were established as of January 1, 1999, and are no longer subject to fluctuation.

Revenue Recognition

Revenues are recorded when title passes to the customer or when services are rendered in accordance with contracts; title is considered to have passed to the customer when goods are shipped.

Revenue resulting from government subsidies associated with long-term operating agreements is recorded ratably over the year.

Revenue relating to specific activities are discussed in applicable sections of these footnotes.

Other income and expenses

This item includes income or expenses resulting from exceptional operations or events that are not part of the ordinary operations of Vivendi Environnement. They primarily include capital gains and losses on sales of subsidiaries and affiliates.

Goodwill and Business Combinations

All business combinations are accounted for as purchases. Under the purchase accounting method, assets acquired and liabilities assumed are recorded at their fair value. The excess of the purchase price over the fair value of net assets acquired, if any, is capitalized as goodwill and amortized over the estimated period of benefit on a straight-line basis. Amortization periods for goodwill range from 20 to 40 years.

Other Intangible Assets

Start-up costs relating to the implementation of new activities, including pre-operating costs, are amortized over their estimated useful life.

Other intangible assets include costs incurred to obtain contracts, such as fees paid to local authorities for public services contracts. Fees paid to local authorities are amortized over the duration of the contract, which can be up to 30 years.

Market share and trademarks are not amortized.

Business assets acquired, such as customers lists and operating rights, are amortized over their estimated useful life.

Property, Plant and Equipment

Property, plant and equipment is carried at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the following useful life:

	Estimated useful lives in years
Buildings	20 to 50
Technical systems	7 to 12
Transport equipment	3 to 25
Other equipment and machinery	3 to 12

Assets financed by leasing contracts that include a purchase option (known in France as "crédit-bail") are capitalized and amortized over the shorter of the lease term or the estimated useful lives of the assets. Amortization expense on assets acquired under such leases is included with depreciation and amortization expense. Interest expense incurred as a result of expenditures for a fixed asset during the period necessary for its intended use is capitalized as part of the historical cost of fixed assets.

Valuation of Long-lived Assets

Long-lived assets, including goodwill and the other intangible assets, are regularly re-evaluated according to circumstances, either internal or external, which could lead to depreciation. If this is the case, an exceptional amortization or valuation allowance is recorded on the basis of the asset's fair value.

Financial Assets

Investments Accounted for Using the Cost Method

Investments in unconsolidated affiliates are carried at cost. Any negative difference between carrying value and fair value that is determined to be other than temporary is reserved.

Portfolio Investments Held as Financial Assets

Portfolio and other investments include unlisted and listed equity securities of unconsolidated subsidiaries and long-term loans that are recorded at cost. When fair value is less than cost and is determined to be other than temporary, a valuation allowance is provided. Estimated fair value is determined on the basis of the Group's share of the equity of the companies concerned adjusted to market value in case of listed securities or pursuant to other applicable procedures.

Bonds and Debentures

Issue costs, as well as discounts and premiums on convertible debt are amortized over the life of the debt.

Inventories and Work-in-progress

Group companies value inventories according to the provisions of the French Commercial Code, either on a first-in-first-out or a weighted average cost basis. Inventories are stated at the lower of cost or net realizable value.

Deferred Taxes

Deferred tax assets are recognized for deductible temporary differences, net tax operating loss carryforwards and tax credit carryforwards. Deferred tax liabilities, including those relating to tax loss carry-forwards, are recognized for taxable temporary differences. Deferred tax assets are recorded at their estimated net realizable value. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the enactment date.

Cash, Cash Equivalents and Marketable Securities

Cash and cash equivalents include all cash balances and short-term highly liquid investments with original maturities of three months or less at the time of purchase and are stated at cost which approximates their fair value.

Marketable securities including treasury shares and other highly liquid investments. Treasury shares are classified as marketable securities when they are acquired to stabilize the market price of the Group's shares or in connection with stock options granted to directors and employees. Treasury shares held for other reasons are recorded as an offset to shareholders' equity. Marketable securities are carried at cost, and a valuation allowance is provided if the fair value is less than the carrying value.

Pension Plans

The Group has several pension plans that cover substantially all employees. Pension obligations are calculated using the projected unit credit method. This method considers the probability of personnel remaining with companies in the Group until retirement, the foreseeable changes in future compensation, and the appropriate discount rate for each country in which the Group maintains a pension plan. This results in the recognition of pension-related assets or liabilities, and the recognition of the related net expenses over the estimated term of service of the employees.

Employees in France and most other European countries are eligible, for severance pay pursuant to applicable law immediately upon termination. The Group provides reserves for such employee termination liabilities using the projected unit credit method.

Stock Based Compensation

The Group has adopted stock option incentive plans that grant options on its common shares to certain directors and officers. The purpose of these stock option plans is to align the interest of management with the interest of shareholders by providing certain officers and other key employees with additional incentives to increase the Group's performance on a long-term basis. Shareholders' equity is credited for the cumulative strike price to reflect the issuance of shares upon the exercise of options.

Treasury shares held to cover commitments relating to stock purchase options are shown under marketable securities at the lower of cost and fair market value. The Group accounts for any capital gains in the year in which shares are sold under the plan.

Derivative Financial Instruments

The Group manages certain of its financial risks by using derivative financial instruments that qualify as hedges.

The Group primarily uses interest rate swaps and caps to manage interest rate risks relating to its funding costs. The goal of these swaps is, depending on the circumstances involved, to modify from fixed to floating rates and from floating to fixed as well as to modify the underlying index on floating rate debt. The goal of the interest caps is to limit the upside risk relating to floating rate debt. Interest rate swaps that modify borrowings or designated assets are accounted for on an accrual basis. Premiums paid for interest rate caps are expensed as incurred.

The Group uses currency swaps and forward exchange contracts to manage its foreign currency risk. Forward exchange contracts are used to hedge firm and anticipated transactions relating to assets denominated in foreign currencies. Currency rate swaps are used to modify the interest rate and currency of foreign denominated debt. Gains and losses arising from the change in the fair value of currency instruments that qualify for hedge accounting treatment are deferred until related gains or losses on hedged items are realized.

Any financial instrument that does not qualify as a hedge for financial reporting purposes is recorded at the lower of cost or fair value in other current assets or liabilities.

Foreign Currency Transactions

Foreign currency transactions are converted into euros at the exchange rate in effect on the transaction date. At year-end, receivables and payables denominated in foreign currencies are remeasured into euros at year-end exchange rates. The resulting exchange losses and gains are recorded in the current earnings period.

Exchange losses on borrowings denominated in foreign currencies that qualify as hedges of net investments in foreign subsidiaries are included as translation adjustments in retained earnings.

Research and Development

The Group's research and development costs are expensed as incurred. Research and development costs were €101.6 million, €79.4 million and € 53.0 million for 2001, 2000 and 1999 respectively.

Earnings Per Share

Earnings per share calculations are based on the Group's net income after taxes divided by the weighted average number of common shares outstanding, which includes treasury shares accounted for as marketable securities.

Accounting Policies Specific to the Environmental Services Activities

Public Services Contracts

The Group holds public service contracts relating to its operations in water distribution and treatment, district heating networks, urban transportation and waste collection and treatment. Under the French legal system, there are three primary types of public service contracts: "affermage" (or public service management) contracts, where the operator is granted the obligation to manage and maintain facilities owned and financed by local authorities, "concession," facility management contracts which are similar to "BOT" (build-operate-transfer) agreements and contracts presenting mixed characteristics of affermage and concession contracts. Revenue is recognized on these

contracts when services are rendered in accordance with the terms of the contracts. On an exceptional basis, the Group may also operate management contracts in which it manages a public service for a fixed fee as well as an incentive which is calculated in relation to the performance of the contract. For these contracts, the Group recognizes billing to customers as revenue and all related costs as operating expenses.

In France, the Group's public service contracts are primarily affermage contracts.

Facilities

Facilities operated by the Group are generally financed by local authorities and remain theirs throughout the contract period. Individual facilities financed by the Group as a consequence of specific contractual terms are recorded as fixed assets and depreciated to their estimated residual value, if any, on the shorter of their economic useful lives or the contract's term. Wherever the contract's term is shorter than the economic useful life of the asset, such depreciation is classified as a liability as a financial depreciation.

Fees Paid to Local Authorities

The Group does not have any obligation for compensation payments to local authorities during the contract period, except for fees that have been agreed upon by both parties and formally defined by the contract.

The Group's policy is to expense ratably fees that are paid to local authorities when these fees are paid annually and to amortize these costs on a straight-line basis over the life of the contract when the fees consist of payments at the beginning of the contract.

Commitments to Maintain and Repair Assets

The Group generally assumes a contractual obligation to maintain and repair facilities managed through public service contracts. Corresponding repair and maintenance costs are expensed as incurred, except for some investments in joint ventures where costs are accrued in advance.

Planned Maintenance Projects

The Group's policy is to expense costs relating to planned maintenance projects as they are incurred.

Landfill Capitalization and Depletion

Landfill sites are carried at cost and amortized ratably using the units of production method over the estimated useful life of the site as the airspace of the landfill is consumed. Landfill costs include capitalized engineering and other professional fees paid to third parties incurred to obtain a disposal facility permit. When the Group determines that the facility cannot be developed or the likelihood of grant of the permit cannot be determined before its final authorization, as it is the case in France and the United Kingdom, these costs are expensed as incurred.

Landfill Closure and Post-closure Costs

The Group has financial obligations relating to closure and post-closure costs and the remediation of disposal facilities it operates or for which it is otherwise responsible.

Landfill final closure and post-closure accruals consider estimates for costs of the final cap and cover for the site, methane gas control, leachate management, groundwater monitoring, and other monitoring and maintenance to be incurred after the site discontinues accepting waste. The cost estimates are prepared by engineers based on the applicable local, state and federal regulations and site specific permit requirements. These estimates do not take into account discounts for the present value of total estimated costs. The Group accrues a reserve for these estimated future costs pro rata over the estimated useful life of the sites.

Accruals for environmental remediation obligations are recognized when such costs are probable and reasonably estimable.

These liabilities are classified as reserves and allowances.

Construction

To calculate their margin, construction companies record revenue according to the percentage of completion method. This method is applied to contracts with a duration of six months or more; for contracts with a duration of less than six months, the completed contracts method is used.

Previous method of presentation of the historical accounts

The table below presents the consolidated statements of income as presented in the consolidated financial statements for 2000.

	2000	1999
Revenue	26,393.7	21,039.2
Miscellaneous operating income	311.6	602.8
Purchases and external costs	(13,009.0)	(10,249.3)
Personnel costs	(7,295.5)	(5,909.2)
Taxes other than income taxes	(399.0)	(312.4)
Other operating expenses	(2,691.0)	(2,685.5)
Depreciation and amorization	(1,363.3)	(976.2)
Employee profit-sharing	(37.9)	(33.3)
Operating income	1,909.6	1,476.1
Financial income	368.5	290.5
Financial expense	(1,246.0)	(865.6)
Financial provisions	(6.0)	(48.3)
Net financial (expenses) income	(883.5)	(623.4)
Exceptional items	623.7	(158.1)
Depreciation, amortization and provisions on exceptional items	(168.7)	(22.7)
Income taxes and deferred tax	(459.2)	(298.5)
Goodwill amortization	(306.3)	(366.8)
Equity in net income of affiliates	60.6	44.5
Minority interest	(161.4)	(93.4)
Net income (loss)	614.8	(42.3)
Basic earnings per share	2.2	(0.2)

Reconciliation of previous method of presentation of consolidated statement of income to current method of presentation

Previous method of presentation	2000 Published	Adjustments	2000 restated	Current method of presentation
Revenue	26,393.7	(131.2)	26,262.5	Revenue
Operating income	1,909.6	(259.6)	1,650.0	EBIT
		(620.3)	1,289.3	Operating income
Financial income (expense)	(883.5)	(8.3)	(891.8)	Financial income (expenses)
Exceptional items, net	455.0	322.3	777.3	Other income (expenses)
Income taxes and deferred tax	(459.2)	—	(459.2)	Income taxes and deferred tax
Goodwill amortization	(306.3)	306.3	—	
Equity in net income of affiliates	60.6	—	60.6	Equity in net income of affiliates
Minority interest	(161.4)	—	(161.4)	Minority interest
Net income (loss)	614.8	—	614.8	Net income (loss)

Reconciliation of previous method of presentation to current method of presentation of revenues

	2000	1999
Revenue, as reported in 2000	26,393.7	21,039.2
Impact of the current period presentation*	(131.2)	(109.2)
Current method of presentation of revenues	26,262.5	20,930.0

* Principally the reclassification of construction for internal use assets to cost of sales.

Reconciliation of previous method of presentation of operating income to current method of presentation

	2000	1999
Operating income (previous method of presentation)	1,909.6	1,476.1
Exceptional items reclassified as a component of cost of sales	(328.1)	(109.1)
Exchange rate effect		(19.0)
sub-total	(328.1)	(128.1)
Financial items reclassified as component of operating income		
Sundry revenues	24.0	22.2
Financial depreciation related to facilities reclassified as a component of operating income	(15.0)	(17.6)
sub-total	9.0	4.6
Items reclassified as a component of financial income	(7.6)	—
Goodwill amortization	(306.3)	(366.8)
Other reclassifications	12.7	(23.9)
Operating income (current method)	1,289.3	1,328.7

For December 31, 2000 exceptional items reclassified to operating income are the following:

Losses, provisions, depreciation and amortization on exceptional items, of which €232 million are related principally to the reorganization of the Group's activities in the UK, within the waste management and energy sectors (closure of non-profitable activities), the costs undertaken to integrate the international activities of US Filter and provisions for the establishment of the Group's headquarters. The losses mentioned above, include amortization expenses of €169 million for 2000, of which €56 million are from the waste-management sector in the UK, €17 million from the energy sector in the UK, and €20 million are from the activities of US Filter international. Other exceptional items are for small individual amounts.

In 2001, exceptional items would have amounted to €48 million.

Financial statements for 1999

The financial statements for 2001 and 2000 are compared to 1999. The financial statements for 1999 have been prepared giving effect to the transactions completed to form the Group as if such transaction had occurred on January 1, 1999.

Scope of Consolidation

With regard to Vivendi Universal's water operations, the substantial majority of which were transferred in 1999 and 2000 to Vivendi Water, a wholly-owned subsidiary of the Group, the estimated balance sheet and income statements for 1999 include results from contracts transferred as well as the income derived from rights to receivables from non-transferred contracts, as if those items had been transferred.

Goodwill

Goodwill–Businesses Transferred by Contribution

When contributions of assets or operating entities from Vivendi Universal to the Group have been recorded at net book value, goodwill is recorded in the Group's consolidated financial statements at historical value.

Goodwill–Businesses Transferred by Sale

In recent years, Vivendi Universal has sold assets or operating entities to certain of its subsidiaries as part of an internal restructuring operation. These transactions were at market value which, in certain cases, has resulted in the generation of additional goodwill. This goodwill is reflected in the Group's consolidated financial statements. The most significant portion of the additional goodwill results from the creation of the Group's water segment under Vivendi Water, and the remaining stake of Dalkia sold to CGC Holding.

3. GOODWILL AND BUSINESS COMBINATIONS

Goodwill by segment is detailed as follows:

	2001			2000	1999
(€ millions)	Gross	Accumulated amortization	Net	Net	Net
Water	7,242.0	(3,472.7)	3,769.3	4,505.4	3,551.6
Waste Management	1,756.8	(311.2)	1,445.6	1,387.7	1,323.6
Energy Services	841.6	(138.9)	702.7	483.0	428.6
Transportation	215.3	(58.2)	157.1	66.6	175.8
FCC	829.6	(108.5)	721.1	613.8	744.7
Total	10,885.3	(4,089.5)	6,795.8	7,056.5	6,224.3

Total goodwill amortization expense for the years ended December 31, 2001, 2000 and 1999 was €2,910.1 million, €306.3 million and €366.8 million, respectively.

The following is a summary of the most significant acquisitions during the periods presented in the accompanying financial statements.

FCC

In October 1998, Vivendi Universal acquired for cash 49% and obtained joint control of a Spanish holding company whose only asset is a 57% ownership interest in FCC, a publicly listed company in Spain active in the environmental services sector. Vivendi Universal sold to the Group its interest in the holding company for €691 million. The holding company, which fully consolidates FCC, is reflected in the Group's financial statements on the proportionate consolidation method. The details of the Group's acquisition are as follows (in millions of euros):

Fair value of net tangible and intangible assets acquired	212
Purchase price	691
Goodwill	479
Goodwill net at December 31, 2001	431

Goodwill recorded from this transaction is being amortized over 20 years.

United States Filter Corporation

In April 1999, Vivendi Universal acquired for cash 100% of the outstanding shares of United States Filter Corporation, a U.S. based water treatment and equipment manufacturing company. The transaction was accounted for as a purchase. The details of the acquisition are as follows (in millions of euros):

Fair value of net tangible and intangible assets acquired	459
Purchase price	5,801
Goodwill	5,342
Goodwill net at December 31, 2001	2,488

Goodwill recorded from this transaction is being amortized over 40 years.

Superior Services

In June 1999, Vivendi Environnement acquired for cash 100% of the outstanding shares of Superior Services, a U.S. based waste management company. The transaction was accounted for as a purchase. The details of the acquisition are as follows (in millions of euros):

Fair value of net tangible and intangible assets acquired	168
Purchase price	932
Goodwill	764
Goodwill net at December 31, 2001	773

Goodwill recorded from this transaction is being amortized over 40 years.

Impairment of goodwill

Goodwill amortization in 2001 included a write-off of goodwill of €2,611 million, related to activities of US Filter. The management determined that the goodwill was impaired, and goodwill was written down based upon an estimate of discounted future cash flow. The analysis was based on a projection over 10 years with a terminal value and with a discount rate of 7% for the goodwill. The management revised the estimated cash flows as a result of the evolution of the US economic situation.

Goodwill amortization in 2000 included a goodwill write-down of €58 million, primarily related to the impairment of goodwill associated with Onyx's U.K. operations. These operations consist of both dry and wet waste collection, landfill, and waste treatment facilities. The business is conducted with both industrial and municipal customers under short and long-term contracts. During 1999, operating results began to decline due to industry overcapacity and strong competitive pricing pressure. U.K. management began to respond to this situation by reducing costs. At the end of 1999, profitability had declined significantly but the U.K. company was still profitable at a level sufficient to recover the carrying value of its long-lived assets, including goodwill. However, operating results continued to decline during 2000 and it was recognized that additional action was required. U.K. management performed an analysis of the business and overall industry conditions. As a result of this review, several additional actions were taken in 2000. These actions included the closure of several treatment facilities, the termination of certain unprofitable long-term municipal contracts and further cost reductions. The actions were taken because the management believed that the prevailing industry conditions would continue for the foreseeable future. The management also revised the operating forecast to reflect the estimated effect of its actions and its view of long-term industry conditions. Based upon the resulting forecast of estimated undiscounted future cash flows, the management determined that the goodwill was impaired, and the goodwill was written down based upon an estimate of discounted future cash flow. The analysis was performed at the lowest level of identifiable assets. The analysis was based on the business plans over 20 years with a discount rate of 7% for the goodwill and the current market value for fixed assets (landfills, treatment plants and properties). Onyx's U.K. operations mainly relate to contracts that are highly predictable on a long-term basis.

The majority of the Group's €202.1 million in goodwill write-offs in 1999 were related to Aqua Alliance. Until 1998, the Group owned 82.95% of Aqua alliance, a U.S. company listed on the American Stock Exchange. Most of the goodwill related to the interest in Aqua Alliance was impaired in 1997 because, despite restructuring efforts and disposals of several business assets, the Group believed that the company would not generate sufficient cash flows to support its carrying value. As part of a reorganization plan for the company, the Group decided to merge this company with some of its other U.S. subsidiaries. In order to do so, it was required to buy out the minority interest. Additional goodwill resulted from this transaction. Management assessed the future cash flow prospects of the company, now a wholly owned subsidiary, and it was determined that the additional goodwill was impaired and should be reduced to a level that was supported by estimates of discounted future cash flows. The main assumptions used for the impairment analysis are (i) a discount rate of 10% and (ii) a cash flow analysis based on five year projections with a terminal value.

4. OTHER INTANGIBLE ASSETS

The evolution of net intangible assets as follows:

(€ millions)	1999	2000	Additions	Utilization	Change in scope	Other movements	2001
Fees paid to local authorities	508.4	517.1	34.0	(42.9)	30.0	29.4	567.6
Trademarks, market share and business assets acquired	2,360.4	2,619.6	69.0	(35.5)	38.1	231.4(1)	2,922.6
Software	55.8	59.5	16.0	(35.0)	3.6	25.3	69.4
Prepaid expenses	595.1	423.8	92.9	(38.0)	17.4	(26.2)	469.9
Other intangible assets	357.6	603.4	93.6	(27.9)	35.6	(257.2)(2)	447.5
Total	3,877.3	4,223.4	305.5	(179.3)	124.7	2.7	4,477.0

(1) Including translation adjustments for €144.5 million and a reclassification between other intangible assets and trademarks and market share for €86.9 million.

(2) Including the reclassification mentioned above, and (€172.7) million representing the definitive allocation of purchase price for companies acquired at the end of 2000 and corresponds to a reclassification between goodwill and other intangible assets.

Fees paid to local authorities relating to public service contracts, which are located primarily in France, amounted to €567.6 million in 2001, compared with €517.1 million in 2000. These are amortized over the term of the contracts to which they relate.

Trademarks, market share and business assets acquired amounted to €2,922.6 million in 2001, compared to €2,619.6 million in 2000, and €2,360.4 million in 1999. In particular, these assets include the allocation to the trademarks of part of the United States Filter Corporation purchase price of €2,469.3 million, and valuation of waste management operating rights for Superior Services, in an amount of €92.7 million. The carrying value of market share is reviewed for realization each year on the same basis of criteria used to assess its initial value, such as market position, net sales, and gross operating surplus or deficit. If the review indicates an other than temporary reduction in value, a valuation allowance is recorded. Trademarks and market shares are not amortized. Business assets acquired, such as customers lists and operating rights, are amortized over their estimated useful life.

Prepaid expenses include expenses of €469.9 million, €423.8 million and €595.1 million, as of December 31, 2001, 2000 and 1999, respectively, to be allocated over several financial years, mainly relating to the difference between the contractual amounts of debt servicing payments to local authorities and the expense charged to income over the contract period.

Certain subsidiaries of the Group may be obligated to assume responsibility for the repayment of the debt entered into by local authorities relating to the utility network they manage. The annual payments generally decrease each year and extend over a period shorter than the contract period. This difference between the amounts paid to the local authorities and the expense charged to income is recorded as a prepaid expense on the balance sheet.

Other intangible assets increased in 2000, particularly in the water segment (patents and licenses booked as assets by United States Filter Corporation).

Total amortization expense for other intangible assets for the years ended December 31, 2001, 2000 and 1999 was €184.2 million, €182.5 million and €134.3 million, respectively. Accumulated amortization amounted to €774.9 million, €609.8 million and €395.5 million, as of December 31, 2001, 2000 and 1999, respectively.

5. INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

	At December 31,								
	Interest			Proportionate share of equity			Proportionate share of net income		
(€ millions)	2001	2000	1999	2001	2000	1999	2001	2000	1999
Realia(1)	24.10%	23.31%	—	74.4	89.8	—	18.2	15.0	—
Philadelphia Suburban(2)(3)	16.88%	17.02%	15.87%	104.0	73.1	55.0	11.6	10.5	5.4
Domino	30.00%	30.00%	—	54.3	57.4	—	6.7	8.4	—
South Staffordshire(3)	31.74%	31.74%	32.71%	59.6	54.3	47.0	9.9	10.6	10.1
Grubar Hoteles	18.31%	18.31%	—	43.2	38.3	—	(0.2)	0.7	—
Bristol Waterworks Co(3)	24.14%	24.14%	24.14%	37.6	35.6	36.3	3.8	1.3	5.1
Midkent	—	23.75%	23.82%	—	28.9	27.2	—	4.3	6.1
Intan Utilities Berhad	30.00%	30.00%	30.00%	12.0	11.0	10.8	(10.7)	1.4	2.1
Acque Potabili	14.36%	20.52%	—	13.6	9.6	—	—	—	—
Venditelecom(5)	—	12.23%	—	—	7.6	—	—	—	—
Egyptian company for prestressed concrete	30.00%	30.00%	30.00%	5.6	6.7	6.2	1.2	2.2	2.7
Fovarosi Csatomazasi Muvek Resvonytarasag	25.03%	—	—	89.8	—	—	1.8	—	—
Other(4)	—	—	—	123.9	111.1	161.8	5.5	6.2	13.0
Total				**618.0**	**523.4**	**344.3**	**47.8**	**60.6**	**44.5**

(1) Realia (a subsidiary of FCC and Caja Madrid) has purchased the real estate assets of FCC Immobilaria SA.

(2) Vivendi Environnement is the largest shareholder in this company and has a significant level of influence over it through representation on its board of directors and other business relationships.

(3) The December 31, 2001 quoted market price for these investments, which are publicly listed, is as follows: Philadelphia Suburban: €294.8 million, South Staffordshire: €190.4 million, Bristol Waterworks Co: €37.2 million.

(4) Investments for which share in net shareholders' equity is less than €5 million.

(5) Venditelecom España is no longer accounting for using the equity method, and in 2001 is accounted for using the cost method.

The evolution in 2001 of equity investments is as follows:

(€ millions)	2001 Interest	2000	Change in scope	Net income	Distribution of dividends	Foreign exchange translation	2001
Realia	24.10%	89.8	(21.8)	18.2	(11.8)	—	74.4
Philadelphia Suburban	16.88%	73.1	22.0	11.6	(6.5)	3.8	104.0
Domino	30.00%	57.4	0.2	6.7	(3.0)	(7.0)	54.3
South Staffordshire Water	31.74%	54.3	—	9.9	(4.6)	—	59.6
Grubar Hoteles	18.31%	38.3	5.1	(0.2)	—	—	43.2
Bristol Water	24.14%	35.6	0.1	3.8	(1.9)	—	37.6
Midkent		28.9	(28.9)	—	—	—	—
Intan Utilities Berhad	30.00%	11.0	12.6	(10.7)	(0.9)	—	12.0
Acque Potabili	14.36%	9.6	4.1	—	(0.1)	—	13.6
Venditelecom		7.6	(7.6)	—	—	—	—
Egyptian company for prestressed concrete	30.00%	6.7	0.7	1.2	(1.6)	(1.4)	5.6
Fovarosi Csatomazasi Muvek Reszvonytarsasag	25.03%	—	83.4	1.8	—	4.6	89.8
Other		111.1	8.6	5.5	(2.5)	1.2	123.9
Total		**523.4**	**78.5**	**47.8**	**(32.9)**	**1.2**	**618.0**

Dividends received from equity affiliates amount to €32.9 million in 2001, €30.1 million in 2000, and €19.9 million in 1999.

Summarized financial information for the equity method investees is as follows:

(€ millions)	At December 31,		
Balance sheet data	**2001**	**2000**	**1999**
Long term assets	2,470.6	2,553.2	1,846.8
Current assets	474.8	854.5	165.5
Total assets	2,945.4	3,407.7	2,012.3
Shareholders' equity	1,033.4	1,256.2	744.5
Minority interests	33.2	92.3	21.9
Financial debt	740.6	989.4	441.1
Other liabilities and reserves	1,138.2	1,069.8	804.8
Total liabilities and shareholders' equity	2,945.4	3,407.7	2,012.3
Income statement data			
Net revenue	938.5	1,087.2	607.3
Operating income	291.9	213.3	201.8
Net income	138.7	158.5	109.5

6. PROPERTY, PLANT AND EQUIPMENT

Evolution of property, plant and equipment:

	December 31,						
(€ millions)	1999	2000	Change in scope	Additions and amortizations charged to operating income	Utilization	Other movements	Total
Property, plant and equipment	12,374.9	14,275.8	854.3	2,052.2	(510.7)	171.8	16,843.4
Publicly-owned utility networks	3,960.6	5,619.2	65.8	310.5	(59.6)	220.8	6,156.7
Total	16,335.5	19,895.0	920.1	2,362.7	(570.3)	392.6	23,000.1
Property, plant and equipment	(4,944.8)	(5,756.4)	(354.5)	(1,176.1)	336.6	52.4	(6,898.0)
Publicly-owned utility networks	(225.7)	(1,755.8)	5.2	(146.7)	53.1	(66.6)	(1,910.8)
Depreciation	(5,170.5)	(7,512.2)	(349.3)	(1,322.8)	389.7	(14.2)	(8,808.8)
Total	11,165.0	12,382.8	570.8	1,039.9	(180.6)	378.4	14,191.3

Publicly-owned utility networks are assets financed by the Group as part of their management of public service contracts, and will be returned to the local authority at the end of the contract.

The increase in total property, plant and equipment is due principally to changes in scope of the consolidation, notably the entry of Marius Pedersen for €91 million, the service sector of EDF for €122.4 million and BBA (Connex) for €73 million. Other movements include the effects of foreign currency translation adjustments for €155.5 million, and the affectation of goodwill for €174.2 million.

Property, plant and equipment by segment are detailed as follows:

	At December 31,					
	2001				2000	1999
(€ millions)	Property, Plant and equipment	Publicly-owned utility networks	Accumulated depreciation/ amortization	Net tangible assets	Net tangible assets	Net tangible assets
Water	5,860	5,060	(3,790)	7,130	6,458	5,985
Waste Management	5,820	36	(2,551)	3,305	2,734	2,230
Energy Services	1,991	672	(938)	1,725	1,503	1,337
Transportation	1,962	264	(905)	1,321	1,093	968
FCC	1,210	125	(625)	710	595	645
Total	16,843	6,157	(8,809)	14,191	12,383	11,165

The detail of net property, plant and equipment is as follows:

(€ millions)	At December 31, 2001	2000	1999
Land	1,428	1,199	963
Buildings	2,594	1,967	1,906
Technical systems	8,937	6,720	5,801
Assets under construction	571	482	324
Other	3,313	3,908	3,381
Property, plant and equipment	16,843	14,276	12,375
Publicly owned utility networks	6,157	5,619	3,961
Depreciation	(8,809)	(7,512)	(5,171)
Total	14,191	12,383	11,165

Tangible assets financed under capital lease, amounts to €1,039.3 million, €784.0 million and €674.4 million at December 31, 2001, 2000 and 1999, respectively. Accumulated amortization related to these assets financed under capital lease was €388.6 million, €342.7 million and €296.4 million at December 31, 2001, 2000 and 1999, respectively.

As of December 31, 2001 and 2000, property, plant and equipment were pledged as collateral for borrowings from banks (see note 14).

Depreciation expense for the years ended December 31, 2001, 2000 and 1999 was €1,322.8 million, €1,151.2 million and €826.7 million, respectively.

7. FINANCIAL ASSETS AND FINANCIAL PROVISIONS

Investments accounted for using the cost method

Investments accounted for using the cost method are detailed as follows:

	At December 31,				
	2001			2000	1999
(€ millions)	Gross	Allowance	Net	Net	Net
Domino					59.3
Csatorna Uzemeltetesi Holding Reszvenyta					40.0
Favarosi Csatomazasi Muvek Reszvenytarsasag(1)				76.2	37.8
Mittledeutsche Wasserversorgungsgeselt					34.2
Norsk Gjenvinning					29.2
Rhodia Eco Services(2)				11.7	
CGEA Brasil					23.7
Aguas de Argentina					14.6
Other(3)(4)	285.9	(40.1)	245.8	156.2	111.1
Total	285.9	(40.1)	245.8	244.1	349.9

(1) Accounted for under equity method in 2001.

(2) This company, which is jointly owned by Rhodia, was set up towards the end of 2000 and is consolidated as of January 1, 2001.

(3) No unit book value is over €10 million for 2000

(4) Allowances expensed amount to €9.1 million in 2001.

Other portfolio investments held as financial assets can be analyzed as follows:

	At December 31,		
(€ millions)	2001	2000	1999
Long-term loans(1)	349.5	284.6	261.2
Other(2)	739.2	662.9	494.6
Impairment(3)	(15.9)	(15.5)	(13.3)
Net value	1,072.8	932.0	742.5

(1) Of which €51.1 million in waste management (primarily €14.0 million in long-term loans pertaining to the U.S. activities) and €180.8 million in water (of which €97.3 million is in long-term loans of CGE Deutschland).

(2) Of which €127.8 million in assets covering pension liabilities in the U.K. and the U.S. (water) and €91.0 million corresponding to the redemption premium of our convertible bonds (see Note 14(a)) at December 31, 2001 and €96.0 million corresponding to subordinated borrowings assumed by Vivendi Environnement as part its securitization of accounts receivable (see note 9. Accounts receivable).

(3) Of which €7.7 million is for long-term loans (€5.1 million in 2000). Depreciation expenses on investments held as fixed assets was €6.6 million for 2001.

The financial provisions primarily include the following items:

- The additional amortization of facilities when the related operating contract's term is shorter than the economic useful life of the assets (refer to accounting principles described in Note 2 to the Consolidated Financial Statements) recorded such that the accounting value of the facility would be zero at the end of the contract. This item amounted to €15.4 million in 2001, €17.8 million in 2000 and €8.8 million 1999.

- Amortization of the redemption premium of our convertible bonds (see Note 14(a)).

8. INVENTORIES AND WORK IN PROGRESS, NET

Inventories and work in progress, net are detailed as follows:

	At December 31,		
(€ millions)	**2001**	**2000**	**1999**
Water(1)	1,088.4	981.2	1,044.2
Waste Management	112.2	119.1	104.6
Energy Services	233.2	282.9	208.5
Transportation	31.2	27.5	26.4
FCC(2)	175.7	167.3	230.3
Total	1,640.7	1,578.0	1,614.0
Less valuation allowance(3)	(97.0)	(94.6)	(111.3)
Net value	1,543.7	1,483.4	1,502.7

(1) In 2001 the increase in the water sector is explained by an increase in the work in progress at US Filter (€81.2 million).

(2) The decrease in 2000 in FCC is due principally to the transfer of €40 million of real estate work in progress by FCC to the company Realia, which since 2000 is accounted for using the equity method.

(3) Allowances expensed for 2001 are €3.4 million.

9. ACCOUNTS RECEIVABLE, NET

Accounts receivable, net are detailed as follows:

	At December 31,		
(€ millions)	**2001**	**2000**	**1999**
Trade accounts receivable	8,623.0	9,041.1	8,513.1
Valuation allowance	(472.7)	(435.8)	(431.3)
Total trade accounts receivable	8,150.3	8,605.3	8,081.8
VAT and other taxes	2,904.7	1,257.3	1,288.1
Other including deferred tax	1,011.0	865.3	699.2
Total accounts receivable, net	12,066.0	10,727.9	10,069.1

The majority of trade receivables are due in less than one year.

Securitization in France

According to the securitization agreement signed in December 2001 with a SPE (Special Purpose Entity), the Group securitized through its water segment accounts receivable for a total of €752 million. The securitized receivables are the assets of the SPE. The SPE is financed by senior borrowings assumed by banks and by retained interests of €96 million assumed by Vivendi Environnement. Reimbursements of the retained interests will occur only after complete reimbursement of the senior borrowings.

According to the securitization agreement, the subsidiaries are responsible for collecting the receivables. The Group provides guarantees on the performance of its subsidiaries in recovering these amounts.

Securitization in the USA

In December 2001, US Filter securitized receivables for a total of $155 million.

The securitization consisted of sales of receivables to a fully controlled unit, which then sold a portion of these receivables to a SPE. The SPE issued commercial papers bearing interest. According to the Agreement, US Filter is responsible for collecting the receivables. Vivendi Water has guaranteed the performance of US Filter in recovering amounts due.

For all securitizations realized in 2001, the discount on bad debts is included in operating income and the starting fees are included in financial expenses.

Discounting of receivables

The Group has discounted €520 million of receivables.

The allowances for doubtful accounts for the years ended December 31, 2001, 2000 and 1999 are as follows:

	At December 31,		
(€ millions)	**2001**	**2000**	**1999**
Balance at beginning of period	(435.8)	(431.3)	(283.4)
Amounts charged to expense	(141.4)	(83.6)	(94.2)
Deductions of reserve	117.8	51.0	64.6
Other adjustments*	(13.3)	28.1	(118.3)
Balance at end of period	(472.7)	(435.8)	(431.3)

* Other adjustments reflect changes in the scope of consolidation, translation adjustments and reversals (€10 million).

10. CASH, CASH EQUIVALENTS AND MARKETABLE SECURITIES

Marketable Securities

	At December 31,										
	2001				2000				1999			
	Cost	Gross unrealized		Estimated fair value	Cost	Gross unrealized		Estimated fair value	Cost	Gross unrealized		Estimated fair value
(€ millions)		gains	losses			gains	losses			gains	losses	
Vinci	37.9	64.4	—	102.3	37.8	63.9	—	101.7	37.8	34.3	—	72.1
Vivendi Environnement	159.2	—	—	159.2	44.3	—	—	44.3	—	—	—	—
Others(a)	119.1	—	—	119.1	405.4	—	—	405.4	383.9	—	—	383.9
Vivendi Universal	7.9	11.1	—	19.0	9.1	17.8	—	26.9	9.7	29.6	—	39.3
Total	324.1	75.5	—	399.6	496.6	81.7	—	578.3	431.4	63.9	—	495.3

(a) This amount includes mainly short term highly liquid investments with fair value equal to cost value.

Vivendi Environnement shares have been acquired to cover stock options (770,000 shares) for a total of €26.5 million. The exercise price of these options is €32.5, which represents a potential loss of €1.5 million as of December 31, 2001, this loss has not been included in net income. The rest of the Group's share have been acquired to stabilize the market price (3,528,174 shares) for a total of €132.7 million, and conforms to the authorization given by the general assembly and are reported at their market value as of December 31, 2001.

Cash and cash equivalents amount to €2,089.3 million, consisting of cash for €1,401.8 million and short term investments for €687.5 million (maturity of less than three months).

11. SHAREHOLDERS' EQUITY

In 2000, the Group issued 75,005,023 new shares for €2,408.7 million in a global offering and 52,941,425 new shares with a carrying value of €1,396.6 million on conversion of its convertible bonds, with a total value of €3,805.3 million. Prior to the global offering the total number of shares outstanding was 218,228,507 ordinary shares with a nominal value of €13.50 per share.

In December 2001, the Group issued a total of 346,174,955 warrants. These warrants give the holder the right to convert seven warrants into one common share at an exercise price of €55.0 per share. In 2001, a total of 5,419 warrants were converted, resulting in the issuance of 817 new shares.

The Group's consolidated and unconsolidated subsidiaries have certain restrictions on the distribution of net equity. These restrictions mainly concern French companies where, pursuant to French law, they are legally required to reserve a minimum of 5% of its annual net income within the retained earnings account. This minimum contribution is not required once the reserve equals 10% of the aggregate nominal share capital. The legal reserve is distributable only upon liquidation.

The share capital of the Group consisted of 346,175,772 shares at December 31, 2001. All shares have one voting right and may be registered upon request by the owners.

12. MINORITY INTERESTS

Minority interests are detailed as follows (in millions of euros):

	2001	2000	1999
Minority interests at January 1,	2,031.1	1,438.1	617.3
Changes in consolidation	139.0	472.7	740.3
TSAR(1)	300.0		
Minority interests in income of consolidated subsidiaries	131.2	161.4	50.5
Dividends paid by consolidated subsidiaries	(76.4)	(46.5)	(33.9)
Impact of foreign currency fluctuations in minority interests	5.4	5.7	27.0
Other Changes	0.8	(0.3)	36.9
Minority interests at December 31,	2,531.1	2,031.1	1,438.1

(1) TSAR -VEFO (Vivendi Environnement Financière de l'Ouest, a company fully controlled by Vivendi Environnement SA) issued in December 2001, €300 million of company obligated manditorily redeemable securities maturing on December 28, 2006. As a result of their profile, these securities are accounted for as a minority interest. The remuneration of these securities is included in the minority interest table above. VEFO holds 8% of CGEA Onyx's capital.

In 2000, the year-end disposal of 26.67% of capital of CGC Holding to EDF led to an increase in minority interests of €435.1 million.

Changes in the scope of consolidation for 1999 were attributable to the acquisition of Berliner Wasser Betriebe (for €545.8 million) whose consolidated financial statements reflect the minority interests.

13. DEFERRED INCOME

Deferred income includes €585.0 million in investment subsidies received in connection with the management of municipal outsourcing contracts and €859.3 million in payments in respect of income from the securitization of future receivables. To finance most of its cogeneration plants, Dalkia has sold in advance the proceeds from the sale of electricity that EDF has pledged to acquire under long-term contracts. Since January 1, 1998, the proceeds have been amortized on an actuarial basis over the duration of these loans, which ranges between 5 and 12 years.

14. DEBT

The table below presents an analysis of the consolidated long-term debt balance by type of debt instrument (in millions of euros):

	At December 31,		
	2001	2000	1999
Vivendi Environnement 1.5% bonds(a)	1,535.6	1,535.4	3,028.8
HSBC-CCF bond(b)	249.7	250.0	—
EMTN(c)	2,806.7	—	—
Subordinated debt(d)	108.7	122.1	149.4
Vinci convertible bond(e)	120.0	—	—
Deutsche Bank borrowing(f)	590.0	1,800.0	—
Société Générale borrowing(g)	2,076.5	2,164.7	—
Berliner Wasser Betriebe(h)	1,987.8	1,822.0	1,848.6
Superior Services(i)	416.4	418.8	—
Montgomery(j)	121.5	115.0	106.5
Tyseley(k)	121.1	131.7	137.0
Sarp(l)	82.2	101.6	—
Capital leases(m)	602.4	476.4	907.8
Bonds, Bank Loans(n)	2,315.4	2,531.0	2,371.3
Current account with Vivendi Universal	—	—	10,280.0
Total	13,134.0	11,468.7	18,829.4

(a) In April 1999, Vivendi Environnement issued bonds that bear interest at 1.5%, which mature on January 1, 2005, and that were convertible, at the option of the bondholder, into Vivendi Universal shares at the conversion rate of 1 bond to 3.047 shares.

These bonds could also be converted into shares of Vivendi Environnement at a predetermined conversion rate if there was an initial offering of Vivendi Environnement shares. In July 2000, as a consequence of the initial offering of Vivendi Environnement's shares, certain bondholders chose to convert their bonds into shares of Vivendi Environnement. Out of a total of 10,516,606 bonds, 5,183,704 bonds were converted for a total of 52,941,425 shares, representing a total of value of €1,396.6 million (split between nominal value and additional paid-in capital). As of December 31, 2001 the number of bonds in circulation was 5,331,126, which are convertible into Vivendi Universal shares. The liability recorded for these bonds includes a premium of €91 million, the counterpart is recorded against other long-term investments and is not amortized given the small probability of reimbursement of the bonds on December 31, 2001 (see Note 7 Financial assets and Financial provisions). Taking into account that, according to financial agreements with Vivendi Universal, that we may exercise our option to redeem the convertible bonds after January 1, 2002 only with Vivendi Universal's consent, and that in some circumstances, Vivendi Universal could also require us to exercise our option to redeem the convertible bonds prior to maturity, Vivendi Environnement may amortize the premium from 2002.

(b) On December 15, 2000, Vivendi Environnement issued a €250 million bond for general financing purposes. This bond matures on December 15, 2002 and bears interest indexed on EONIA. Redemption will occur at maturity.

(c) EMTN mainly consists of: €2,000 million which matures on June 27, 2008 and bears interest indexed to EURIBOR 3 months; €500 million that matures in November 2005 and bears interest at 4.87% ; and €250 million which matures in February 2003 and bear interest indexed to EURIBOR 3 months. Redemption will occur at maturity.

(d) Subordinated debt consists primarily of a loan of €244 million to finance the wastewater treatment plant in Zaragoza, Spain, underwritten by OTV on December 27, 1991 and repayable over 15 years.

(e) Vivendi Environnement borrowed from Vivendi Universal €120 million, which matures on March 1, 2006, and bears interest of 1%. This debt, was not the subject of a premium.

This debt relates to the 1,522,305 shares of Vinci held by the Group and has similar characteristics to those issued in the prospectus by Vivendi Universal for the Vinci bonds exchangeable for Vinci shares which was issued on February 27, 2001:

- Number of bonds issued by Vivendi Universal: 6,818,695.
- Face value of €88.81 per bond.
- Conditions for exchange: 1 Vinci share for 1 bond.
- Repayment:
  - At the initiative of the issues from March 1, 2003 under certain conditions.
  - At the initiative of the bondholder from April 1, 2004.
- Conversion
  - At the initiative of the bondholder, from April 1, 2001 until March 1, 2006.

- It is the interest of the bondholder to convert when the market price of Vinci is above €88.81. The market price of Vinci was €65.85 as of December 31, 2001.
- The average price of Vinci shares acquired by Vivendi Environnement is €24.4.

Redemption will occur at maturity unless converted.

(f) On March 13, 2001, Vivendi Environnement issued a €3,000 million syndicated loan. As of December 31, 2001 the amount that has been drawn on is composed of a long-term debt of €590 million which matures on March 13, 2006 and which is indexed to LIBOR 6 months and a short-term debt of €737.5 million which matures on March 12, 2002.

The debt contains an accelerated redemption clause in the case of breaking the following financial ratios, otherwise redemption will occur at maturity:

- Interest cover ratio (EBITDA/net interest expense):

  > 4.00 to 1 in 2001, 4.5 to 1 in 2002, and 5.00 to 1 from 2003 onwards.
- Debt ratio (Net financial debt/EBITDA):

  < 4.25 to 1 in 2001, 4.00 to 1 in 2002, and 3.75 to 1 in 2003 and 3.50 to 1 from 2004 onwards.

(g) Syndicated credit maturing on November 3, 2004. This credit bears interest based on a rate indexed to LIBOR USD 3 months.

The debt contains an accelerated redemption clause in the case of breaking the following financial ratios; otherwise redemption will occur at maturity.

- Interest cover ratio (EBITDA/net interest expense):

  > 4.00 to 1 in 2001, 4.5 to 1 in 2002, and 5.00 to 1 in 2003.
- Debt ratio (Net financial debt/EBITDA):

  < 4.25 to 1 in 2001, 4.00 to 1 in 2002, and 3.75 to 1 in 2003.

(h) Berliner Wasser Betriebe debt as of December 31, 2001 consists of two lines: the acquired debt of €800 million which matures in 2004 and is indexed to EURIBOR 3 months, and additional debt of €1,187,8 million which matures in 2007 and which pays a 5.29% fixed rate.

The €800 million debt is made up of two lines, a €600 million syndicated debt and a €200 million debt. These debts contain accelerated redemption clauses in the case of breaking the following financial ratios and trigger events.

- Interest cover ratio (EBITDA/net interest expense):

  > 4.00 to 1 in 2001, 4.5 to 1 in 2002, and 5.00 to 1 in 2003.
- Debt ratio (Net financial debt/EBITDA):

  < 4.25 to 1 in 2001, 4.00 to 1 in 2002, and 3.75 to 1 in 2003.

  Repayment in the event that Vivendi Environnement's credit rating falls below either BBB+ or Baa2.

(i) This credit facility of Superior Services allows borrowings, up to $650 million. Only €416.4 million have been used as of December 31, 2001 maturing on August 18, 2005. The paid rate is indexed on LIBOR USD 3 months.

The debt contains an accelerated redemption clause in the case of breaking the following financial ratios at the Superior Services level:

- Leverage ratio: 3.00 to 1.0.
- Interest cover ratio (EBITDA/total interest expense): > 3.00 to 1.
- Debt to shareholders' equity ratio: < 50 %
- Capital expenditure (capital expenditure/depreciation expense): < 1.75.

Redemption will occur at maturity.

(j) This bond financed the Montgomery plant, bears interest at a 7.5% fixed rate and mature on January 1, 2012.

(k) This bond is financing the Tyseley project, bears interest at a 6.675% rate and matures on July 30, 2018. The principal is amortized over the entire life of the bond.

(l) This debt of Sarp is mainly composed of 4 lines with maturities between 2003 and 2007, bears interest at rates indexed to EURIBOR. These lines are amortized over their entire lives.

(m) As of December 31, 2001, capital leases mature between 2003 and 2021 and bear fixed interest rate between 5.12% and 14.5% and variable interest rate indexed mainly on EONIA, T4M and TAM.

(n) Other bonds and banks loans mature between 2003 and 2024 and are indexed on fixed-interest rates between 2.0% and 12.9% and on various variable-interest rates, mainly EURIBOR.

Long-term debt listed according to the currency in which it is denominated is as follows (in million of euros):

	At December 31,		
	2001	2000	1999
Euros	8,331.9	10,258.5	18,050.1
U.S. Dollar	3,618.5	685.8	259.8
Pound Sterling	281.0	180.0	232.5
Australian Dollar	138.0	83.1	93.0
Korean Won	203.8	86.9	—
Norwegian Crown	80.0	—	—
Other	480.8	174.4	194.0
Total	13,134.0	11,468.7	18,829.4

The table below presents a summary of the repayment schedules of the long-term debt excluding subordinated securities (in million of euros):

	At December 31,		
	2001	2000	1999
Due between one and two years	1,227.4	2,527.9	11,059.6
Due between two and five years	7,461.8	6,449.2	2,507.0
Due after five years	4,444.8	2,491.6	5,262.8
Total	13,134.0	11,468.7	18,829.4

At the end of 2001, €752.3 million in bank borrowings was supported by collateral guarantees. These guarantees are mainly related to the water segment (€214.3 million for General Utilities, €81.1 million for the water treatment plants of Wyuna Water in Australia, €70 million for Schwarzepumpe and €127.3 million for Vivendi Water Industrial Development) and the waste management segment (€231.4 million mainly for Norsk Gjenvinning in Scandinavia).

The main unused credit lines amounted to €2,889 million at December 31, 2001 of which €1,809 million are long-term credit lines maturing between 2004 and 2006.

The main unused credit line amounted as of December 31, 1999, to €150 million of long-term credit line and, as of December 31, 2000, to €1,479.7 million including a €1,200 million short-term unused credit facility backing the commercial paper issued between October 17, 2000 and December 15, 2000. This unused credit facility can be decomposed into 4 lines indexed on EONIA and EURIBOR, with spread indexed on the credit rating of Vivendi Environnement (given by Standard & Poor's or Moody's) or the use ratio.

The table below summarizes Vivendi Environnement's short-term borrowings (all amounts are in millions of euros):

	At December 31,		
	2001	2000	1999
Bank overdrafts and other short-term borrowings	4,889.5	4,243.6	5,969.8
Average rate	3.10%	5.46%	3.57%

The Group's main short term borrowings as of December 31, 2001 are detailed below:

- Syndicated Credit facility amounting to $650 million, with an interest rate of LIBOR USD 3 months, maturing on March 12, 2002.

- Commercial paper program amounting to €2,005 million, interest rates are based on EONIA or fixed rates, with maturities between 30 to 180 days.

The Group's main short term borrowings as of December 31, 2000 are detailed below:

- Syndicated credit facility amounting to €600 million, with an interest rate of EURIBOR 4 months rate, with a maturity on March 19, 2001.
- Current account with Vivendi Universal amounting to a net value of €1,175 million. Vivendi Environnement pays 5.70% fixed-rate to Vivendi Universal.
- Commercial paper program amounting to €686.2 million, bearing interests at EONIA plus a spread, with a maturity between 30 and 180 days.

The Group's main short term borrowings as of December 31, 1999 are detailed below:

- Short term current account between Vivendi (now Vivendi Universal) and Vivendi Environnement, amounting to €649 million, paying a T4M rate (mobile average rate computed monthly on the EONIA basis).
- Short term current accounts between CGEA–a Vivendi Environnement subsidiary–and Vivendi (now Vivendi Universal), amounting to €1,693 million on both USD and EUR currencies, paying rates indexed on LIBOR USD 6 months and T4M respectively.

15. RESERVES AND ALLOWANCES

Reserves and allowances are detailed as follows (in millions of euros):

	At December 31,		
	2001	2000	1999
Litigation including social and tax	246.0	342.0	415.9
Financial depreciation*	627.8	532.5	486.3
Maintenance and repair costs accrued in advance	322.6	361.5	405.8
Reserves related to fixed assets	128.7	173.1	128.5
Valuation allowance on work in progress	370.3	236.0	181.5
Closure and post closure costs**	362.0	354.7	246.6
Pensions	215.0	167.7	166.1
Restructuring costs	172.9	183.0	193.2
Losses on investment in unconsolidated companies	221.8	122.0	90.5
Warranties and customer care	235.3	180.5	157.4
Others***	293.3	432.4	217.0
Total reserves and allowances	3,195.7	3,085.4	2,688.8

* Financial depreciation of fixed assets relating to public-service contracts.

** Reserves for closure and post-closure costs include:

(a) accruals for landfill closure and post-closure costs for €321.1 million, €256.1 million and €192.1 million during the years ending December 31, 2001, 2000 and 1999, respectively. As of December 31, 2000, the total anticipated costs, undiscounted, totaled approximately €578 million. These anticipated costs have not been actualized : the effects of which were considered non-significant.

(b) other closure reserves relating to plant dismantling and site remediation in the water and the waste businesses for €40.9 million, €98.6 million and €54.5 million during the years ending December 31, 2001, 2000 and 1999, respectively.

The increase of €108.1 million in closure and post-closure reserves in 2000 includes principally landfill closure and post-closure liabilities assumed for newly acquired disposal sites, landfill accruals due to the use of the existing facilities during the year and identified remediation obligations of the water business.

*** Other reserves and allowances include those associated with a wide range of components recorded at subsidiary level. Their increase between 1999 and 2000 is mainly due to increases in various contingencies recognized in connection with purchase business combinations of €150 million.

The developments in the reserve for restructuring costs for the years ended December 31, 2001, 2000 and 1999 are as follows (in millions of euros):

	At December 31,		
	2001	2000	1999
Balance at beginning of period	183.0	193.2	38.3
Amount charged to expenses	83.1	49.5	30.8
Utilization (cash)	(128.6)	(60.1)	(51.7)
Other adjustments*	35.4	0.4	175.8
Balance at the end of period	172.9	183.0	193.2

* Reflects primarily changes in the scope of consolidation.

16. ACCOUNTS PAYABLE

Accounts payable are detailed as follows (in millions of euros):

	At December 31,		
	2001	2000	1999
Trade accounts payable	6,438.7	7,166.7	6,866.8
Social costs payable	5,716.7	2,990.4	2,663.3
Other	783.9	697.3	474.5
Total accounts payable	12,939.3	10,854.4	10,004.6

17. INCOME TAXES

Analysis of Income Tax Expense

Components of the income tax provision are as follows (in millions of euros):

	At December 31,		
	2001	2000	1999
France	(128.5)	(341.0)	(163.4)
Other countries	(256.3)	(125.1)	(110.5)
Current income tax expense	(384.8)	(466.1)	(273.9)
France	9.6	12.3	3.9
Other countries	(87.1)	(5.4)	(28.5)
Deferred income tax (benefit)	(77.5)	6.9	(24.6)
Total income tax expense	(462.3)	(459.2)	(298.5)

In 2001, a French Tax Group was created. Vivendi Environnement SA paid the Group tax to the French tax authority. The tax saving is recorded at the Vivendi Environnement SA level.

Deferred Tax Assets and Liabilities

The timing differences which give rise to significant deferred tax assets and liabilities are as follows (in millions of euros):

	At December 31,		
	2001	2000	1999
Deferred tax assets:			
– Employee benefits	53.2	47.6	47.7
– Provisions for risks and liabilities	19.9	6.7	28.3
– Tax loss	593.9	679.4	199.2
Other timing differences	451.0	226.7	470.1
Gross deferred tax assets	1,118.0	960.4	745.3
Unrecorded deferred tax assets(1)	(107.0)	(95.9)	(118.6)
Deferred tax assets recorded in the books	1,011.0	864.5	626.7
Deferred tax liabilities:			
– Depreciation	207.6	264.0	231.8
– Reevaluation of assets	151.2	69.7	81.3
– Other taxable timing differences	403.7	363.8	161.2
Gross deferred tax liabilities	762.5	697.5	474.3

(1) Represents tax savings from operating losses or other non-activated tax savings. They have not been recorded as assets because their recovery is not probable.

Deferred tax assets and liabilities have not been discounted: the effects of which were considered non-significant.

A goodwill item recorded as an asset in 1999 and 2000 for a total of €122 million was reclassified in 2001 as a deferred tax asset. This goodwill item related to Aqua Alliance is justified by operating loss carry forwards, which could be used with the acquisition of US Filter. The reorganisation of Vivendi Water in the US, and the review of their assets lead to the reclassification of this goodwill.

Tax Rate Reconciliation

A reconciliation of the French statutory tax rate to the Group's effective tax rate is as follows:

	At December 31,		
	2001	2000	1999
Statutory tax rate	36.43%	37.77%	40.00%
Goodwill amortization not deductible for tax purposes	(61.30)%	9.36%	41.94%
Permanent differences	(2.07)%	(8.73)%	5.29%
Lower tax rate on long-term capital gains and losses	1.76%	(4.78)%	(0.49)%
Tax losses	(4.42)%	11.19)%	(4.89)%
Other, net	1.71%	(7.64)%	3.48%
Effective tax rate(a)	(27.89)%	37.17%	85.33%

(a) The effective tax rate is computed by dividing "income taxes and deferred taxes" by "Income before taxes and deferred taxes."

Net Operating Tax Loss

At December 31, 2001, the Group had tax losses which represent a potential tax saving of €593.9 million (based on the effective tax rate).

Tax losses expire as follows (in millions of euros):

Years	Amount
2002	22.5
2003	15.6
2004	12.3
2005	132.4
2006	9.2
2007 and thereafter	401.9
Total	593.9

18. FINANCIAL INSTRUMENTS AND COUNTERPARTY RISKS

The Group uses various financial derivative instruments to manage its exposure to fluctuations in interest rates and foreign currency rates.

The Group does not anticipate any third-party defaults, which could have a significant impact on its financial position and the results of its transactions.

Interest rate and foreign currency agreements

The contractual amounts stated below are outstanding as of December 31, 2001, 2000 and 1999. These amounts represent the levels of involvement by the Group and are not indicative of gains or losses. The amounts are in million of euros.

	As of December 31, 2001			
	Total	1 year	1-5 years	5 and + years
Interest rate hedging activity				
Interest Rate Swaps–pay at fixed rate				
Notional amount	4,721.2	1,157.4	3,557.3	6.5
Average received rate	3.17%			
Average paid rate	4.94%			
Interest Rate Swaps–pay at variable rate				
Notional amount	2,449.1	15.2	426.3	2,007.6
Average received rate	5.67%			
Average paid rate	3.31%			
Swap–cross currency				
Notional amount	262.7	—	262.7	—
Average received rate	4.07%			
Average paid rate	3.42%			
Interest Cap, floors and collars				
Notional amount	174.8	—	152.4	22.4
Guarantee rate	4.69%			
Foreign currency hedging activity				
Forward exchange contract				
Notional amount	186.8	186.8	—	—

	As of December 31, 2000			
	Total	1 year	1-5 years	5 and + years
Interest rate hedging activity				
Interest Rate Swaps–pay at fixed rate				
Notional amount	2,793.5	8.9	2,778.1	6.5
Average received rate	5.16%			
Average paid rate	5.22%			
Interest Rate Swaps–pay at variable rate				
Notional amount	289.1	61.0	217.7	10.4
Average received rate	5.86%			
Average paid rate	4.76%			
Swap–cross currency				
Notional amount	256.5	—	256.5	—
Average received rate	4.04%			
Average paid rate	4.90%			
Interest Cap, floors and collars				
Notional amount	188.1	10.4	155.3	22.4
Guarantee rate	4.68%			
Foreign currency hedging activity				
Forward exchange contract				
Notional amount	22.9	—	22.9	—

	As of December 31, 1999			
	Total	1 year	1-5 years	5 and + years
Interest rate hedging activity				
Interest rate swaps–pay at fixed rate				
Notional amount	57.6	42.1	7.6	7.9
Average received rate	5.41%			
Average paid rate	7.95%			
Interest rate swaps–pay at variable rate				
Notional amount	192.6	15.3	113.6	63.7
Average received rate	4.46%			
Average paid rate	3.27%			
Swap–cross currency				
Notional amount	172.6	—	172.6	—
Average received rate	3.34%			
Average paid rate	2.29%			
Interest Cap, floors and collars				
Notional amount	188.1	10.3	155.4	22.4
Guarantee rate	4.63%			

19. FAIR VALUE OF FINANCIAL INSTRUMENTS

At December 31, 2001 and 2000 Vivendi Environnement used for financing purposes cash, cash equivalents, notes receivables, loans and advances, bonds and bank overdrafts, as well as derivative financial instruments used to manage interest rate risk, foreign currency risk and equity risk.

The carrying value of cash equivalents ; short-term receivables, short-term borrowings and the short-term part of long -term debt was approximately equal to the fair value due to their short maturities. The fair value of financial instruments detailed as follows, is generally determined using quoted prices. When no quoted prices are available, fair value is based on estimates using discounted future cash flows or other estimates.

(€ million)	At December 31, 2001 Carrying amount	2001 Estimated fair value	2000 Carrying amount	2000 Estimated fair value	1999 Carrying amount	1999 Estimated fair value
Investments*	1,598.6	1,674.1	1,646.2	1,734.8	1,523.8	1,600.7
Long-term debt	13,134.0	13,265.0	11,468.7	11,680.0	18,829.4	19,424.6
Treasury management						
Interest rate swaps	—	(25.7)	—	(21.4)	—	2.2
Cross Currency interest rate swaps	—	(4.1)	—	2.2	—	(2.2)
Forward exchange contracts	—	3.6	—	0.8	—	—
Interest caps, floors and collars	—	0.4	—	4.0	—	5.8

* Excluding treasury shares held for stock option purposes.

Financial instruments including cash and cash equivalents, accounts receivables, short term loans, accounts payable and bank overdrafts and short term borrowings are excluded from the above table. For these instruments, fair value was estimated to be the carrying amount due to the short maturity.

20. COMMITMENTS AND CONTINGENCIES

Commitments and Contingent Liabilities

The Group's contingent liabilities relating to certain performance guarantees by segments are as follows (in millions of euros):

	At December 31, 2001	2000	1999
Water	1,005.0	571.7	755.8
Waste Management	302.8	617.3	561.0
Energy Services	242.0	101.8	66.6
Transportation	229.5	31.5	49.9
FCC/Proactiva	687.5	579.8	501.1
Holding	641.0	95.4	—
Others	8.2	—	—
Total	3,116.0	1,997.5	1,934.4

The contingent liabilities of the water segment consist of €810 million of performance guarantees given by subsidiaries as part of these normal activities. In addition, US Filter Corporation has given financial guarantees for projects undertaken with its industrial customers (€195 million). These two elements make-up the majority of the increase in guarantees given in 2001.

The contingent liabilities of FCC and Proactiva consist primarily of guarantees to local authorities for construction and environmental services.

The contingent liabilities of Vivendi Environnement consist primarily of € 404 million of performance guarantees on behalf of its subsidiaries as part of their normal activities, either directly to clients, or to financial institutions as counter guaranties.

Specific Commitments

As described in note 2, under certain public service contracts, the Group has assumed fees obligations with local authorities. At December 31, 2001, the minimum future payments of these commitments is €222.9 million and are summarized as follows:

(€ million)	Public Service Contracts
2002	37.0
2003	32.8
2004	29.9
2005	26.8
2006	23.0
2007 and thereafter	73.4
Total minimum future payments	222.9

Specific Contractual Engagements

The Group and its water distribution and energy services subsidiaries, as part of their contractual obligations as concessionaires and in return for the revenue it receives, assumes responsibility for the replacement of fixed assets in the publicly owned utility networks they manage. The Group forecasts the expenditures required in this regard over the remaining duration of the relevant contracts. The accumulated expenditure forecast is estimated at €2.4 billion (€1.9 billion for water and €0.5 billion for energy). These expenditures will either be expensed or amortized over the shorter of the estimated useful lives of the assets or the contract period, according to the contract terms.

Insurance companies have issued performance guarantees in connection with the activities of the Group's US subsidiaries (operational guarantees, guarantees of site restoration), which have been underwritten by Vivendi Environnement SA up to a maximum amount of $0.8 billion. This is essentially an upper limit, the majority of which are not used at the moment.

Under the Berlin water contract, the Group may be obligated to pay approximately €613 million to previous land owners, not indemnified by the Berlin government, who present claims for payments.

Vivendi Universal has agreed to sell to the Group, and the Group has agreed to buy the 51% interest in B1998 SL if the partner exercises the option agreement, which remains valid, until October 6, 2008 at a price based on the average of the market value of FCC's shares during the three months preceding the exercise of the option (up to seven times FCC's EBITDA or 29.5 time FCC's earnings per share for the previous year, whichever is lower). B1998 SL is a holding company which owns 57% of FCC. If based on the price of FCC's common stock on December 31, 2001, the price would be approximately €812 million.

Capital Leases and Other Long Term Leases

The Group uses capital leases with a purchase option in order to finance certain operating assets and investment properties. As stated in Note 2 to the consolidated financial statements, the Group has been capitalizing these assets and recording the principal portion of the related capital leases as long-term debt. Minimum future payments under these capital lease obligations at December 31, 2001, 2000 and 1999 represent €0.8 billion, €0.6 billion and €1.2 billion, respectively.

Vivendi Environnement has concluded capital and operating leases. As of December 31, 2001, minimum future payments for these contracts amount to :

	Operating leases	Capital leases
2002	349.7	119.5
2003	328.0	92.2
2004	288.3	78.8
2005	273.9	65.8
2006	263.6	57.9
2007 and thereafter	1,190.2	406.3
Total minimum future lease payments	2,693.7	820.5
Less amounts representing interest	—	299.6
Present value of net minimum future lease payments	—	520.9

Litigation

The Group is subject to various litigation in the normal course of business. Although it is not possible to predict the outcome of such litigation with certainty, based on the facts known to the Group and after consultation with counsel, management believes that such litigation will not have a material adverse effect on the Group's financial position or results of operations.

Environmental Matters

The Group's operations are subject to evolving and increasingly stringent environmental regulations in a number of jurisdictions. The Group's operations are covered by insurance policies. At December 31, 2001, there are no significant environmental losses.

Commitments received

	At December 31,		
(€ millions)	**2001**	**2000**	**1999**
Guarantees and cautions received	180.8	133.0	87.5
Other engagements received	1,204.7*	1,059.0	749.0
Total	1,385.5	1,192.0	836.5

* Includes €1,155 million of engagements from related parties.

21. INVESTMENTS ACCOUNTED FOR USING THE PROPORTIONATE CONSOLIDATION METHOD

Investments accounted for using the proportionate consolidation method represent companies in which the Group and other shareholders have agreed to exercise joint control over significant financial and operating policies.

Summarized financial information for major subsidiaries consolidated under the proportionate consolidation method is as follows (in millions of euros):

	At December 31,		
Balance sheet data	**2001**	**2000**	**1999**
Non-current assets	8,081.6	5,224.5	4,333.8
Current assets	4,693.9	2,169.6	2,627.4
Total assets	12,775.5	7,394.1	6,961.2
Shareholders' equity	5,145.4	2,098.3	1,884.3
Minority interests	163.3	278.5	243.7
Financial debt	2,851.9	1,776.2	1,557.7
Reserves and other liabilities	4,614.9	3,241.1	3,275.5
Total liabilities and shareholders' equity	12,775.5	7,394.1	6,961.2

	2001	**2000**	**1999**
Income statement data			
Net sales	4,923.3	3,050.8	2,312.6
Operating income	426.3	345.5	235.0
Net income	128.3	184.3	88.6
Cash flow data			
Operating cash flow	449.2	274.9	261.9
Investing cash flow	(677.9)	(309.4)	(452.0)
Financing cash flow	311.2	201.8	131.7

22. SEGMENT INFORMATION

In accordance with the provision of FAS 131, the Group has identified 5 reportable segments which include: Water, Waste Management, Energy Services, Transportation, and FCC. These segments are consistent with the basis on which management evaluates investments and results.

The Water segment integrates water and wastewater activities such as water distribution, water and wastewater treatment, industrial process water, manufacturing of water treatment equipment and systems.

The Waste Management segment collects, processes and disposes of household and trade and industrial waste.

The Energy Services segment includes energy optimization and related services.

The Transportation segment focuses on the operation of passenger transportation services, both road and rail networks.

FCC is a separate segment that operates in construction, urban sanitation and water services, cement production and urban related activities mostly in Spain.

Revenue From External Customers

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Water	13,641.2	12,768.2	10,466.9
Waste management	5,914.4	5,260.0	3,474.6
Energy	4,017.4	2,988.5	2,670.5
Transportation	3,098.9	3,131.1	2,415.8
FCC	2,454.8	2,114.7	1,902.2
Total	29,126.7	26,262.5	20,930.0

Revenue Between Segments

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Water	10.3	6.8	5.0
Waste management	32.3	44.2	39.7
Energy	5.9	12.1	10.4
Transportation	4.1	0.8	—
FCC	1.8	—	—
Other	4.9	28.8	—
Total	59.3	92.7	55.1

Amortization Expense

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Water	527.6	531.3	373.6
Waste management	505.2	462.6	315.5
Energy	160.2	129.0	131.8
Transportation	149.8	145.4	85.6
FCC/Proactiva	129.9	87.6	80.2
Other	11.9	7.4	(10.5)
Total	1,484.6	1,363.3	976.2

Operating Income (Previous method of presentation) and EBIT:

(€ millions)	For the year ended at December 31, EBIT 2001	Operating income (previous method) 2001	2000	1999
Water	1,089.6	1,122.2	1,021.2	762.6
Waste management	390.7	392.9	393.9	276.0
Energy	220.5	224.0	191.3	168.5
Transportation	112.1	112.1	105.3	94.1
FCC	229.5	231.0	208.1	185.4
Other	(29.3)	(29.4)	(10.2)	(10.5)
Total	2,013.1	2,052.8	1,909.6	1,476.1

NB : The ventilation of operating income for 2000 has been modified to take into account reinvoicing between segments of Vivendi Environnement.

Total Assets

(€ millions)	At December 31, 2001	2000	1999
Water	19,095.8	18,470.6	22,134.3
Waste management	5,474.9	6,483.8	5,332.1
Energy	4,471.0	3,515.3	3,159.8
Transportation	2,576.0	1,992.8	1,915.6
FCC/Proactiva	3,749.5	2,996.4	2,838.0
Other	9,042.1	6,364.1	6,027.9
Total	44,409.3	39,823.0	41,407.7

Expenditures for Long Lived Assets

(€ millions)	For the year ended at December 31, 2001	2000	1999
Water	1,188.3	1,040.8	780.2
Waste management	794.2	869.9	412.7
Energy	401.5	361.8	356.2
Transportation	287.8	181.6	241.4
FCC/Proactiva	206.7	131.6	107.9
Other	0.0	0.5	4.2
Total	2,878.5	2,586.2	1,902.6

Long-term Assets

(€ millions)	At December 31, 2001	2000	1999
Water	15,441.0	14,800.7	13,236.8
Waste management	5,504.2	5,083.3	4,181.1
Energy	2,565.1	2,155.0	1,925.9
Transportation	1,762.6	1,374.2	1,392.3
FCC/Proactiva	1,883.9	1,889.0	1,728.6
Other	243.9	60.0	238.6
Total	27,400.7	25,362.2	22,703.3

Equity Method Investments

	At December 31,					
	2001		2000		1999	
(€ millions)	Investment	Share in net earnings	Investment	Share in net earnings	Investment	Share in net earnings
Water	397.3	21.6	275.7	38.8	200.5	30.9
Waste management	26.1	7.2	20.8	3.3	6.1	0.7
Energy	9.0	1.0	6.3	1.1	5.7	1.7
Transportation	10.7	0.4	5.9	0.5	7.9	0.3
FCC/Proactiva	174.9	16.2	208.6	16.9	124.5	10.9
Other	0.0	1.4	6.1	0.0	(0.4)	0.0
Total	618.0	47.8	523.4	60.6	344.3	44.5

Geographical Breakdown of Net Sales

	For the year ended at December 31, 2001					
(€ millions)	**France**	**United Kingdom**	**Rest of Europe**	**United States of America**	**Rest of the world**	**Total**
Water	6,193.7	729.7	1,517.2	3,817.3	1,383.3	13,641.2
Waste management	2,440.8	655.1	668.6	1,434.3	715.6	5,914.4
Energy	2,733.8	313.5	896.3	0.2	73.6	4,017.4
Transportation	993.3	906.9	1,028.1	35.2	135.4	3,098.9
FCC	10.5	33.4	2,228.1	138.4	44.4	2,454.8
Total	12,372.1	2,638.6	6,338.3	5,425.4	2,352.3	29,126.7

	For the year ended at December 31, 2000 (restated)					
(€ millions)	**France**	**United Kingdom**	**Rest of Europe**	**United States of America**	**Rest of the world**	**Total**
Water	5,748.6	648.5	1,434.7	3,678.2	1,258.2	12,768.2
Waste management	2,353.1	573.0	485.8	1,192.8	655.3	5,260.0
Energy	1,795.7	379.7	781.7	0.0	31.4	2,988.5
Transportation	941.2	1,135.3	913.0	0.0	141.6	3,131.1
FCC	10.0	25.4	1,913.2	95.1	71.0	2,114.7
Total	10,848.6	2,761.9	5,528.5	4,966.1	2,157.5	26,262.5

	For the year ended at December 31, 1999 (restated)					
(€ millions)	**France**	**United Kingdom**	**Rest of Europe**	**United States of America**	**Rest of the world**	**Total**
Water	5,550.4	525.0	920.5	2,818.0	653.0	10,466.9
Waste management	1,977.0	509.6	192.7	433.5	361.8	3,474.6
Energy	1,717.8	310.4	617.9	0.0	24.5	2,670.5
Transportation	649.5	1,043.5	661.1	0.0	61.7	2,415.8
FCC	8.4	23.5	1,804.8	4.1	61.3	1,902.2
Total	9,903.1	2,412.0	4,197.0	3,255.6	1,162.3	20,930.0

Geographical Breakdown of Long Lived Assets

(€ millions)	**France**	**United Kingdom**	**Rest of Europe**	**United States of America**	**Rest of the world**	**Total**
As of December 31,						
2001	6,897.5	2,199.5	7,986.2	8,685.6	1,631.9	27,400.7
2000	7,964.1	1,881.0	6,242.3	8,347.7	927.1	25,362.2
1999	7,026.4	2,041.2	6,181.2	7,058.4	396.1	22,703.3

23. RELATED PARTY TRANSACTIONS

The main transactions with related parties (principally Vivendi Universal, its subsidiaries and some minority stockholders in Vivendi Environnement subsidiaries) and amounts receivable from and payable to them were as follows (in millions of euros):

	At December 31,		
	2001	**2000**	**1999**
Receivables			
Trade accounts	40.2	115.3	72.9
Loans	352.0	74.7	3,818.8
Payables			
Trade accounts	105.9	22.6	53.0
Loans	121.0	1,245.7	13,812.4

	At December 31,		
	2001	**2000**	**1999**
Sales	13.9	336.4	305.1
Purchases	(16.2)	(176.0)	(247.7)
Interest expense	(91.2)	(584.5)	(348.3)
Interest income	100.3	113.9	84.6

Related party transactions include transactions with Vivendi Universal (described below) those related to facility management services provided to Vivendi Universal by subsidiaries of the Group (waste collection in particular) and transactions with the local transit authority responsible for the Stockholm metro, which is a minority stockholder in one of the Group's subsidiaries.

Financial Agreements

In 2000:

- At the time of the IPO, the Group was fully financed by Vivendi Universal as a result of a financial agreement signed on June 20, 2000. The current account with Vivendi Universal bore interest at 5.7%, which corresponded to the market rate of 5.2% plus a margin of 0.5 %. An annual payment of €41.2 million was paid by Vivendi Universal to the Group.

- In September 2000, the Group entered into an interest rate swap with Vivendi Universal (Vivendi Environnement pays 5.2% fixed and receives EURIBOR 3 months variable). The maximum notional amount of this swap is €5 billion, and this swap expires in 2004.

In 2001:

- The current account with Vivendi Universal was fully reimbursed in May 2001.

- Further to different refinancing operations, the maximum notional amount has been reduced to €3.266 billion. This decrease of €1.734 billion led to payment by the Group of €58 million to Vivendi Universal. Its relates to the fair value of the portion of the swap that has been canceled. The payment is expensed over the life of the swap.

- In connection with the above paragraph, the Group and Vivendi Universal have changed some of the terms of the financial agreement. The quarterly amount of €10.3 million paid by Vivendi Universal to the Group is reduced to €5.15 million from January 1, 2002. Vivendi Universal paid to Vivendi Environnement €58 million, a compensation equal to the present value of the reduction in future payments.

Service agreements

Under the terms of a contract for assistance and services, effective on January 1, 2000 and which expired on December 31, 2000, the Group benefited following its initial public offering from a number of services provided by Vivendi Universal, including financial and legal assistance, personnel and the use of computer equipment, etc. Pursuit to this agreement, the amount paid by the Group to Vivendi Universal during 2000 was €40.4 million.

Subsequent to December 31, 2000, the Group did not enter into any service agreements with Vivendi Universal in 2001.

Vivendi trademark agreement

Under a trademark license agreement, the Group has the right to use the "Vivendi" trademark. This license has a term of five years and carries an annual license fee of €30,500 before tax.

VINCI bonds

The Group indirectly took part in the issuance of the Vivendi Universal bonds convertible into Vinci shares. Vivendi Universal lent to the Group €120 million against 1,552,305 shares of Vinci held by the Group through Dalkia France. The terms of the loan are similar to those of the bond issued by Vivendi Universal: a fixed rate of 1% per annum and maturing on March 1, 2006.

EDF relations

Agreements with EDF were realized through stages in 2000 and during the first six months of 2001.

- December 2000, Vivendi Environnement sold to EDF 27% of Dalkia for a total of €757 million.
- January 8, 2001, Vivendi Environnement sold a further 3.24% of Dalkia for €92 million.
- During the second quarter of 2001, Dalkia acquired from EDF the service sector of EDF for €282 million via a capital increase of €177 million and a cash payment of €105 million.

As a result of these agreements, EDF holds 34% of Dalkia. The capital gain and dilution profit before taxes realized in 2001 is €121 million (€107 million after taxes).

Guarantees

In connection with the formation of the Group and Vivendi Universal's contribution or sale to the Group of its interests in its water and energy services operations, the Group has replaced Vivendi Universal as managing partner (associé commandité) of substantially all Vivendi Universal's historical water and energy services subsidiaries. As managing partner of these subsidiaries, the Group has agreed, or will agree, to reimburse those subsidiaries for expenses related to the maintenance and replacement of equipment.

As managing partner of the subsidiaries, the Group has the power to appoint managers (gérants) and to control the business of the subsidiaries. The Group is also jointly liable for those subsidiaries' obligations. Under a guarantee agreement dated June 20, 2000, Vivendi Universal will pay the Group up to €381 million for any loss that it suffers over a period of 12 years as a result of its undertaking to reimburse the subsidiaries for expenses associated with the maintenance or replacement of equipment. This guarantee covers both recurring expenses (those incurred in accordance with budgeted amounts and charges recorded in previous years) and exceptional expenses. Recurring expenses are guaranteed up to an initial limit of €15.2 million a year (subject to adjustment), a limit that is indexed to the cost of equipment maintenance and repair. The maximum total amount the Group can recover for recurring expenses is €228.7 million. Exceptional expenses are guaranteed up to a maximum total amount of €381.1 million less any sums already paid to the Group under the guarantee. If the amount the Group claims under this provision is over €228.7 million, it will repay the excess to Vivendi Universal over a period of five years. Operating expenses include an income of €15.9 million in connection with the payment by Vivendi Universal of the expenses associated with the maintenance or replacement of equipment.

In the event of a successful bid for the Group that is not approved by its management board, Vivendi Universal's obligations under the guarantee agreement will automatically terminate. However, the Group's obligation to repay Vivendi Universal any amount due in excess of €229 million will be unaffected by such an event.

FCC Agreement

Vivendi Universal transferred to the Group its 49% interest in B 1998 SL, a holding company that owns 57% of FCC, a Spanish company listed on the Madrid stock exchange, for €691 million. Consequently, the Group indirectly owns 27.9% of FCC. Ms. Esther Koplowitz, a member of the Group's supervisory board and a member of Vivendi Universal's board of directors, holds the remaining 51% of B 1998 SL.

Under the terms of an option agreement dated October 6, 1998, Ms. Koplowitz has an option to sell to Vivendi Universal, at any time between April 18, 2000 and October 6, 2008, Ms. Koplowitz's 51% interest in B 1998 SL at a price based on the average market value of FCC's shares during the three months preceding the exercise of the option (up to seven times FCC's EBITDA or 29.5 times FCC's earnings per share for the previous year, whichever is lower).

Vivendi Universal has agreed to sell to the Group, and the Group has agreed to buy, Ms. Koplowitz's 51% interest in B 1998 SL if Ms. Koplowitz exercises the option. If the Group purchases this interest, it will own 100% of B 1998 SL. Under these circumstances, Spanish law would require it to launch a public tender offer for the 43.5% of FCC not owned by B 1998 SL. The price per share of the offer would be determined by the Spanish stock exchange authorities. If based on the price of FCC's common stock on February 28, 2002, the price for the 43.5% interest would be approximately €1,290 million, subject to adjustment by the Spanish stock exchange authorities.

B 1998 SL's *statuts* provide for reciprocal rights of first refusal in the event of the sale of the B 1998 SL shares to a third party. In the event Vivendi Universal ceases to own a majority of the Group's capital, Ms. Koplowitz has the right to buy the Group's interest in B 1998 SL at a price equal to the lower of the purchase price the Group paid to Vivendi Universal and the market value of the interest in B 1998 SL.

24. INCOME STATEMENT

Employees and personnel charges

Personnel charges including profit sharing amount to €8.0 billion in 2001, compared to €7.3 billion in 2000 and €5.9 billion in 1999.

	For the year ended at December 31,		
(€ millions)	**2001**	**2000**	**1999**
Personnel costs	7,992	7,295	5,909
Profit sharing	42	38	30
	8,034	7,333	5,939

Weighted-average number of employees:

By category	For the year ended at December 31, 2001	2000	1999
Executives	33,320	25,062	19,395
Employees	205,716	190,314	151,732
	239,036	215,376	171,127

By segment	For the year ended at December 31, 2001	2000
Water	72,538	69,103
Waste management	60,710	53,175
Energy	30,691	24,051
Transportation	42,122	37,348
Proactiva	9,779	9,618
FCC	23,124	22,075
Other	72	6
	239,036	215,376

By method of consolidation	For the year ended at December 31, 2001	2000
Fully consolidation	191,466	188,602
Proportionate consolidation	47,570	26,774
	239,036	215,376

Reconciliation of EBIT to operating income (previous method) for 2001

	(€ millions)
EBIT	2,013.1
• Receipts reclassified as financial income	(22.6)
• Financial depreciation of fixed assets relating to public service contracts reclassified as financial income	14.4
• Write-off of certain business assets	9.5
• Loss on sale of assets	30.5
• Other	7.9
Operating income (previous method)	2,052.8

Amortization and valuation allowances

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Amortization			
Operational	(1,484.6)	(1,295.7)	(911.4)
Financial	—	—	—
Other	—	—	—
Total	(1,484.6)	(1,295.7)	(911.4)
Valuation allowances			
Operational	17.7	(67.6)	(64.8)
Financial	(53.5)	(6.0)	(48.3)
Other	(102.6)	(172.9)	(22.7)
Total	(138.4)	(246.5)	(135.8)
Total	(1,623.0)	(1,542.2)	(1,047.2)

Goodwill amortization is made up of the following:

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Goodwill amortization	(257.9)	(232.1)	(171.1)
Impairment of goodwill	(2,652.2)*	(74.2)	(195.7)
Total	(2,910.1)	(306.3)	(366.8)

* Including €2,611 million of US Filter Corporation goodwill impairment.

Financial income and expenses

Net financial income for 2001, 2000 and 1999 amounts to a loss of €798.0 million, €891.8 million and €600.4 million, respectively.

It includes interest expenses, foreign exchange costs and provisions.

(€ millions)	For the year ended at December 31, 2001	2000 restated	1999 restated
Interest expense	(764.2)	(875.3)	(468.3)
Other financial income (expense)	19.7	(36.8)	(132.1)
Provisions	(53.5)	20.3	0.0
Financial income (expense)	(798.0)	(891.8)	(600.4)

Capitalized interest expenses are not significant and amount to €0.2 million, €3.3 million and €1.5 million in 2001, 2000 and 1999 respectively.

Foreign exchange income, is included in other financial income and expenses, and amounts to a €15.6 million gain, a €12.2 million loss and a €6.1 million gain for 2001, 2000 and 1999 respectively.

The reduction in financing cost is due to the full-year effect of the capital increase in July 2000, and the reduction in interest rates between 2000 and 2001.

Financial provisions, include allowances on treasury stock of €23.5 million and the amortization of debt issuance costs €11.3 million.

Other income (expenses)

	For the year ended at December 31,		
(€ millions)	**2001**	**2000 restated**	**1999 restated**
Capital gains and losses	150.0	729.0	0.0
Losses, reserves and impairment of assets	(117.0)	0.0	0.0
Other	5.9	48.3	(56.4)
	38.9	777.3	(56.4)

Capital gains and losses are related to the sale in 2001 of Dalkia to EDF for €121 million and the capital gain on the sale of SAFEI and Midkent for €34 million.

Losses, reserves and impairment of assets are related primarily to a reserve on Schwarzepumpe (at 100%), for a loss of €100 million.

25. LISTING OF MAIN COMPANIES INCLUDED IN CONSOLIDATED FINANCIAL STATEMENTS IN 2001

In 2001, the Group consolidated or accounted for a total of slightly over 2,383 companies, of which the principal companies are:

Group and Address	Consolidation	% Holding
Vivendi Environnement 36-38, avenue Kléber – 75016 Paris	Full	100.00
Water		
Vivendi Water 52, rue d'Anjou – 75008 Paris	Full	100.00
Générale des Eaux – Sahide and subsidiaries 52, rue d'Anjou – 75008 Paris	Full	100.00
Of which in France:		
Compagnie des Eaux et de l'Ozone 52, rue d'Anjou – 75008 Paris	Full	100.00
Compagnie des Eaux de Paris 4, rue du Général Foy – 75008 Paris	Full	100.00
Société Française de Distribution d'Eau 4, rue du Général Foy – 75008 Paris	Full	97.07
Compagnie Fermière de Services Publics 3, rue Marcel Sembat – Immeuble CAP 44 – 44100 Nantes	Full	99.13
Compagnie Méditerranéenne d'exploitation des Services d'Eau 12, boulevard René Cassin – 06100 Nice	Full	98.69
Société des Eaux de Melun Zone Industrielle – 198/398, rue Foch – 77000 Vaux Le Pénil	Full	98.68
Société des Eaux de Marseille et ses filiales 25, rue Edouard Delanglade – BP 29 – 13254 Marseille	Prop	48.82
Société des Eaux du Nord 217, boulevard de la Liberté – 59800 Lille	Prop	49.54
Société des Eaux de Versailles et de Saint-Cloud 145, rue Yves le Coz – 78000 Versailles	Prop	50.00
Sade-Compagnie Générale de Travaux d'Hydraulique and subsidiaries 28, rue de la Baume – 75008 Paris	Full	98.57
Omnium de Traitements et de Valorisation (OTV) and subsidiaries l'Aquarène – 1, place Montgolfier – 94417 St Maurice Cedex	Full	100.00
Bonna Sabla Tour Ariane – 5, place de la Pyramide – 92800 Puteaux La Défense	Full	99.63
Sainte-Lizaigne SA Tour Ariane – 5, place de la Pyramide – 92800 Puteaux La Défense	Full	99.45
Prague Water CGE AW 52, rue d'Anjou – 75008 Paris	Full	100.00

Group and Address	Consolidation	% Holding
Of which outside France:		
Vivendi Water UK Plc and subsidiaries 37-41 Old Queen Street, London SW1H 9JA (Great-Britain)	Full	100.00
Philadelphia Suburban Corporation 762 West Lancaster Avenue – Bryn Mawr – Pennsylvania 19010 – 3489 (USA)	EM	16.88
US Filter Corporation and subsidiaries 40-004 Cook Street – 92211 Palm Desert (USA).....	Full	100.00
Berliner Wasser Betriebe Anstalt des Offentlichen Rechts – Hohenzollerndamn 45 – 10631 Berlin (Germany)	Prop	24.95
Servitec KFT Lovas UT 131b – 1012 Budapest (Hungary)	Full	100.00
Vivendi Water Ceska Republica Sokolovska 238 – Prague 9 (Czech Republic)	Full	100.00
OEWA Wasser und Abwasser Walter Köhn Strasse 1 – 04358 Leipzig (Germany)	Full	94.00
ENERGY		
Dalkia and subsidiaries 37, avenue du Mal de Lattre de Tassigny – 59350 St André les Lille	Full	66.00
Cogestar – Saint André 37, avenue du Mal de Lattre de Tassigny – 59350 St André les Lille	Full	65.65
Cogestar 2 33 Place Ronde, Quartier Valmy – 92800 Puteaux	Full	65.65
Crystal S.A. – Saint André 37, avenue du Mal de Lattre de Tassigny – 59350 St André les Lille	Full	65.65
Moravskoslezke Teplarny AS 28 Rijna 152 – 70974 Ostrava (Czech Republic).....	Full	49.03
Dalkia PLC and subsidiaries Elizabeth House – 56-60 London Road – Staines TW18 4BQ (Great-Britain).....	Full	49.87
Dalkia and subsidiaries – Italy 230 via Sempione 20 016 PERO	Full	49.87
Clemessy 18, rue de Thann – 68200 Mulhouse.....	Full	65.62
Siram Via Sempone 230- 20016 Pero – Italy.....	Full	49.87

Group and Address	Consolidation	% Holding
Waste Management		
Compagnie Générale d'Entreprises Automobiles and subsidiaries Parc des Fontaines – 163 / 169, avenue Georges Clémenceau – 92000 Nanterre	Full	100.00
Société d'Assainissement Rationnel et de Pompage and subsidiaries (S.A.R.P.) 162/16 Energy Park IV – 162/166, boulevard de Verdun – 92413 Courbevoie Cedex	Full	99.47
SARP – Industries and subsidiaries 427, route du Hazay – Zone Portuaire Limay-Porcheville-78520 Limay	Full	99.78
Onyx Environmental Group Plc Onyx house – 401 Mile End Road – E34 PB – London (Great-Britain)	Full	100.00
Onyx North America Corp. 3225 Aviation Avenue – 4th Floor – 33133 Miami (USA)	Full	100.00
Superior Services One Honey Creed Corporate Center – 125 South – 84th Street – Suite 200 WI 53214 Milwaukee (USA)	Full	100.00
Collex Waste Management Pty Ltd 280 Georges Street – Level 12 – P.O. Box H126 Australia Square – NSW 1215 – Sydney (Australia)	Full	100.00
Onyx Umweltservice GmbH Am Mühlengarten 4 – 66292 Riegelsberg (Germany)	Full	100.00
Marius Pedersen Obaekvej 49 – 5863 Ferritslev (Denmark)	Full	65.00
Transportation		
CGEA Connex (Compagnie Générale d'Entreprises Automobiles) and subsidiaries Parc des Fontaines – 163 / 169, avenue Georges Clémenceau – 92000 Nanterre	Full	100.00
Aktiebolaget Linjebuss Englundavagen 9 – Box 1820 – 17124 Solna (Sweden)	Full	100.00
Connex Rail Ltd 41/45 Blackfriars Road – SE1 8PG London (Great-Britain)	Full	100.00
F.C.C.		
F.C.C. and subsidiaries (F.C.C.) Calle Balmes 36 – 08007 Barcelona (Spain)	Prop	27.96
Proactiva 216 Paso de la Castellana – 28046 Madrid (Spain)	Full	63.98

EM Equity method
Prop Proportionate

26. SUPPLEMENTAL DISCLOSURES

The following information has been prepared to present supplemental disclosures required under U.S. GAAP and SEC regulations applicable to the Group.

26A. SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN ACCOUNTING POLICIES GENERALLY ACCEPTED IN THE UNITED STATES AND FRANCE

The consolidated financial statements of the Group have been prepared in accordance with accounting principles generally accepted in France ("French GAAP") which differ in certain respects from accounting principles generally accepted in the United States ("U.S. GAAP"). The principal differences between French GAAP and U.S. GAAP as they relate to the Group are discussed in further detail below.

Use of the Proportionate Consolidation Method

Under French GAAP, it is appropriate to use the proportionate consolidation method for subsidiaries over which the Group and other shareholders have agreed to exercise joint control over significant financial and operating policies. Under the proportionate consolidation method, the Group recognizes the assets, liabilities, equity, revenues and expenses of subsidiaries to the extent of its interest in the Group ownership.

Under U.S. GAAP, when the Group controls a subsidiary based on majority ownership or voting or other rights, the subsidiary is fully consolidated. When the Group does not exercise control over a subsidiary, but has significant influence over the entity, the Group uses the equity method to account for its investment.

This difference in accounting policy has no effect on either net income or shareholders' equity.

Use of the Equity Method

Under French GAAP there are several criteria to be met which result in the presumption that equity accounting should be used. For investments under 20%, equity accounting is followed if the investor is determined to have significant influence due to the relative level of ownership, board of directors representation, and other contractual relationships. Another consideration is the level of ownership by others in the investee. The Group applies the criteria described in Note 2.

Under U.S. GAAP, equity accounting is generally required when an investor's ownership interest is equal to or greater than 20% of the investee's total voting securities. In unusual situations where the ownership interest is less than 20% equity accounting may be appropriate if significant influence exists as the result of other contractual relationships and board representation.

Income taxes

Under French GAAP, the Group does not recognize deferred tax assets on net operating loss carryforwards or on temporary differences when the recovery of the related deferred tax asset is not probable.

Under U.S. GAAP, deferred tax assets are recognized for deductible temporary differences and net operating loss carryforwards and are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax asset will not be realized.

This difference in accounting policy has no effect on either net income or shareholders' equity.

Goodwill

Under both U.S. and French GAAP, goodwill arising from purchase business combinations is determined as the excess of the consideration paid by the acquirer over the fair value of the identifiable assets acquired and liabilities assumed as of the acquisition date.

Reduction of Shareholders' equity

Under French GAAP, the Group recognizes goodwill as an asset and amortizes it over the estimated useful life. However until December 1999, if the acquisition was financed with equity securities of the Group, the resulting goodwill could be recorded as a reduction of shareholders' equity (this option was adopted in 1999 and 2000 for the

acquisition of United States Filter Corporation as described in Note 3. Under U.S. GAAP, this option is not available and goodwill is recorded as an asset and amortized over the estimated useful life, not to exceed 40 years.

Under French GAAP on January 1, 2001, Vivendi Environnement has forgone the imputation of the goodwill of US Filter recorded as a reduction of shareholder's equity. As a consequence of which, there is no longer a difference between French GAAP and U.S. GAAP.

Specific transactions: Businesses sold by Vivendi Universal

Upon forming the Group, Vivendi Universal sold certain subsidiaries and affiliates to the Group. According to French GAAP, these transactions were at market value which, in certain cases, has resulted in the generation of additional goodwill. Under U.S. GAAP, transfers of assets among entities under common control, including transfers of operating subsidiaries, are recorded at the predecessor's historical cost basis.

Impairment of goodwill

Under French GAAP, the Group has recorded an impairment of goodwill. The method used to determine such impairment is not compliant with the provisions of SFAS 121. Consequently, the impairment charge has been adjusted under U.S. GAAP.

Dilution profit or capital gain

There is a difference between French and U.S. GAAP regarding the amount of dilution profit or capital gain due to the impact of U.S. GAAP adjustments on the carrying value of sold entities. These U.S. GAAP adjustments are posted as goodwill and therefore have been reported on this line item.

Intangible Assets

Start-up Costs

Under French GAAP, certain costs, such as start-up costs, are capitalized and amortized over their useful lives or the duration of the contract, if applicable.

Under U.S. GAAP, start-up costs are charged to expense in the period they are incurred.

Other Intangible Assets Acquired in Business Combinations

Under French GAAP, trademarks and market shares acquired in a business combination are not required to be amortized.

Under U.S. GAAP, market shares would not be considered as a separately identifiable intangible asset, but would be reclassified as a component of goodwill and would be recorded as an asset and amortized over the estimated useful life not to exceed 40 years. All other separately identifiable intangible assets acquired, such as trademarks, are recognized in the non-current assets section of the balance sheet and are amortized over their useful lives not to exceed 40 years.

Public Service Contracts

Commitments to Maintain and Repair Assets

Under French GAAP, a few consolidated subsidiaries, being generally jointly controlled, apply the accrue in advance method to account for repair costs.

Under U.S. GAAP, the Group applies the expensed as incurred method for maintenance and repair expenditures.

Payments to Local Authorities

Under French GAAP, these obligations are not recorded as a liability on the balance sheet. The debt service payments are expensed in a manner that results in the straight line recognition of the total payments over the contract period. The payments made in early years of the contract period may exceed the straight line expense amount. This

difference is recorded as a prepaid expense and amortized to income over the remaining contract period so as to achieve the straight line expense amount throughout the contract period.

Under US GAAP, the present value of the total obligation has been recorded as debt on the balance sheet. The interest element of the obligation is amortized to income so as to achieve a constant rate of interest on the outstanding liability.

Reserves

Under French GAAP, certain reserves and allowances may be provided, including reserves for repairs and replacement, and restructuring charges, when it is possible that those costs will be incurred or when management decisions are taken, but not yet documented.

Under U.S. GAAP, contingent losses are accrued only if it is probable that a liability had been incurred at the date of the financial statements and the amount of loss can be reasonably estimated. In addition, for certain reserves, such as restructuring charges, additional criteria must be met. If these criteria are not met, the provision for these reserves and allowance may not be recognized.

Reconciling adjustments were made to certain restructuring reserves because the probability criteria under FAS 5 had not been met or the criteria for severance ratification and employee identification under EITF 94-3 had not been completed at the time the reserves were established under French GAAP. Reconciling adjustments were also made to reverse reserves recorded under French GAAP for estimates of future possible repair and maintenance costs. The conditions under which the reserves were recorded did not meet the liability criteria under FAS 5.

Under French GAAP, reserves related to fixed assets, inventories and investments in unconsolidated subsidiaries may be accounted as liabilities. Under U.S. GAAP, these reserves are recognized as a reduction of the carrying value of the related assets.

Securitization and discounting of receivables

The Group has entered into various securitizations agreements, various discounting of receivables and sales of future receivables as described in Note 9 and Note 13.

According to the securitization agreement signed in France (see Note 9) for a total amount of €752 million at the end of 2001, an amount of €322 million (which concerns excise taxes) is not compliant with the provisions of SFAS 140 and is therefore restated under U.S. GAAP.

Regarding to the securitization agreements which are compliant with the provisions of SFAS 140, the Group, irrevocably and without recall, except for clean-up call, has transferred its eligible accounts receivables to the special purpose entities. The Group acts as collection agent. The sales of receivables concerned amounts to €430 million in France and $155 million in the USA.

The default reserve is calculated based on the analysis of historical loss trends and expected future loss. The securitization agreements were signed in December 2001. As a consequence, the carrying value of retained interests is deemed to be their fair value.

Under French GAAP, future receivables sale (see Note 13) is accounted as deferred income and the discounting of receivables is accounted for as a sale. Under U.S. GAAP, the deferred income is reclassified as long-term financial debt whereas discounting of receivables does not qualify as a true sale in compliance with the provisions of SFAS 140.

Financial Instruments

Investment Securities

Under French GAAP, investments in debt and non-consolidated equity securities are recorded at acquisition cost and an allowance is provided if management deems that there has been an other-than-temporary decline in fair value. Unrealized gains and temporary unrealized losses are not recognized.

Under U.S. GAAP, investments in debt and equity securities are classified into three categories and accounted for as follows:

Debt securities that the Group has the intention and the ability to hold to maturity, are carried at cost and classified as "held-to-maturity".

Debt and equity securities that are acquired and held principally for the purpose of sale in the near term are classified as "trading securities" and are reported at fair value, with unrealized gains and losses included in earnings. All other investment securities not otherwise classified as either "held-to-maturity" or "trading" are classified as "available-for-sale" securities and reported at fair value, with unrealized gains and losses excluded from earnings and reported in shareholders' equity.

Under U.S. GAAP, Vivendi Universal shares owned by the Group are accounted for as "available-for-sale securities".

Convertible bonds

Under French GAAP, the accrual of redemption premium is optional. Under U.S. GAAP, the redemption premium is accrued as financial interest expense. The Group's convertible bonds include a beneficial conversion feature associated with the contingent conversion of the bonds into the Group's shares. The conversion was contingent upon the Group effecting an initial public offering of its shares, which it did in July, 2000. In accordance with French GAAP, the Group has not recorded financial interest expense in connection with the beneficial conversion feature. Under U.S. GAAP, a financial interest expense related to the feature computed upon the full amount of bonds eligible is recorded as of the date of the initial public offering.

Treasury Shares

Under French GAAP, shares of the Group's own stock owned by the Group and its subsidiaries are recorded as marketable securities in the consolidated financial statements if those shares are acquired to stabilize the market price or in connection with stock options granted to directors and employees.

Under U.S. GAAP, treasury shares are recorded as a reduction of shareholders' equity. Profit and loss on the disposal of treasury shares is recognized as an adjustment to shareholders' equity.

Derivative Financial Instruments

According to French GAAP, derivative financial instruments are not recorded to the consolidated balance sheet. The effects of financial instruments which qualify as hedging instruments are included in net income along with the corresponding hedged item for those financial instruments which do not qualify as hedging instruments, a provision is recorded when their market value is negative.

On January 1, 2001, Vivendi Environnement adopted SFAS 133 "Accounting for derivative instruments and hedging activities". According to SFAS 133, derivative financial instruments (including those embedded in other contracts) should be recorded on the balance sheet at their fair value. Changes to fair value are recorded depending on whether the derivative instrument is classified as a fair value hedge or a cash-flow hedge, or is regarded as not being a hedging instrument under SFAS 133.

The variations of fair value hedges are recorded in financial income (expenses). The effect on income is matched by the reevaluation of the hedged asset, debt or firm commitment which is also recorded in financial income (expenses).

The variation of cash-flow hedges are recorded under other comprehensive income. They are recorded in income depending on the realization of the underlying cash-flow.

The qualification of the hedge, results from the initial intention of the financial instrument as a means of hedging an asset, debt, firm commitment or future cash-flow. The effectiveness of the hedging instrument should be periodically tested to show the correlation between the changes in the hedging instrument and the hedged item. The ineffective part of the hedging instrument is systematically recorded to financial income (expenses).

The derivative instruments used by Vivendi Environnement as part of its risk management, but which do not constitute hedging instruments under SFAS 133 are recorded at their fair value, with changes to their value included in net income of the exercise.

Due to its financial operations, Vivendi Environnement is exposed to market risks (essentially due to changes in interest rate or exchange rates). Management uses these financial instruments to limit these financial risks. Nevertheless, some of the financial instruments used do not satisfy the criteria defined by SFAS 133 to qualify as hedging instruments. Consequently, the volatility of the market value of these derivative instruments is reflected in financial income (expenses).

On January 1, 2001, the effect of the adoption of SFAS 133 on the consolidated accounts was an increase of €6 million on net income and a reduction of €18 million on other comprehensive income.

The amount of other comprehensive income that has been reclassified into earning during the year is €(10.3) million.

At December 31, 2001, the amount of accumulated other comprehensive income relating to Cash-Flow hedges amounts to €(29.5) million (net of tax) of which an amount of €(11.6) million (net of tax) will be reclassified into earnings during the next year. The Cash-Flow hedges are used by the Group to hedge underlying on the 2002-2004 period.

The amount of the inefficiency is not significant as of December 31, 2001 both for fair value hedges and cash flow hedges. The Group did not have any amount excluded from the measure of effectiveness. No contract that qualifies as hedge was cancelled during year 2001. There are no net investment hedges as of December 31, 2001.

Stock Based Compensation

Vivendi Universal has adopted stock option incentive plans that grant options on its common shares to certain directors and officers, including those of the Group. Vivendi Universal also maintains employee stock purchase plans that allow substantially all full-time employees of the Group and its subsidiaries to purchase shares of Vivendi Universal.

Under French GAAP, common shares issued upon the exercise of options granted to employees and directors are recorded as an increase to share capital at the cumulative exercise price. Vivendi Universal shares sold to employees through qualified employee stock purchase plans are reclassified from marketable securities to share capital. The difference between the carrying value of the treasury shares and the cumulative exercise price by the stock purchase plan is recognized as a gain or loss in the period that the shares are sold. In accordance with French GAAP, the Group has not recorded compensation expense on stock-based plans with a discounted exercise price of up to 20% off the fair value of the common shares at the date of grant.

Under U.S. GAAP, APB opinion No. 25 defines plans that grant or sell common shares to employees as compensatory if such plans are not open to substantially all employees and do not require the employee to make a reasonable investment in the shares, usually defined as no less than 85% of the market value at the grant date. If a plan is deemed to be compensatory, APB Opinion No. 25 requires that the compensation arising from such plans be measured based on the intrinsic value of the shares granted or sold to employees. For fixed plans remuneration is the difference between the exercise price of the stock option and the market value of the corresponding shares. For compensatory stock option plans, remuneration is recognized in the period for which the relative service is performed.

These reconciling items are further described in Note 26F.

Pension Plans

Since January 1997, the Group has adopted an accounting policy to record pension obligations, covering all eligible employees, using the projected unit credit method. The transition obligation as of the date of adoption is amortized over the average residual life of the employees.

Under U.S. GAAP, the projected unit credit method is required to be applied as of January 1, 1989. The transition obligation or fund excess determined as of January 1, 1989 is amortized over the average residual active life of the population that was covered under the plan at that date.

Under French GAAP, postretirement benefits other than pensions are recorded as expense when amounts are paid.

Under U.S. GAAP, the Group must recognize an obligation for amounts to be paid under postretirement plans, other than pensions. A postretirement transition obligation may be determined as of January 1, 1995 and amortized over the estimated average life of retirees covered by the plan. Current period charges are based on estimated future payments to expected retirees.

Lease contracts

The Group recognizes assets and debts corresponding to certain types of lease contracts including a purchase option (known in France as "crédit-bail"). Under French GAAP, lease payments corresponding to all other types of leases are expensed as incurred.

Under U.S. GAAP, leases are classified as capital or operating leases. Leases that meet the criteria of capital leases are recognized as assets with a corresponding amount presented as debt on the balance sheet. Recorded assets are depreciated over their estimated useful lives.

26B. NEW ACCOUNTING PRONOUNCEMENTS IN THE UNITED STATES

In June 2001, the Financial Accounting Standards Board (FASB) issued SFAS No. 141, "Business Combinations," and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 142 is effective for the Group as of January 1, 2002. Under the new rules, goodwill and indefinite lived intangible assets will no longer be amortized but will be reviewed at least annually for impairment. Intangible assets that are not deemed to have an indefinite life will continue to be amortized over their useful lives.

SFAS No. 141 requires that all business combinations be accounted for under the purchase method only. SFAS No. 141 is effective for all business combinations subsequent to June 30, 2001. SFAS No. 142 also states that goodwill and intangible assets with indefinite lives acquired after June 30, 2001 should not be amortized. During 2001, the Group accounted for business combinations consummated subsequent to June 30, 2001 in accordance with SFAS No. 141 and SFAS No. 142.

Goodwill amortization expense for the years ended December 31, 2001 and 2000 was €365 millions and €313 millions respectively.

The Group estimates the cumulative effect of adopting this standard will result in a non-cash charge in the first quarter of 2002 of an amount between €2.5 billion and €3 billion. This impairment reflects the impact on the subsidiary US Filter of the evolution of the US economic situation. It will be accounted for as a change in accounting principles.

SFAS No. 143 "Accounting for Asset Retirement Obligations" was issued in June 2001 and becomes effective in January 2003. This statement addresses accounting and reporting for obligations and costs which will occur when long-term assets are retired. Among other things, the statement requires that the present value of the liability associated with future asset retirements be recorded on the balance sheet when an obligation has been incurred and when it can be measured. The amortization of the capitalized cost and increases in the present value of the obligation which result from the passage of time, are recorded as charges to earnings. The Group estimates that the adoption of the new standard should not have a material effect on the consolidated financial statements.

SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" was issued in August 2001 and becomes effective in January 2002. This statement replaces previous accounting standards related to long term asset impairments and provides guidance concerning the recognition and measurement of impairment losses for certain types of long-term assets. The statement recommends the use of probability-weighted cash flow estimations, precludes accruing future operating losses prior to asset disposal, expands the scope of "discontinued operations" to include a component of an entity, and eliminates the current exemption to consolidation when control over a subsidiary is likely to be temporary. The Group intends to sell non core assets in 2002 and 2003. The possible financial impact of this standard is not yet known.

26C.RECONCILIATION OF SHAREHOLDERS' EQUITY AND NET INCOME TO U.S. GAAP

The following is a summary reconciliation of shareholders' equity as reported in the consolidated balance sheet to shareholders' equity as adjusted for the approximate effects of the application of U.S. GAAP for the period ended December 31, 2001, 2000 and 1999, and net income as reported in the consolidated statement of income to net income as adjusted for the approximate effects of the application of U.S. GAAP for the period ended December 31, 2001, 2000 and 1999 (in millions of euros).

	At December 31,		
	2001	2000	1999
Shareholders' equity as reported in the consolidated balance sheets	5,740.0	6,208.3	678.1
Adjustments to conform to U.S. GAAP:			
Goodwill (Gross)	(1,213.4)	687.4	1,369.4
Goodwill accumulated amortization	2,518.1	(134.4)	(96.7)
Dilution profit or capital gain/loss	16.5	17.0	—
Intangible assets (Gross)	(103.0)	(61.8)	(45.0)
Intangible assets amortization	(153.5)	(97.1)	(56.0)
Commitments to maintain and repair assets	189.1	349.8	282.8
Payments to local authorities	(166.1)	(168.0)	(167.0)
Reserves for restructuring liabilities	37.3	49.1	—
Other reserves	44.2	15.7	25.2
Treasury shares	(159.4)	(44.3)	—
Other financial instruments	79.7	36.3	(22.7)
Stock based compensation	(199.8)	(188.0)	(141.0)
Pension plans	(5.1)	(12.9)	8.1
Leases (property, plant & equipment)	0.4	(6.9)	2.8
Use of equity method	(38.5)	(20.0)	(5.0)
Others	16.4	(1.6)	(8.4)
Tax effect of above adjustments	177.8	(59.4)	(57.1)
U.S. GAAP Shareholders' Equity	6,780.7	6,569.2	1,767.5

	For the year ended at December 31,		
	2001	2000	1999
Net income as reported in the consolidated statements of income....	(2,251.2)	614.8	(42.3)
Adjustments to conform to U.S. GAAP:			
Goodwill amortization	2,481.3	(37.7)	(99.2)
Dilution profit or capital gain/loss	(15.6)	(22.5)	0.0
Intangible assets (Gross)	(9.7)	(24.1)	8.0
Intangible assets amortization	(47.9)	(41.1)	(27.0)
Commitments to maintain and repair assets	(43.8)	25.7	15.6
Payments to local authorities	2.0	(0.7)	(9.0)
Reserves for restructuring liabilities	(10.9)	49.1	0.0
Other reserves	(1.9)	(5.9)	(60.5)
Treasury shares	21.0	(8.4)	0.0
Other financial instruments	(84.5)	(71.6)	(50.2)
Stock based compensation	(19.3)	(47.0)	(113.9)
Pension plans	0.3	(5.7)	(4.6)
Leases (property, plant & equipment)	(1.1)	(0.2)	(0.5)
Use of equity method	(0.4)	(5.0)	(1.0)
Others	(6.2)	(0.6)	3.6
Tax effect of above adjustments	168.2	14.3	32.7
U.S. GAAP Net Income	180.3	433.4	(348.3)

Basic and Diluted Earnings Per Share

For U.S. GAAP purposes, basic earnings per share are computed in the same manner as basic earnings per share under French GAAP, *i.e.*, by dividing net income by the weighted average number of shares outstanding. Diluted earnings per share reflect the potential dilution that would occur if all securities and other contracts to issue ordinary shares were exercised or converted. Net income represents the earnings of the Group after minority interests. The computation of diluted earnings per share is as follows (except earnings per share, in millions of euros or millions of shares):

	At December 31,		
	2001	2000	1999
Net income (under U.S. GAAP)	180.3	433.4	(348.3)
Net income before cumulative effect of adoption of SFAS 133	174.3	—	—
Weighted average number of shares Outstanding—basic	343.8	275.1	218.2
Dilutive effect of:			
Shares issuable on exercise of dilutive options	0.5	0.2	0.0
Weighted average number of shares Outstanding—diluted	344.3	275.3	218.2
Earnings per share:			
Basic	0.52	1.58	(1.60)
Diluted	0.52	1.57	(1.60)
Earnings per share before cumulative effect of adoption of SFAS 133:			
Basic	0.51	—	—
Diluted	0.51	—	—

26D. PRESENTATION OF THE BALANCE SHEET AND INCOME STATEMENT IN U.S. GAAP FORMAT

For purposes of presenting consolidated condensed balance sheets and income statements in a format consistent with U.S. GAAP, the Group has reflected the financial statements impacts of the reconciling differences between French and U.S. GAAP presented in Note 26A. In addition, the joint ventures consolidated using the proportionate method under French GAAP are accounted for using the equity method under U.S. GAAP and all material reclassifications are reflected in the summarized balance sheet and the income statement presented using U.S. GAAP.

Net sales

Management contracts

Under its management contracts, the Group manages a public service for a fixed fee and an incentive calculated with reference to the performance of the contract.

Under French GAAP, billings to customers are recognized as revenue and the related costs are recognized as costs of sales. The difference between revenue and related costs represents the remuneration of the operator which consists of a fixed fee and incentive payments.

Under U.S. GAAP, only a fixed fee and incentive are recognized as revenue when the service is rendered.

This difference in accounting policy has no effect on net income or shareholders' equity. The impact on presentation is €784 million for 2001, €753 million for 2000 and €730 million for 1999.

Other Income

Until January 1, 2001, capital gains or losses on sales of consolidated entities or equity affiliates and related costs were considered for French GAAP purposes as exceptional income, and were classified for U.S. GAAP purposes as other income (loss). The Group recorded a gain in this category of €796.8 million for 2000 and a loss of €52.7 million in 1999.

Income Taxes

The difference in accounting policy between French GAAP and U.S. GAAP results in a presentation impact amounting to €107.0, €95.9 and €118.6 million in 2001, 2000 and 1999, respectively, on both gross deferred tax assets and the corresponding valuation allowance.

Income Statement in U.S. GAAP Format

(€ millions)	For the year ended at December 31, 2001 Adjusted US GAAP*	2001 US GAAP	2000 Adjusted US GAAP*	2000 US GAAP	1999 Adjusted US GAAP*	1999 US GAAP
Net Sales**	28,343.1	23,440.8	25,480.1	22,461.4	20,143.7	17,880.1
Cost of sales	(22,836.9)	(18,887.2)	(19,373.2)	(16,929.1)	(15,675.5)	(13,790.1)
Selling, general and administrative costs.	(3,588.4)	(3,096.7)	(4,248.4)	(3,937.3)	(2,862.6)	(2,662.4)
Goodwill amortization	(426.8)	(364.8)	(344.0)	(312.8)	(466.0)	(410.1)
Other operating expense and revenue ...	(56.4)	(58.9)	(296.7)	(378.9)	(458.0)	(459.5)
Operating income	1,434.6	1,033.2	1,217.8	903.3	681.6	558.0
Financial income (expense)	(901.7)	(733.3)	(1,010.6)	(886.0)	(669.9)	(644.3)
Other income (expense)	2.2	(5.4)	770.6	752.6	(49.8)	(54.4)
Net income before taxes, minority interests and equity interest	535.1	294.5	977.8	769.9	(38.1)	(140.7)
Taxes	(286.6)	(163.4)	(437.9)	(362.2)	(263.7)	(223.4)
Net income before minority interests and equity interest	254.5	137.1	539.9	407.7	(301.8)	(364.1)
Equity interest	47.6	69.2	55.0	83.5	37.5	35.1
Minority interest	(121.8)	(26.0)	(161.5)	(57.8)	(84.0)	(19.3)
Cumulative effect of adoption of SFAS 133	6.0	6.0				
Net income/(loss)	180.3	180.3	433.4	433.4	(348.3)	(348.3)

* These figures represent U.S. GAAP format after reconciling adjustments and reclassifications exclusive of those adjustments and reclassifications related to proportionate consolidation.

** Includes excise taxes and contributions collected on behalf of local authorities in an amount of €1,770 million for 2001, €1,729 million in 2000 and €1,635 million in 1999.

Balance Sheet in U.S. GAAP Format

(€ millions)	At December 31, 2001 Adjusted US GAAP*	2001 US GAAP	2000 Adjusted US GAAP*	2000 US GAAP	1999 Adjusted US GAAP*	1999 US GAAP
Current assets	18,361.9	15,656.5	14,273.9	12,104.3	18,580.6	15,953.1
Long-term assets	28,614.5	24,189.3	25,085.8	21,959.5	23,406.2	20,956.6
Total assets	46,976.4	39,845.8	39,359.7	34,063.8	41,986.8	36,909.7
Current liabilities	19,892.0	17,337.0	15,258.0	12,677.6	16,097.1	13,453.3
Long-term liabilities**	17,620.1	14,323.3	15,467.1	13,030.1	22,707.8	20,518.2
Minority interests	2,683.6	1,404.8	2,065.4	1,786.9	1,414.4	1,170.7
Shareholders' equity	6,780.7	6,780.7	6,569.2	6,569.2	1,767.5	1,767.5
Total liabilities and shareholders' equity	46,976.4	39,845.8	39,359.7	34,063.8	41,986.8	36,909.7

* These figures represent U.S. GAAP format after reconciling adjustments and reclassifications exclusive of those adjustments and reclassifications related to proportionate consolidation.

** Financial depreciation related to facilities (as described in accounting policies specific to environmental services activities) are accounted as liabilities under French GAAP and as a reduction of the carrying value of the related fixed assets under U.S. GAAP. This reclassification amounted to €632.4 million, €532.5 million and €486.3 million in 2001, 2000 and 1999, respectively.

26E. COMPREHENSIVE INCOME

The concept of comprehensive income does not exist under French GAAP. In U.S. GAAP, SFAS 130 "Reporting comprehensive income" defines comprehensive income to include, net of tax impact (in millions of euros):

- minimum pension liability adjustments (MLA),
- unrealized gains and losses on investment securities classified as "available for sale" including Vivendi Universal shares owned by the Group,
- foreign currency translation adjustments.

	Comprehensive income	Accumulated foreign translation	Accumulated unrealized gains (losses) on equity securities and hedging instruments	Minimum liability adjustments	Accumulated other comprehensive income
Net income 1998 (French GAAP)	162.0				
Foreign currency translation adjustments (French GAAP)	(66.5)				
Total	96.5				
Net income 1999 (U.S. GAAP)	(348.3)				
Other comprehensive income, net of tax (U.S. GAAP):					
Foreign currency translation adjustments	315.3				
Holding gains arising during the period on equity securities	7.6				
Deferred income taxes on holding gains on equity securities	(1.6)				
Reclassification adjustment (net of tax)	(25.9)				
Other comprehensive income	295.4				
Comprehensive income for the year ended December 31, 1999 (U.S. GAAP)	(52.9)	271.3	23.2		294.5
Net income 2000 (U.S. GAAP)	433.4				
Comprehensive income for the year ended December 31, 1999 (U.S. GAAP)	(52.9)	271.3	23.2	0.0	294.5
Net income 2000 (U.S. GAAP)	433.4				
Other comprehensive income 2000, net of tax (U.S. GAAP):	446.6				
Including :					
foreign currency translation adjustments	455.5	455.5			455.5
holding losses arising during the period on equity securities	(7.5)		(7.5)		(7.5)
deferred income taxes on holding losses on equity securities	1.8		1.8		1.8
reclassification adjustment (net of tax)	(3.2)		(3.2)		(3.2)
Comprehensive income for the year ended December 31, 2000 (U.S. GAAP)	880.0	726.8	14.3	0.0	741.1
Net income 2001 (U.S. GAAP)	180.3				
Other comprehensive income 2001, net of tax (U.S. GAAP):	291.4				
Including :					
foreign currency translation adjustments	323.2	323.2			323.2
holding losses arising during the period on equity securities	(6.7)		(6.7)		(6.7)
unrealized losses on hedging derivatives	(46.4)		(46.4)		(46.4)
deferred income taxes	19.3		19.3		19.3
MLA	2.0			2.0	2.0
Comprehensive income for the year ended December 31, 2001 (U.S. GAAP)	471.7	1,050.0	(19.5)	2.0	1,032.5

26F. STOCK BASED COMPENSATION

Vivendi Universal Stock Option Plans

Beginning in 1997, Vivendi Universal has adopted a series of stock option incentive plans pursuant to which options on its common shares are granted to certain directors and officers, including officers and directors of the Group. Vivendi Universal also maintains employee stock purchase plans that allow substantially all full-time employees of the Group and its subsidiaries to purchase shares of Vivendi Universal. The purpose of the stock option plans is to align the interest of management with the interest of shareholders by providing certain officers and other key employees with additional incentives to increase the company's performance on a long-term basis. Vivendi Universal has operated certain stock option plans including: the "classic" fixed plan, the senior management "fixed" plan and the senior management "variable" plan:

- Under the classic fixed plan, Vivendi Universal grants options at a strike price discounted to 12.5% to 20% from the fair value of the stock on the date of grant. These options are granted with a contractual life of 8 to 10 years and vest over a 5 year period from the date of the grant. Options have been granted under the classic plan each year since its inception.

- Under the senior management fixed plan, Vivendi Universal grants options to a limited number of senior managers with a strike price at a premium to the fair market value of the stock on the date of grant.

- Under the senior management variable plan, Vivendi Universal grants options to a limited number of senior managers. The number of options granted under the plan is measured twice over a 5-year vesting period. The first measurement is after three years, and the second is after five years. At each measurement date, the number of options to be granted is based on a formula that measures the performance of Vivendi Universal stock against the performance of a basket of peer companies. The options become immediately exercisable. If a participant leaves the company before either of the measurement dates, he forfeits eligibility for the awards.

In November 2000, Vivendi Universal granted ten stock options to each of its employees. The 2,203,140 options have been granted at an exercise price of €62.6, which represented a 20% discount from the market price of Vivendi Universal shares at the grant date. The options vested immediately but are exercisable only after a period of three years. In certain countries, stock appreciation rights have been granted in place of stock options for regulatory reasons.

There is no income tax deduction associated with stock options under French law.

No compensation expense has been recorded in connection with stock options granted by Vivendi Universal under French GAAP. Under U.S. GAAP, the compensation expense recorded by the company is €4.6 million, €2.0 million and €35.7 million for years ended 31 December 2001, 2000 and 1999 respectively.

Information relating to Vivendi Universal stock options granted during 2001, 2000 and 1999 is summarized as follows:

	Weighted average	Total
December 31, 1998	33.1	3,494,357
Granted	69.5	4,301,277
Exercised	22.2	(862,593)
Forfeited	50.5	(12,067)
December 31, 1999	52.8	6,920,974
Granted	82.7	1,185,000
Exercised	21.7	(365,270)
Forfeited	57.5	(32,971)
December 31, 2000	60.7	7,707,733
Granted	48.2	175,000
Exercised	23.0	(133,383)
Forfeited	24.4	(65,945)
Transfer of personnel	67.3	197,281
December 31, 2001	61.9	7,880,686

At December 31, 2001, 2000 and 1999 456,423, 1,492,095, 1,418,502 the total number of options exercisable were with weighted average exercise prices of €31.3, €33.1 and €24.9 per share, respectively. The options outstanding at December 31, 2001 expire in various years through 2009.

In 2000 and 2001, Vivendi Universal granted 25,000 options on its ADS to its American employees at a exercise price varying between USD 44 and USD 65. The options vest by a third each year over a three-year period.

Vivendi Environnement stock option plans

The Group granted on June 23, 2000, 780,000 options on its common shares to certain directors and officers. Under this plan, the number of exercisable options is based on a formula that measures the performance of Vivendi Environnement stock against the performance of a basket of peer companies. The exercise price is €32.5 and the maturity is 8 years.

In 2001, the Group granted 3,462,000 options on its common shares to a range of employees. The exercise price and the maturity are respectively €42 and 8 years. These options vest over a period of 3 years.

Information relating to options to purchase the Group's shares granted during 2001 and 2000 is summarized as follows:

	Number of shares Outstanding	Number of shares Exercisable	Weighted average Exercise price (in euros)
December 31, 1999	—	—	—
Granted	780,000	—	32.50
Exercised	—	—	—
Forfeited	—	—	—
Expired	—	—	—
December 31, 2000	780,000	—	32.50
Granted	3,462,000	—	42.00
Exercised	(10,000)	—	32.50
Forfeited	—	—	—
Expired	—	—	—
December 31, 2001	4,232,000	—	40.27

No compensation expense has been recorded in connection with stock options granted by Vivendi Environnement under French GAAP. Under U.S. GAAP, the compensation expense recorded by the Group was €0.9 million and €1.9 million for the year ended December 31, 2001 and 2000 respectively .

Information about Vivendi Universal stock options outstanding at December 31, 2001 is summarized as follows:

Exercise price	Number outstanding	Average exercise price (in euros)	Average remaining life (in years)	Number vested
<20	114,784	19.31	0.83	114,784
20-40	751,665	27.84	3.22	261,639
40-60	1,391,961	50.07	4.36	—
60-70	2,908,265	63.54	5.69	—
70-80	1,702,786	73.80	5.56	80,000
>80	1,011,225	83.74	6.33	—
	7,880,686	61.90	3.59	456,423

For the stock option plans adopted prior to January 1, 1998, Vivendi Universal intends to settle options through the issuance of new shares. For stock options plans adopted in 1998 and later, Vivendi Universal intends to

settle options with treasury shares. As of December 31, 2000 and 1999, Vivendi Universal has designated approximately 5.5 million and 1.8 million treasury shares, respectively, to settle its potential obligations under stock option plans.

Employee Stock Purchase Plans

Vivendi Universal maintains savings plans that allow substantially all full time employees of Vivendi Universal and its subsidiaries to purchase shares of Vivendi Universal. The shares are sold to employees at a discount of 20% from the average market price of Vivendi Universal stock over the last 20 business days prior to the date of authorization by the management committee. From January 1, 2001 the exercise price of the shares is defined as the maximum of the average market price of Vivendi Universal stock over the last 20 business days at a discount of 20% price and the price on the day of the board of Directors meeting discounted by 15%. Shares purchased by employees under these plans are subject to certain restrictions over the sale or transfer of the shares by employees.

Vivendi Universal shares sold to employees of Vivendi Environnement were as follows:

	2001	2000	1999
Number of shares	1,682,690	1,509,622	3,782,701
Proceeds on sales (in millions of euros)	88.4	111.4	253.9
Average cost of treasury sales (in euros)	52.5	75.8	67.1

Under French GAAP, no compensation expense is recorded in connection with employee stock purchase plans.

Under U.S. GAAP, the compensation cost recorded by the Group for years ended December 31, 2001, 2000 and 1999 is respectively €13.8 million, €43.1 million and €78.2 million.

Vivendi Universal applies the intrinsic value method to account for compensation cost associated with options granted to employees. In accordance with French GAAP, the Group has not recorded compensation expense on options granted with a discounted strike price up to 20% from the fair value of shares at the date of grant. Had compensation cost for stock options awarded under these plans been determined based on the fair value at the dates of grant consistent with the methodology of SFAS 123, Vivendi Environnement's net income and basic earnings per share would have reflected the following pro forma amounts (in millions of euros):

	At December 31,		
	2001	2000	1999
Pro forma net income (loss)	129.6	419.5	(371.0)
Pro forma basic earnings per share	0.38	1.52	(1.70)

The fair value of Vivendi Universal grant is estimated on the date of grant using the Binomial option pricing model with the following assumptions for the grants:

Vivendi Universal	2001	2000	1999
Expected life (in years)	7.80	7.90	6.53
Interest rate	4.99%	4.80%	4.56%
Volatility	40.00%	35.00%	6.51%
Dividend yield	1.00%	1.00%	1.14%

The weighted average grant date fair value for Vivendi Universal options granted during 2001, 2000 and 1999 were €23.1, €26.1, €24.7 per share, respectively.

In 2001, the Group assumed a volatility of 30%, an interest rate of 4.9%, a dividend yield of 1%. In 2000, the fair value of Vivendi Environnement options were estimated on the date of grant using the minimum value method, as no reliable data was available to estimate volatility, as Vivendi Environnement was listed only after July 20, 2000. The average fair value of Vivendi Environnement options granted in 2001 and 2000 was €16 and €6.67 respectively.

26G. PENSION PLAN AND OTHER COST RETIREMENT BENEFITS OTHER THAN PENSION PLANS

Disclosures, presented in accordance with SFAS 132, are as follows (in millions of euros):

	Pension Benefits			Other Benefits		
	2001	2000	1999	2001	2000	1999
Change in benefit obligation						
Benefit obligation at beginning of year	1,085.0	983.8	795.8	8.3	7.4	9.0
Service cost	51.5	46.8	50.5	—	0.1	0.1
Interest cost	48.7	60.6	57.5	—	0.4	0.4
Plan participant contributions	6.6	10.7	9.9	—	—	—
Business combinations	5.1	11.4	24.7	—	—	—
Disposal	(239.5)	(5.7)	(4.2)	(1.6)	—	—
Curtailments	(1.3)	(2.2)	—	(6.7)	—	—
Actuarial loss (gain)	(16.7)	22.1	1.9	—	1.0	(1.5)
Benefits paid	(28.2)	(41.3)	(37.6)	—	(0.7)	(0.7)
Special termination benefits	1.8	—	—	—	—	—
Others (foreign currency translation)	15.0	(1.2)	85.3	—	0.1	0.1
Benefit obligation at end of year	927.9	1,085.0	983.8	—	8.3	7.4
Change in plan assets						
Fair value of plan assets at beginning of year	1,258.7	1,278.4	957.0	—	—	—
Actual return on plan assets	(57.2)	(15.6)	195.8	—	—	—
Group contributions	17.8	23.4	20.9	—	—	—
Plan participant contributions	6.6	10.7	9.9	—	—	—
Acquisitions	0.3	1.3	3.3	—	—	—
Disposal	(314.9)	(0.1)	(2.0)	—	—	—
Curtailments	—	(2.7)	—	—	—	—
Benefits paid	(26.7)	(32.4)	(37.6)	—	—	—
Others (foreign currency translation)	18.2	(4.3)	131.1	—	—	—
Fair value of plan assets at end of year	902.7	1,258.7	1,278.4	—	—	—
Funded status of plan	(25.2)	173.7	294.6	—	(8.3)	(7.4)
Unrecognized actuarial loss	131.6	(11.3)	(150.1)	—	(0.6)	(1.6)
Unrecognized actuarial prior service costs	(74.9)	(141.1)	(153.6)	—	—	—
Unrecognized actuarial transition obligation	(16.1)	(17.9)	(20.4)	—	—	—
Others	(38.0)	(45.2)	(24.9)	—	—	—
Accrued benefit cost	(22.6)	(41.8)	(54.4)	—	(8.9)	(9.0)

Prepaid arising from multi-employer plans overtime (activities under lease contract) are written off since there are serious doubts that they could be recoverable through future contribution holidays.

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for the pension plans with accumulated benefit obligation in excess of plan assets were €226.1 million, €47.2 million and €194.0 million as of December 31, 2001, €138.5 million, €97.7 million and €37.4 million as of December 31, 2000 and €101.3 million, €76.7 million and €29.8 million as of December 31, 1999.

Amounts recognized in the balance sheets consist of (in millions of euros):

	Pension Benefits			Other Benefits		
	2001	2000	1999	2001	2000	1999
Accrued benefit liability (including MLA)	(157.2)	(157.8)	(154.9)	—	(8.8)	(9.0)
Prepaid benefit cost	132.6	115.4	99.8	—	—	—
Net amount accrued for under U.S. GAAP	(24.6)	(42.4)	(55.1)	—	(8.8)	(9.0)
Intangible assets (MLA)(a)	2.0	0.6	0.7	—	—	—
Net amount recognized under U.S. GAAP	(22.6)	(41.8)	(54.4)	—	(8.8)	(9.0)

(a) Adjustment for U.S. GAAP purpose: the benefit liability accrued under U.S. GAAP has to be the minimum between the accumulated benefit obligation net of fair value of plan assets and the net amount recognized under U.S. GAAP.

Net accruals in the accompanying consolidated balance sheet can be compared with balances determined under U.S. GAAP as follows (in millions of euros):

	Pension Benefits			Other Benefits		
	2001	2000	1999	2001	2000	1999
Net amount accrued for under U.S. GAAP	(24.6)	(42.4)	(55.1)	—	(8.8)	(9.0)
Excess funding of plans recognized in income only when paid back to the Group	—	—	—	—	—	—
Impacts of transition obligation, of prior service cost and of actuarial gains recognized with a different timing under local regulations	(73.0)	(0.8)	(35.8)	(1.6)	(0.6)	—
Minimum liability adjustments (MLA)	2.0	0.6	0.7	—	—	—
Net amount accrued for under French GAAP in the accompanying consolidated balance sheet	(95.6)	(42.7)	(90.2)	(1.6)	(9.4)	(9.0)
Accrued	(228.2)	(158.1)	(157.1)	(1.6)	(9.4)	(9.0)
Prepaid	132.6	115.4	66.9	—	—	—

Net periodic cost under U.S. GAAP was as follows (in millions of euros):

	Pension Benefits			Other Benefits		
	2001	2000	1999	2001	2000	1999
Service cost	51.5	46.8	50.5	—	0.1	0.1
Expected interest cost	48.7	60.6	57.5	—	0.4	0.4
Expected return on plan assets	(69.1)	(88.7)	(79.2)	—	—	—
Amortization of unrecognized prior service cost	(8.5)	(8.7)	(12.1)	—	—	—
Amortization of actuarial net loss (gain)	8.0	(13.1)	1.4	—	(0.1)	—
Amortization of net transition obligation	(5.4)	(2.4)	(2.8)	—	—	—
Curtailments/Settlements	(2.4)	0.5	—	(6.7)	—	—
Others	7.1	20.3	—	—	—	—
Net periodic benefit cost under U.S. GAAP	29.8	15.3	23.5	(6.7)	0.4	0.5

Weighted-average assumptions as of December 31 are as follows (in millions of euros):

	Pension Benefits			Other Benefits		
	2001	2000	1999	2001	2000	1999
Discount rate	5.6%	5.8%	5.5%	—	5.4%	5.2%
Expected return on plan assets	7.0%	7.4%	7.4%	—	6.4%	6.0%
Expected residual active life (in years)	13.7	13.4	13.8	—	14.6	15.0

26H. RESTRUCTURING COSTS

Provisions for restructuring by segment details as follows (in millions of euros):

	Dec.31, 1998	Change in scope of consolidation	Additions charged to operating income	Utilization	Reversal	Dec.31, 1999	Change in scope of consolidation	Additions charged to operating income	Utilization	Reversal	Dec.31, 2000	Change in scope of consolidation	Additions charged to operating income	Utilization	Reversal	Dec.31, 2001
Water																
Other activities	24.2	—	15.9	(14.3)	—	25.8	—	—	(25.8)	—	—	19.2	—	(12.3)	—	6.9
Other restructuring costs	24.2	—	15.9	(14.3)		25.8			(25.8)		—					—
Employee termination costs	—					—					—	19.2		(12.3)		6.9
United States Filter Corporation	—	46.0	12.9	(12.1)	—	46.8	10.8	—	(16.6)	—	41.0	1.6	18.7	(27.8)	—	33.5
Employee termination costs		9.1	0.5	(2.2)		7.4			(6.1)		1.3	—	17.6	(5.6)	—	13.3
Lease termination costs		19.9		(9.1)		10.8	3.6		(5.5)		8.9	—	—	(6.6)	—	2.3
Other restructuring costs		17.0	12.4	(0.8)		28.6	7.2		(5.0)		30.8	1.6	1.1	(15.6)	—	17.9
USFI—Benelux	—	31.2	—	—	—	31.2	6.4	—	—	—	37.6	—	—	(13.8)	—	23.8
Employee termination costs		29.0				29.0					29.0			(12.8)		16.2
Lease termination costs and other costs		2.2				2.2	6.4				8.6			(1.0)		7.6
USFI-Other locations	—	32.1	—	(19.5)	—	12.6	—	—	(9.6)	—	3.0	—	—	(3.0)	—	—
Employee termination costs		16.1		(9.6)		6.5			(3.5)		3.0			(3.0)		—
Other restructuring costs		16.0		(9.9)		6.1			(6.1)		—					—
Energy																
Employee termination costs	10.8			(5.5)		5.3			(5.3)		—	4.9	—	—	—	4.9
Waste Management	2.1					4.1			(2.5)		1.6	—	7.3	(1.1)	—	7.8
Employee termination costs	2.1		2.0			4.1			(2.5)		1.6		0.6	(1.1)		1.1
Other restructuring costs													6.7			6.7
Transportation																
Other restructuring costs	1.2			(0.3)		0.9		0.4	(0.3)		1.0	—	0.8	(1.0)	—	0.8
Total	38.3	109.3	30.8	(51.7)	—	126.7	17.2	0.4	(60.1)	—	84.2	25.7	26.8	(59.0)	—	77.7

Over the past few years, the Group has engaged in several plans to restructure its activities, especially to rationalize its regional organization. In 1997, the Group implemented a three-year restructuring plan associated with its water businesses in France. This plan resulted in the closure of approximately 20 regional agencies and 200 local units and was completed in 2000.

The Group acquired United States Filter Corporation in April 1999 and performed several actions to merge it with its existing water operations, most of which did not impact the income statement since they were recorded as a component of the purchase price of acquired companies.

In 2001, with the entry of the ex-services division of EDF, Dalkia implemented several restructuring plans to integrate these companies with its existing operations, since they are recorded as a component of the purchase price they have no effect on the income statement. Total restructuring costs are €4.9 million, principally for the termination of a total of 80 employees of whom 42 are professional.

Onyx as part of a program to reduce its overhead costs has implemented a reorganization of its IT services, the total cost of which is €7.3 million, of which €0.6 million relates to severance costs and €6.7 to other restructuring costs.

Water

Concurrently with the acquisition of United States Filter Corporation, the Group designed and implemented a restructuring plan to streamline its manufacturing and production base, redesign its distribution network, improve its efficiency and enhance its competitiveness. Immediately after the consummation of the transaction, the Group established an Integration Committee consisting of various representatives from Generale des Eaux and United States Filter Corporation. By the end of May 1999, the working groups defined by the Integration Committee were formed and their objectives assigned. In mid-September 1999, the plans and recommendations of the Integration Committee were presented to the Group's management for approval. On September 20, 1999, the new organization and integration plan was communicated to senior management of Vivendi Water at a meeting in Berlin, Germany. From September 1999 through March 2000 the termination and relocation arrangements were communicated to impacted employees of United States Filter Corporation.

The restructuring plan focused on two primary activities: (i) the combination of certain United States Filter Corporation operating groups outside the United States with OTV and (ii) the combination and restructuring of the remaining United States Filter Corporation entities (primarily in North America) with the operations of PSG, a subsidiary of Aqua Alliance. These restructuring plans identified certain manufacturing facilities, distribution sites, sales and administrative offices and related assets that became redundant or non-strategic upon consummation of the transaction. The costs associated with these plans totaled €109.3 million, of which €63.3 million related to the combination with OTV and €46.0 million related to the North American combination. These costs are reflected in "Purchase accounting adjustments" and were included in the acquisition cost allocation for United States Filter Corporation (including USF International).

United States Filter Corporation International was combined with OTV to create Vivendi Water Systems. This combination was achieved through several restructuring plans, the most significant of which is in Benelux. This plan involves the closure or sale of three facilities and the significant down-sizing of a fourth. It will result in the severance of 221 employees (including 23 executive employees) for a total amount of €29.0 million. Associated costs amount to €7.6 million as of December 31, 2001, consisting of lease termination costs of €6.3 million and other related charges of €1.3 million.

This plan is expected to extend until the beginning of 2002 due to significant legal constraints requiring long termination periods. No employee had been terminated as of December 31, 2000,during 2001, 17 employees were terminated including 8 executives for a total cost of €12.8 million. Plans related to the other locations involved severance costs of €9.6 million in 1999 in connection with the termination of 81 employees and €3.5 million in 2000 in connection with the termination of 36 employees. The remaining reserve of €3.0 million was utilized in 2001 with the termination of 5 senior executives included in a total of approximately 30 terminated employees. Other restructuring costs include lease termination costs, relocation costs and other costs to exit facilities. Additions in 2000 were recorded as adjustments of the cost of USF International and had thus no impact on the net income for the period. These amounts are reflected in "Purchase accounting adjustments."

The North American restructuring plan had total costs of €46 million, originally consisting of €9.1 million in severance and employee termination costs related to a reduction in the combined workforce of 443 employees (66 management employees, 111 administrative employees, 234 manufacturing employees and 32 sales employees). The restructuring plan also included €36.9 million of facility exit costs, consisting of lease termination costs of €19.9 million and other related charges of €17.0 million (primarily pension termination accruals). The restructuring plan involved the closure of four manufacturing facilities in United States Filter Corporation's water and wastewater group. Within United States Filter Corporation's consumer group, the plan identified the closure of one manufacturing facility, one distribution facility and numerous company-owned dealerships. In addition, the plan identified two additional manufacturing sites and several distribution centers for the remaining United States Filter Corporation operating groups. During 1999, the Group incurred costs of €12.1 million in connection with the plan, including €2.2 million in severance payments in connection with the termination of approximately 141 employees. As of December 31, 1999, a total accrual of €33.9 million remained. In addition, PSG was combined with United States Filter Corporation on January 1, 2000, and, as a result, €12.9 million of preexisting PSG accruals were added to the North American restructuring plan. The €12.9 million addition was recorded by PSG in 1999, and was included in the accompanying statement of income for the year ended December 31, 1999. This reserve is reflected in the addition for United States Filter Corporation in 1999.

During January 2000, additional accrued liabilities of €10.8 million were recorded to complete the North American restructuring plan, including €3.6 million of lease termination costs and €7.2 million of other related charges. During 2000, the Group incurred costs of €16.6 million in connection with the plan, including €6.1 million in severance payments in connection with the termination of approximately 250 employees. During 2001, the Group incurred costs of €23.5 million, including €1.3 million in severance payments in connection with the termination of approximately 52 employees. As of December 31, 2001, €17.5 million remained, consisting primarily of lease terminations with extended payment terms and pension termination benefits that will be paid to participants upon settlement of the related plans. Additions through "purchase accounting adjustments" in 2000 result from the revision of the calculation of liabilities recorded as of December 31, 1999, which was performed in the first quarter of 2000. The Group did not identify new actions to be taken that would result in additional liabilities.

In addition to these plans related to acquired companies, the Group implemented restructuring measures in its historical subsidiaries. The Group's 1999 income statement includes a €11 million provision, consisting of €6 million in connection with the closing of Aqua Alliance's headquarters and €5 million in connection with the consolidation of facilities in subsidiaries of OTV. These costs, which were related to lease terminations and asset disposals, were incurred in 2000.

Due to the continued decline in North America, the United States Filter Corporation initiated a restructuring program to reduce headcount and consolidate its manufacturing capacity. Under this restructuring plan costs of €18.7 million where recorded in 2001. As of 31 December 2001, the Group has accrued €14.4 million under the restructuring plan. The plan calls for the termination of 696 employees of whom 264 are professionals, in 2001, 142 employees were terminated under this plan. The Group has combined 5 surface preparation regional headquarters into 2 service centers and closed 5 manufactory facilities and an after-market facility. In response to the business conditions identified regeneration plants were identified for closure and the Group exited the copper etchant recovery business.

With the entry of Apa Nova Bucuresti, the Group initiated a restructuring plan, the restructuring costs totaled €19.2 million, and are primarily for severance costs. This plans covers the termination of 1 700 employees of whom 85 are professionals, at the end of 2001, 1 200 employees had been terminated for a total cost of €12.3 million.

Reconciliation to French GAAP disclosure

The only reconciling item to the total balance at December 31, 2000 is €49.7 million in accruals that qualify as restructuring costs under French GAAP but not under U.S. GAAP (although they are U.S. GAAP-compliant under SFAS 5 as probable and estimable liabilities and would be classified as reserves for contingent liabilities). Because this is only a reclassification, there is no corresponding entry in Note 26B, for either in net income or in shareholders' equity. By the end of 2001, this amount had increased to €57.9 million.

The other reconciling item at December 31, 2000 amounts to €49.1 million, recorded as an expense in the 2000 income statement, which does not comply with the provisions of EITF 94-3 or SFAS 5. This amount appears in

Note 26B on the "Reserves for restructuring liabilities" line of both equity and net income reconciliation. It includes €45 million of reorganization costs related to our headquarters. This amount had been reduced to €37.3 million by the end of 2001.

26I. OTHER FINANCIAL INSTRUMENTS

The significant components of the "other" financial instruments are as follows:

	Net Income			Shareholders' Equity		
(€ millions)	**2001**	**2000**	**1999**	**2001**	**2000**	**1999**
Variation of the fair value of the FCC put*	12.8	71.4	(84.5)	(0.3)	(13.1)	(84.5)
Marketable securities**	4.6	29.6	34.3	72.5	82.5	63.9
Derivative instruments and hedges***	(87.1)	—	—	(130.9)	—	—
Accrual of convertible bonds redemption premium	(15.1)	(30.2)	—	(45.3)	(30.2)	—
Convertible bonds beneficial conversion feature	—	(142.5)	—	—	—	—
stock warrantes issued	—	—	—	180.0	—	—
Others	0.3	0.1	0.0	3.6	(2.9)	(2.1)
Total	(84.5)	(71.6)	(50.2)	79.7	36.3	(22.7)

* Described in note 23.

** Vinci shares are trading securities.

*** Implementation of SFAS No.133 "Accounting of derivative instruments and hedging activities".

These differences are described in note 26A.

ITEM 19: EXHIBITS

The following exhibits are included herein:

Exhibit Number	Description
1	*Statuts* (bylaws) of Vivendi Environnement (unofficial English translation).
2(b)	We agree to furnish a copy of an English translation of the prospectus defining the terms and conditions of our 1.5% convertible bonds due 2005 to the SEC upon its request.
4(a)	Master Agreement, dated December 4, 2000, between Vivendi Environnement and Electricite de France, in the presence of Vivendi (the "Master Agreement").*
4(b)	Annex 2.04(a) to the Master Agreement–Partners' Agreement between Vivendi Environnement and Electricite de France.*
4(c)	Annex 2.08 to the Master Agreement–Call Option Agreement between Vivendi Environnement and Electricite de France and Put Option Agreement between Vivendi Environnement and Electricite de France.*
8	List of Subsidiaries. Included herein in Note 25 to our financial statements.
10	Letter from Vivendi Environnement to the SEC concerning representations provided by Barbier Frinault & Cie. (a Member of Andersen Worldwide) to Vivendi Environnement regarding its audit quality control system.

* Previously filed as exhibits to Registration Statement on Form 20-F filed with the U.S. Securities and Exchange Commission on September 26, 2001.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

Dated: May 24, 2002

VIVENDI ENVIRONNEMENT

By: /s/ Jérôme Contamine

Name: Jérôme Contamine
Title: Executive Vice President, Finance

Exhibit C

Final Version of Appendix 6 to the Lease Agreement

APPENDIX 6

ICI MILESTONE PAYMENTS AND MAXIMUM DRAWDOWN SCHEDULES

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APPENDIX 6

MILESTONE PAYMENT AND MAXIMUM DRAWDOWN SCHEDULES

Subject to the provisions of Section 10.5 of the Lease Agreement, the Lessee shall be entitled to progress payments consistent with the completion of milestones related to each of the Initial Capital Improvements as defined in this Appendix 6. This Appendix 6 contains the milestones and associated percentages to be used to determine the amount to which the Lessee is entitled regarding the design, construction and acceptance of the Initial Capital Improvements. The milestones relate to completion of an activity; no payments for partial completion of each milestone will be made.

In the event that Advancement Work does not occur, the schedules for Advancement Work detailed below will be incorporated into the schedules for Commencement Work with all dates and associated costs remaining valid with the exception that the Advancement Work dates will be from the Commencement Date rather that the Advancement Work Commencement Date.

1.0 SLUDGE CAKE HANDLING SYSTEM

Table 6-1-1
Advancement Work

Milestone Description	Projected Number of Days from Advancement Work Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Submittal of Preliminary Design (P&ID's and Layouts)	30	5	5	101,896	101,896
Equipment List and Specs	60	5	10	101,896	203,792
Place Equipment Order	120	10	25	203,792	407,584

Table 6-1-2
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Submittal of Final Design	90	5	30	103,684	511,267
Delivery of Pumps & Conveyors	150	10	35	205,580	716,847
Pour Lean Slab	210	10	45	205,580	922,427
Delivery of Silo & Hopper	225	15	60	307,476	1,229,902
Pour Walls & Foundations	240	10	70	205,580	1,435,482
Silo & Hopper Installed	300	10	80	205,580	1,641,061
Complete Electrical Hook-up	420	10	90	205,580	1,846,641
Substantial Completion	540	8	98	164,821	2,011,462
Commission & Accept ICI	820	2	100	42,546	2,054,008
Total		100			

2.0 INCINERATION SCADA SYSTEM

Table 6-2-1
Advancement Work

Milestone Description	Projected Number of Days from Advancement Work Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Submit Preliminary Design & Description	60	10	10	92,900	92,900
System Final Description and Place Order	120	10	20	92,900	185,800

Table 6-2-2
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Electrical System Design Submittal	210	10	30	94,688	280,488
Deliver 300 KW Generator	330	10	40	94,688	375,175
Deliver MCC	360	10	50	94,688	469,863
Terminate Cable	390	10	60	94,688	564,551
SCADA Factory Test	450	10	70	94,688	659,238
Complete Installation Electrical Checkout	510	10	80	94,688	753,926
Substantial Completion	570	10	90	94,688	848,614
Commission SCADA System	600	5	95	48,238	896,851
SCADA Acceptance	820	5	100	48,238	945,089
Total		100		945,089	

3.0 FLUIDIZED BED INCINERATOR

Table 6-3-1
Advancement Work

Milestone Description	Projected Number of Days from Advancement Work Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Submittal of Incinerator Preliminary Engineering, Specs and Layouts	30	5	5	573,929	573,929
Place Equipment Order and Issue Foundation Design	120	10	20	1,147,858	1,721,787

Table 6-3-2
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Submittal of Final Design and Specs. (P&ID's and Layouts)	90	5	20	575,717	2,297,504
Pour Incinerator PIT Walls	240	15	35	1,723,575	4,021,078
Install Incinerator Shell	300	10	45	1,149,646	5,170,724
Start Inst. Refractory Lining	360	10	55	1,149,646	6,320,370
Remove Existing I.D. Fan	510	10	65	1,149,646	7,470,015
Install New I.D. Fan	540	5	70	575,717	8,045,732
Set Heat Recovery System on Foundation	540	5	75	575,717	8,621,449
Start Testing	570	5	80	575,717	9,197,165
Substantial Completion & Commission FBI	600	10	90	1,149,646	10,346,811
FBI in Service	630	5	95	575,717	10,922,528
Acceptance FBI ICI	820	5	100	575,717	11,498,244
Total		100		11,498,244	

4.0 INSTALL CENTRIFUGES/REPLACE BELT FILTERS

Table 6-4-1
Advancement Work

Milestone Description	Projected Number of Days from Advancement Work Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Preliminary Design & Equipment List (P&ID's & Layouts)	30	10	10	103,408	103,408
Place Centrifuge Order	90	10	20	103,408	206,816

Table 6-4-2
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Centrifuge Delivery	270	30	50	312,011	518,827
Centrifuges Set on Supports	330	20	70	208,603	727,431
Test Run Centrifuges	360	5	75	53,492	780,922
Feed Piping & Sludge Transfer Piping Installed	390	10	85	105,196	886,118
Substantial Completion	420	10	95	105,196	991,313
Commission & Accept Centrifuges	820	5	100	53,492	1,044,805
Total		100		1,044,805	

5.0 SLUDGE DRYER SYSTEM

Table 6-5-1
Advancement Work

Milestone Description	Projected Number of Days from Advancement Work Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Preliminary Design Submitted (P&IDs, Equipment Specs and Layout)	60	10	10	125,359	125,359
Place Order for Dryer	90	10	20	125,359	250,717

Table 6-5-2
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Move Existing Equip Out of Garage	150	10	30	127,146	377,864
Pour Lean Slab in Basement	200	10	40	127,146	505,010
Delivery of Dryer	270	20	60	252,505	757,515
Mechanically Set Dryer	300	10	70	127,146	884,662
Install Sludge Pump at Dryer Discharge	360	5	75	64,467	949,129
Install Piping	420	10	85	127,146	1,076,275
Substantial Completion	600	10	95	127,146	1,203,421
Commission & Accept Dryer	820	5	100	64,467	1,267,888
Total		100		1,267,888	

6.0 ODOR CONTROL

Table 6-6-1
Commencement Date Work

Milestone Description	Projected Number of Days from Commencement Date	Drawdown Percentage of Fixed ICI Design/Build Price	Cumulative Drawdown Percentage of Fixed ICI Design/Build Price	Maximum Dollar Drawdown of Fixed ICI Design/Build Price	Maximum Cumulative Dollar Drawdown of Fixed ICI Design/Build Price
Preliminary Engineering and Equipment Specs	30	10	10	26,388	26,388
Place Order for Air Make-up Unit	90	10	20	26,388	52,775
Receive Air Make-up Unit	210	20	40	50,988	103,763
Install Pressure Relief Dampers	450	15	55	38,688	142,451
Install Air Make-up Unit	480	20	75	50,988	193,438
Tie Duct Work to FBI Air Intake	540	10	85	26,388	219,826
Substantial Completion	660	10	95	26,388	246,214
Commission & Accept Odor Control	820	5	100	14,088	260,301
Total		100		260,301	

See Contract Amendment No. 2

Exhibit D

Certificates of Required Lessor Insurance

ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Factory Mutual Insurance Company 21482-003
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				EACH OCCURRENCE	$
	COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$
	CLAIMS MADE OCCUR				MED EXP (Any one person)	$
					PERSONAL & ADV INJURY	$
					GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$
	POLICY PRO-JECT LOC					
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO					
	ALL OWNED AUTOS				BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
	HIRED AUTOS				BODILY INJURY (Per accident)	$
	NON-OWNED AUTOS					
					PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	OCCUR CLAIMS MADE				AGGREGATE	$
						$
	DEDUCTIBLE					$
	RETENTION $					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS OTH-ER	
					E.L. EACH ACCIDENT	$
					E.L. DISEASE - EA EMPLOYEE	$
					E.L. DISEASE - POLICY LIMIT	$
A	OTHER Commercial Property	UA941	3/1/2002	3/1/2003	ALL RISK coverage - with respects the subject property shown below	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Re: Borough of Naugatuck, CT Incineration Facilities Lease Agreement. Subject property is the "Incineration Facilities" and "Incineration Facilities Site" located at 500 Cherry Street, Naugatuck, CT 06770.

Commercial Property coverage is in an amount equal to the full replacement value thereof in the amount of $20,360,748 plus Business Interruption coverage in the amount of $20,000,000, making the total insurable value of said property, $40,360,748. Subject to all policy terms, conditions,

CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: ___

Borough of Naugatuck, CT
and Water Pollution Control Authority
of the Borough of Naugatuck
229 Church Street
Naugatuck, CT 06770

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE David M Liner

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Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

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INSURERS AFFORDING COVERAGE

INSURED
Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A:	Factory Mutual Insurance Company	21482-003
INSURER B:		
INSURER C:		
INSURER D:		
INSURER E:		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

limitations and exclusions, this policy provices "All Risk" perils including mechanical breakdown, electrical injury, flood, earth movement and collapse, except collapse emanating from faulty or defective design, materials or workmanship. (This exclusion only applies to the cost to repair/replace such property as is found to be faulty or defective and does not apply to resultant damage to otherwise sound property.)
The base all other perils deductible under the commercial property policy is $250,000. per occurrence. Deductibles for catastrophic perils (flood, earth movement) may vary.

The Borough of Naugatuck, CT and the Water Pollution Control Authority of the Borough of Naugatuck (WPCA), shall be Named Insureds under the Property policy with respect to the subject property as their interests may appear.
Naugatuck IFP Statutory Trust, S.T. and Wells Fargo Bank Minnesota, National Association as trustee under that certain Trust Agreement dated as of August 1, 2002 shall be "Loss Payees" with respect to the subject property as their interests may appear.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE 08/16/2002

PRODUCER 877-945-7378

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INSURERS AFFORDING COVERAGE

INSURED
Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Factory Mutual Insurance Company 21482-003
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				EACH OCCURRENCE	$
	COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$
	CLAIMS MADE OCCUR				MED EXP (Any one person)	$
					PERSONAL & ADV INJURY	$
					GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$
	POLICY PRO-JECT LOC					
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO					
	ALL OWNED AUTOS				BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
	HIRED AUTOS				BODILY INJURY (Per accident)	$
	NON-OWNED AUTOS					
					PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	OCCUR CLAIMS MADE				AGGREGATE	$
						$
	DEDUCTIBLE					$
	RETENTION $					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS OTH-ER	
					E.L. EACH ACCIDENT	$
					E.L. DISEASE - EA EMPLOYEE	$
					E.L. DISEASE - POLICY LIMIT	$
A	OTHER Commercial Property	UA941	3/1/2002	3/1/2003	ALL RISK coverage - with respects the subject property shown below	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Re: Borough of Naugatuck, CT Incineration Facilities Lease Agreement. Subject property is the "Incineration Facilities" and "Incineration Facilities Site" located at 500 Cherry Street, Naugatuck, CT 06770.

Commercial Property coverage is in an amount equal to the full replacement value thereof in the amount of $20,360,748 plus Business Interruption coverage in the amount of $20,000,000, making the total insurable value of said property, $40,360,748. Subject to all policy terms, conditions,

CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: ___

Naugatuck IFP Statutory Trust, S.T.
and Wells Fargo Bank Minnesota, National Association as Trustee

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE David M Lorer

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Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3

DATE 08/16/2002

PRODUCER 877-945-7378

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Nashville, TN 372305191

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INSURERS AFFORDING COVERAGE

INSURED Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Factory Mutual Insurance Company	21482-003
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

limitations and exclusions, this policy provices "All Risk" perils including mechanical breakdown, electrical injury, flood, earth movement and collapse, except collapse emanating from faulty or defective design, materials or workmanship. (This exclusion only applies to the cost to repair/replace such property as is found to be faulty or defective and does not apply to resultant damage to otherwise sound property.)
The base all other perils deductible under the commercial property policy is $250,000. per occurrence. Deductibles for catastrophic perils (flood, earth movement) may vary.

The Borough of Naugatuck, CT and the Water Pollution Control Authority of the Borough of Naugatuck (WPCA), shall be Named Insureds under the Property policy with respect to the subject property as their interests may appear.
Naugatuck IFP Statutory Trust, S.T. and Wells Fargo Bank Minnesota, National Association as trustee under that certain Trust Agreement dated as of August 1, 2002 shall be "Loss Payees" with respect to the subject property as their interests may appear.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

Cert#

CERTIFICATE OF INSURANCE

DATE (MM/DD/YYYY) 09/05/2002

PRODUCER

Connecticut Interlocal Risk Management Agency
00 Chapel Street
New Haven CT 06510

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY A: Connecticut Interlocal Risk Mgmt. Agency

INSURED

Borough of Naugatuck & Naugatuck Board of Education
229 Church Street
Naugatuck CT 06770

COMPANY B:

COMPANY C:

COMPANY D:

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING AND REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES, LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A.	GENERAL LIABILITY	LAP008824802	07/01/2002	07/1/2003	BODILY INJURY OCC	
	[X] COMPREHENSIVE FORM				BODILY INJURY AGG	
	[ ] PREMISES/OPERATIONS				PROPERTY DAMAGE OCC	
	[ ] UNDERGROUND EXPLOSION & COLLAPSE HAZARD				PROPERTY DAMAGE AGG	
	[ ] PRODUCTS/COMPLETE ORDER				BI & PD COMBINED OCC	1,000,000
	[ ] CONTRACTUAL				BI & PD COMBINED AGG	3,000,000
	[ ] INDEPENDENT CONTRACTORS				PERSONAL INJURY AGG	1,000,000
	[ ] BROAD FORM PROPERTY DAMAGE					
	[ ] PERSONAL INJURY					
A.	AUTOMOBILE LIABILITY	LAP008824802	07/01/2002	07/1/2003	BODILY INJURY (Per person)	
	[X] ANY AUTO				BODILY INJURY (Per accident)	
	[ ] ALL OWNED AUTOS (Private Pass)				PROPERTY DAMAGE	
	[ ] ALL OWNED AUTOS (Other than Private Passenger)				BODILY INJURY & PROPERTY DAMAGE COMBINED	1,000,000
	[ ] HIRED AUTOS					
	[ ] NON-OWNED AUTOS					
	[ ] GARAGE LIABILITY					
A.	EXCESS LIABILITY	LAP008824802	07/01/2002	07/1/2003	EACH OCCURRENCE	10,000,000
	[X] UMBRELLA FORM				AGGREGATE	10,000,000
	[ ] OTHER THAN UMBRELLA FORM					
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				[ ] WC STATUTORY LIMITS	
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: [ ] INCL [ ] EXCL				EL EACH ACCIDENT	
					EL DISEASE - POLICY LIMIT	
					EL DISEASE - EA EMPLOYEE	
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

Liability insurance required in the discharge and access agreement between the Bo. of Naugatuck and Crompton Manufacturing Corp.,Inc. Crompton Manufacturing, U.S. Filter Operating Services, Inc., Naugatuck Environmental Technologies, LLC and their respective officers, officials, agents, subcontractors, volunteers, and employees are included as additional insureds. The Water Pollution Control Authority of Naugatuck is included as a named insured - see who is insured as per attached. The right to subrogation is waived in favor of the additional insureds as to any losses, which are covered and collectible under this policy. This contract is subject to all of the terms, provisions, exclusions, and limitations of the policy. *CANCELLATION: 30 DAYS WRITTEN NOTICE EXCEPT FOR NON-PAYMENT OF PREMIUM WHICH IS 10 DAYS.*

CERTIFICATE HOLDER

Crompton Manufacturing Corp., Inc.

199 Benson Road

Middlebury CT 06762

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OF REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE FOR CIRMA: Steven Boyle

II. LIABILITY GENERAL TERMS AND CONDITIONS

Please refer to each Coverage Section as they may contain exceptions or additions to these GENERAL TERMS AND CONDITIONS.

A. WHO IS AN INSURED

1. The individual Coverage Sections may contain specific provisions regarding WHO IS AN INSURED. It is important to refer to each Coverage Section in addition to the following provisions.

2. You are an insured as shown as named insured in the Declarations.

3. Each of the following is also an insured to the extent indicated:

   a. Your elected or appointed directors, officers, officials and members of any boards or commissions, but only with respect to their duties as your directors, officers, officials, or board or commission members.
   b. Employees of any school district named in the Declarations who hold the position of Superintendent or Assistant Superintendent, Administrator or Assistant Administrator, Principal or Assistant Principal or any equivalent administrative position, but only for acts within the scope of their employment by you.
   c. Your employees, other than those included in a. and b. above, but only for acts within the scope of their employment by you, or in the case of a *"leased worker,"* while performing duties related to the conduct of your business. However, none of these employees are covered for:

      (1) *"Bodily injury"* or *"personal injury"* to you; or
      (2) *"Property damage"* to property owned or occupied by or rented or loaned to that employee, or any of your other employees except *"autos."*

   d. Any volunteer other than included in 1., 2. or 3. a., b. or c. above but only for acts within the scope of the duties assigned by you. However, none of these volunteers are insured for:

      (1) *"Bodily injury"* or *"personal injury"* to you; or
      (2) *"Property damage"* to property owned or occupied by or rented or loaned to that volunteer except *"autos."*

   e. Any student teacher other than included in 1., 2. or 3. a., b. or c. above but only for acts within the scope of the duties assigned by you. However, none of these student teachers are insured for:

      (1) *"Bodily injury"* or *"personal injury"* to you; or

Exhibit E

Certificates of Required ICI Design/Build Period Insurance

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

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INSURERS AFFORDING COVERAGE

INSURED
Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Factory Mutual Insurance Company 21482-003
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				EACH OCCURRENCE	$
	☐ COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$
	☐ CLAIMS MADE ☐ OCCUR				MED EXP (Any one person)	$
					PERSONAL & ADV INJURY	$
					GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$
	☐ POLICY ☐ PRO-JECT ☐ LOC					
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO				BODILY INJURY (Per person)	$
	☐ ALL OWNED AUTOS					
	☐ SCHEDULED AUTOS				BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS					
	☐ NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	☐ ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	☐ OCCUR ☐ CLAIMS MADE				AGGREGATE	$
						$
	☐ DEDUCTIBLE					$
	☐ RETENTION $					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				☐ WC STATU-TORY LIMITS ☐ OTH-ER	
					E.L. EACH ACCIDENT	$
					E.L. DISEASE - EA EMPLOYEE	$
					E.L. DISEASE - POLICY LIMIT	$
A	OTHER Builders Risk	UA941	3/1/2002	3/1/2003	Limit: $17,070,337. Ded: $250,000. Per Occurrence	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Re: Borough of Naugatuck, CT Incineration Facilities Lease Agreement. Subject property is the "Incineration Facilities" and "Incineration Facilities Site" located at 500 Cherry Street, Naugatuck, CT 06770.

Policy Limit: $17,070,337., covering loss, damage or destruction to the Initial Capital Improvements (including boiler and machinery coverage) caused by physical damage in an amount equal to the full replacement value of the Initial Capital Improvements.

CERTIFICATE HOLDER

ADDITIONAL INSURED; INSURER LETTER:

Borough of Naugatuck, CT
and Water Pollution Control Authority
of the Borough of Naugatuck
229 Church Street
Naugatuck, CT 06770

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

David M Greer

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Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3

DATE 08/16/2002

PRODUCER 877-945-7378

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26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

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INSURERS AFFORDING COVERAGE

INSURED Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A:	Factory Mutual Insurance Company	21482-003
INSURER B:		
INSURER C:		
INSURER D:		
INSURER E:		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

The Borough of Naugatuck and the Water Pollution Control Authority of the Borough of Naugatuck (WPCA), shall be Named Insured under the Builder's Risk policy as their interests may appear. Naugatuck IFP Statutory Trust, S.T. and Wells Fargo Bank Minnesota, National Association as trustee under that certain Trust Agreement dated as of August 1, 2002 shall be "Loss Payees" under the Builder's Risk policy with respect to the subject property as their interests may appear.

The Insurers under the policy evidenced hereunder shall have no recourse against the Borough of Naugatuck or WPCA for payment of any premium or assessment.
The Builder's Risk policy includes a waiver of subrogation rights as to claims against the Borough of Naugatuck and WPCA of the Borough of Naugatuck as Named Insureds to the extent required under the Incineration Facilities Lease Agreement, except to the extent that such claims arise out of the intentional acts or acts of gross negligence of such parties.
The proceeds of the Builder's Risk policy shall be payable to the Borough of Naugatuck, the WPCA and Loss Payees, for disbursement as repairs and reconstruction proceed, without coinsurance, and insure the interests of the Borough of Naugatuck, the WPCA and Loss Payees regardless of any breach or violation by Naugatuck Environmental Technologies LLC of warranties, declarations, or conditions contained in such Builder's Risk policy, any action or inaction by Naugatuck Environmental Technologies LLC , any foreclosure relating to the Incineration Facilitites, or any change of ownership of all or any portion of the Incineration Facilities.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Factory Mutual Insurance Company 21482-003
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				EACH OCCURRENCE	$
	COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$
	CLAIMS MADE OCCUR				MED EXP (Any one person)	$
					PERSONAL & ADV INJURY	$
					GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$
	POLICY PRO-JECT LOC					
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO					
	ALL OWNED AUTOS				BODILY INJURY (Per person)	$
	SCHEDULED AUTOS					
	HIRED AUTOS				BODILY INJURY (Per accident)	$
	NON-OWNED AUTOS					
					PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	OCCUR CLAIMS MADE				AGGREGATE	$
						$
	DEDUCTIBLE					$
	RETENTION $					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS OTH-ER	
					E.L. EACH ACCIDENT	$
					E.L. DISEASE - EA EMPLOYEE	$
					E.L. DISEASE - POLICY LIMIT	$
A	OTHER Builders Risk	UA941	3/1/2002	3/1/2003	Limit: $17,070,337. Ded: $250,000. Per Occurrence	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Re: Borough of Naugatuck, CT Incineration Facilities Lease Agreement. Subject property is the "Incineration Facilities" and "Incineration Facilities Site" located at 500 Cherry Street, Naugatuck, CT 06770.

Policy Limit: $17,070,337., covering loss, damage or destruction to the Initial Capital Improvements (including boiler and machinery coverage) caused by physical damage in an amount equal to the full replacement value of the Initial Capital Improvements.

CERTIFICATE HOLDER ADDITIONAL INSURED; INSURER LETTER:

Naugatuck IFP Statutory Trust, S.T.
and Wells Fargo Bank Minnesota, National Association as Trustee

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE David M Diner

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Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
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INSURERS AFFORDING COVERAGE

INSURED Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A:	Factory Mutual Insurance Company	21482-003
INSURER B:		
INSURER C:		
INSURER D:		
INSURER E:		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

The Borough of Naugatuck and the Water Pollution Control Authority of the Borough of Naugatuck (WPCA), shall be Named Insured under the Builder's Risk policy as their interests may appear. Naugatuck IFP Statutory Trust, S.T. and Wells Fargo Bank Minnesota, National Association as trustee under that certain Trust Agreement dated as of August 1, 2002 shall be "Loss Payees" under the Builder's Risk policy with respect to the subject property as their interests may appear.

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The proceeds of the Builder's Risk policy shall be payable to the Borough of Naugatuck, the WPCA and Loss Payees, for disbursement as repairs and reconstruction proceed, without coinsurance, and insure the interests of the Borough of Naugatuck, the WPCA and Loss Payees regardless of any breach or violation by USFilter Operating Services, Inc. of warranties, declarations, or conditions contained in such Builder's Risk policy, any action or inaction of the Named Insureds or Loss Payees or others, any foreclosure relating to the Incineration Facilitites, or any change of ownership of all or any portion of the Incineration Facilities.

IMPORTANT

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DISCLAIMER

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Exhibit F

ICI Labor and Materials Payment Bond

AIU Insurance Company
American Home Assurance Company
Granite State Insurance Company
The Insurance Company of the State of Pennsylvania
National Union Fire Insurance Company of Pittsburgh, Pa.
New Hampshire Insurance Company

American International Companies

Principal Bond Office
70 Pine Street, New York, NY 10270

Executed in Triplicate
Bond No: **29-03-49**

LABOR & MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That **Naugatuck Environmental Technologies, LLC**, as Principal, and **The Insurance Company of the State of Pennsylvania**, as Surety, are held and firmly bound unto **The Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough**, as Obligees, in the sum of **Seventeen million seventy thousand three hundred thirty seven and 00/100** Dollars (**$17,070,337.00**), for the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a written contract dated as of **October 25, 2001, as amended as of June 4, 2002** with the Obligees, for certain "Design/Build Work" as defined in the Incineration Facilities Lease Agreement (the "Contract") which Contract, together with all plans and specifications now made or which may hereafter be made in extension, modification or alteration thereof, is by reference made a part hereof.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment for all labor and material used or reasonably required for use in the performance of the Contract, as required by the Contract and the General Statutes of Connecticut, as amended, then this obligation shall be void; otherwise it shall remain in full force and effect. This bond is provided pursuant to Sections 49-41 et seq. of the General Statutes of Connecticut and shall be governed thereby.

The Principal and the Surety shall not be liable under this bond to the Obligees, or either of them, unless said Obligees, or either of them shall make payments to the Principal (or to Surety if it arranges for performance of the Contract) in accordance with the terms of said contract as to payments, and shall perform all the other obligations to be performed under said contract at the time and in the manner therein set forth, all of the acts of one Obligee being binding on the other.

Provided, however, the liability under this bond shall not be cumulative and shall be limited to the aggregate penalty of the said bond. The Surety may, at its option, make any payment under said bond by check issued jointly to the joint Obligees.

Signed, sealed and dated **August 9, 2002**.

Barbara Burdett
(Witness)

My commission expires: 12/6/2007

Naugatuck Environmental Technologies, LLC
(Principal)
By: Donald R Rodgers Jr

The Insurance Company of the State of Pennsylvania
(Surety)
By:
Mechelle Larkin, Attorney-in-Fact

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Orange

On AUG - 9 2002 (DATE) before me, Kathy R. Mair, Notary Public (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC),

personally appeared Mechelle Larkin (NAME(S) OF SIGNER(S)),

☒ personally know to me - OR - ☐ proved to me on the basic of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

- ☐ INDIVIDUALS
- ☐ CORPORATE OFFICER

TITLE(S)

- ☐ PARTNER(S) ☐ LIMITED ☐ GENERAL
- ☒ ATTORNEY-IN-FACT
- ☐ TRUSTEE(S)
- ☐ GUARDIAN/CONSERVATOR
- ☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

DESCRIPTION OF ATTACHED DOCUMENT

TITLE OR TYPE OF DOCUMENT

NUMBER OF PAGES

DATE OF DOCUMENT

SIGNER(S) OTHER THAN NAMED ABOVE

krm (5/2001)

The Insurance Company of the State of Pennsylvania
Principal Bond Office: 70 Pine Street, New York, N.Y. 10270

POWER OF ATTORNEY

No. 05-B-45538

KNOW ALL MEN BY THESE PRESENTS:

. The Insurance Company of the State of Pennsylvania, a Pennsylvania corporation, does hereby appoint

---Irene Lau, Kathy R. Mair, Mechelle Larkin: of Newport Beach, California---

its true and lawful Attorney(s)-in-Fact, with full authority to execute on its behalf bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, issued in the course of its business, and to bind the company thereby.

IN WITNESS WHEREOF, The Insurance Company of the State of Pennsylvania has executed these presents

this 3rd day of July, 2002.

Michael C. Fay, Vice President

STATE OF NEW YORK }
COUNTY OF NEW YORK}ss.

On this 3rd day of July, 2002 before me came the above named officer of The Insurance Company of the State of Pennsylvania, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of said corporation thereto by authority of his office.

DOROTHY L. PARKER
Notary Public, State of New York
No. 01PA6060631
Qualified in Richmond County
Commission Expires June 25 03

CERTIFICATE

Excerpts of Resolution adopted by the Board of Directors of The Insurance Company of the State of Pennsylvania, on May 18, 1976:

"**RESOLVED,** that the Chairman of the Board, the President, or any Vice President be, and hereby is, authorized to appoint Attorneys-in-Fact to represent and act for and on behalf of the Company to execute bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, and to attach thereto the corporate seal of the Company, in the transaction of its surety business;

"**RESOLVED,** that the signatures and attestations of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company when so affixed with respect to any bond, undertaking, recognizance or other contract of indemnity or writing obligatory in the nature thereof;

"**RESOLVED,** that any such Attorney-in-Fact delivering a secretarial certification that the foregoing resolutions still be in effect may insert in such certification the date thereof, said date to be not later than the date of delivery thereof by such Attorney-in-Fact."

I, Elizabeth M. Tuck, Secretary of The Insurance Company of the State of Pennsylvania, do hereby certify that the foregoing excerpts of Resolution adopted by the Board of Directors of this corporation, and the Power of Attorney issued pursuant thereto, are true and correct, and that both the Resolution and the Power of Attorney are in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of the corporation

this ____ day of AUG - 9 2002

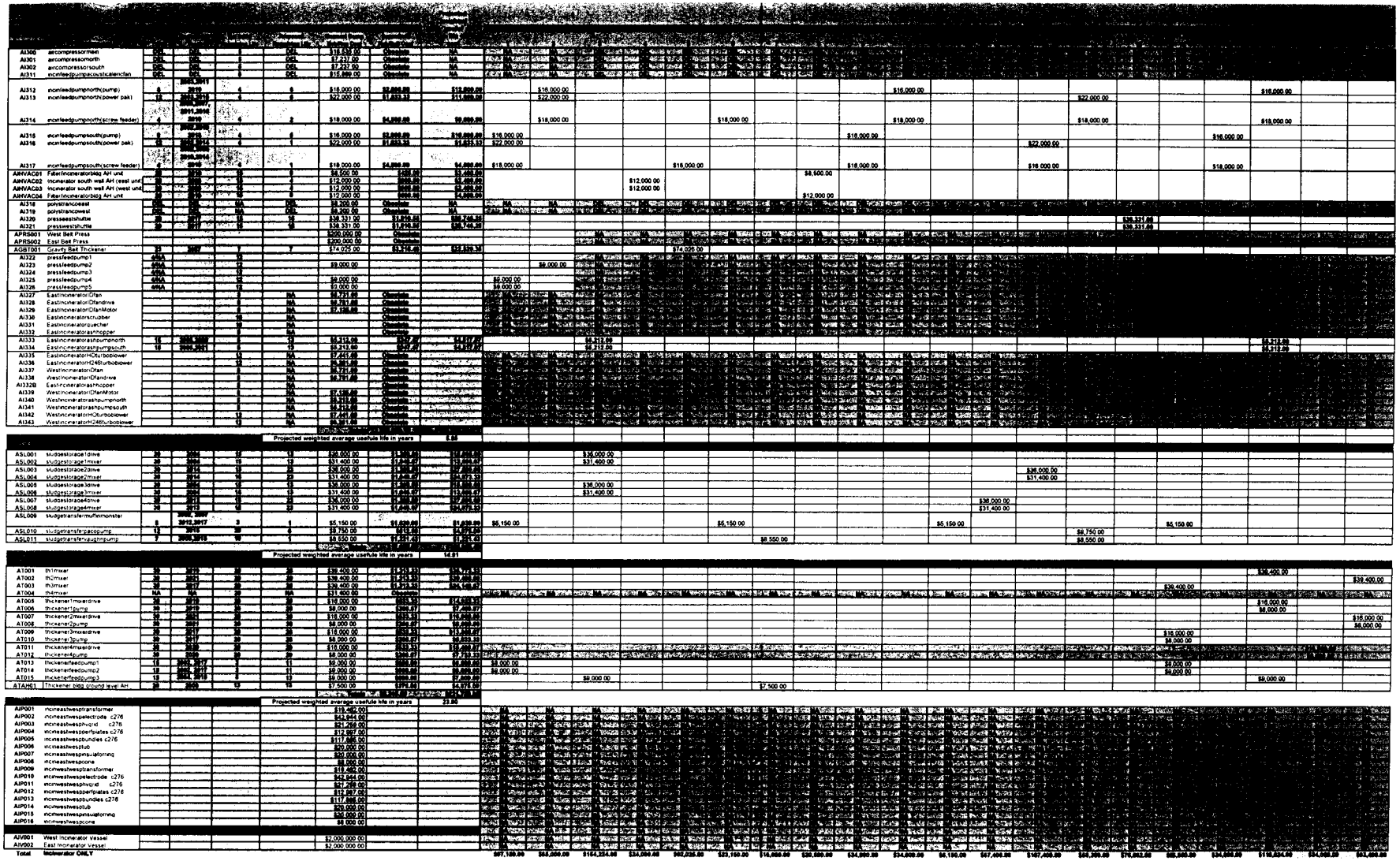
Elizabeth M. Tuck, Secretary

38 (4/99)

Exhibit G

Projected Rebuild/Replacement Schedule

AI300	aircompressormen	DEL	DEL	6	DEL	$18,630.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI301	aircompressornorth	DEL	DEL	6	DEL	$7,237.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI302	aircompressorsouth	DEL	DEL	6	DEL	$7,237.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI311	incinfeedpumpacousticalencfan	DEL	DEL	6	DEL	$15,000.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI312	incinfeedpumpnorth(pump)	6	2003,2011 2010	4	6	$16,000.00	$2,000.00	$12,000.00		$16,000.00								$16,000.00								$16,000.00		
AI313	incinfeedpumpnorth(power pak)	12	2003,2010 2011,2016	4	6	$22,000.00	$1,833.33	$11,000.00		$22,000.00												$22,000.00						
AI314	incinfeedpumpnorth(screw feeder)	4	2003,2010 2010	4	2	$18,000.00	$4,000.00	$8,000.00		$18,000.00				$18,000.00				$18,000.00				$18,000.00				$18,000.00		
AI315	incinfeedpumpsouth(pump)	6	2003,2010 2010	4	6	$16,000.00	$2,000.00	$10,000.00	$16,000.00								$16,000.00								$16,000.00			
AI316	incinfeedpumpsouth(power pak)	12	2003,2010 2011,2016	4	1	$22,000.00	$1,833.33	$1,833.33	$22,000.00												$22,000.00							
AI317	incinfeedpumpsouth(screw feeder)	4	2003,2010 2010	4	1	$18,000.00	$4,000.00	$4,000.00	$18,000.00				$18,000.00				$18,000.00				$18,000.00				$18,000.00			
AIHVAC01	Filter/incineratorbldg AH unit	20	2010	10	6	$8,500.00	$425.00	$3,400.00								$8,500.00												
AIHVAC02	incinerator south wall AH (east unit	20	2010	10	4	$12,000.00	$600.00	$3,400.00				$12,000.00																
AIHVAC03	incinerator south wall AH (west unit	20	2010	10	4	$12,000.00	$600.00	$3,400.00				$12,000.00																
AIHVAC04	Filter/incineratorbldg AH unit	20	2010	10	6	$12,000.00	$600.00	$4,000.00								$12,000.00												
AI318	polystrancoeast	DEL	DEL	NA	DEL	$8,200.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI319	polystrancowest	DEL	DEL	NA	DEL	$8,200.00	Obsolete	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI320	presseastshuttle	20	2017	10	10	$38,331.00	$1,916.55	$38,740.35															$38,331.00					
AI321	presswestshuttle	20	2017	10	10	$38,331.00	$1,916.55	$38,740.35															$38,331.00					
APRS001	West Belt Press					$200,000.00	Obsolete				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
APRS002	East Belt Press					$200,000.00	Obsolete				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AGBT001	Gravity Belt Thickener	23	2007	7	7	$74,025.00	$3,216.40	$32,539.38					$74,025.00															
AI322	pressfeedpump1	4/NA		12							NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI323	pressfeedpump2	4/NA		12		$9,000.00				$9,000.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI324	pressfeedpump3	4/NA		12							NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI325	pressfeedpump4	4/NA		12		$9,000.00			$9,000.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI326	pressfeedpump5	4/NA		12		$9,000.00			$9,000.00		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI327	EastIncineratorIDfan			6	NA	$6,731.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI328	EastIncineratorIDfandrive			6	NA	$6,731.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI329	EastIncineratorIDfanMotor			6	NA	$7,126.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI330	EastIncineratorscrubber			10	NA		Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI331	EastIncineratorquecher			10	NA		Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI332	EastIncineratorashhopper			6	NA		Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI333	EastIncineratorashpumpnorth	15	2003,2009	6	13	$5,212.00	$347.47	$4,517.07			$5,212.00															$5,212.00		
AI334	EastIncineratorashpumpsouth	15	2003,2011	6	13	$5,212.00	$347.47	$4,517.07			$5,212.00															$5,212.00		
AI335	EastIncineratorHOturboblower			12	NA	$7,441.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI336	EastIncineratorH246turboblower			12	NA	$6,381.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI337	WestIncineratorIDfan			6	NA	$6,731.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI338	WestIncineratorIDfandrive			6	NA	$6,731.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI332B	EastIncineratorashhopper			6	NA		Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI339	WestIncineratorIDfanMotor			6	NA	$7,126.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI340	WestIncineratorashpumpnorth			6	NA	$5,212.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI341	WestIncineratorashpumpsouth			6	NA	$5,212.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI342	WestIncineratorHOturboblower			12	NA	$7,441.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AI343	WestIncineratorH246turboblower			12	NA	$6,381.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					Projected weighted average usefule life in years			5.55																				
ASL001	sludgestorage1drive	30	2004	15	13	$36,000.00	$1,200.00	$10,000.00			$36,000.00																	
ASL002	sludgestorage1mixer	30	2004	15	13	$31,400.00	$1,046.67	$13,000.67			$31,400.00																	
ASL003	sludgestorage2drive	30	2014	15	23	$36,000.00	$1,200.00	$27,000.00													$36,000.00							
ASL004	sludgestorage2mixer	30	2014	15	23	$31,400.00	$1,046.67	$24,073.33													$31,400.00							
ASL005	sludgestorage3drive	30	2004	15	13	$36,000.00	$1,200.00	$10,000.00			$36,000.00																	
ASL006	sludgestorage3mixer	30	2004	15	13	$31,400.00	$1,046.67	$13,000.67			$31,400.00																	
ASL007	sludgestorage4drive	30	2013	15	23	$36,000.00	$1,200.00	$27,000.00												$36,000.00								
ASL008	sludgestorage4mixer	30	2013	15	23	$31,400.00	$1,046.67	$24,073.33												$31,400.00								
ASL009	sludgetransfermultinmonster	8	2002,2007 2012,2017	3	1	$5,150.00	$1,030.00	$1,030.00	$5,150.00					$5,150.00					$5,150.00					$5,150.00				
ASL010	sludgetransferpacopump	12	2016	20	4	$8,750.00	$612.50	$4,075.00														$8,750.00						
ASL011	sludgetransfervaughnpump	7	2005,2015	10	1	$8,550.00	$1,221.43	$1,221.43							$8,550.00							$8,550.00						
					Projected weighted average usefule life in years			14.91																				
AT001	th1mixer	30	2010	20	20	$39,400.00	$1,313.33	$26,773.33																		$39,400.00		
AT002	th2mixer	30	2021	20	20	$39,400.00	$1,313.33	$39,400.00																				$39,400.00
AT003	th3mixer	30	2017	20	20	$39,400.00	$1,313.33	$24,146.67																$39,400.00				
AT004	th4mixer	NA	NA	20	NA	$31,400.00	Obsolete		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AT005	thickener1mixerdrive	30	2010	20	20	$16,000.00	$533.33	$14,933.33																		$16,000.00		
AT006	thickener1pump	30	2010	20	20	$8,000.00	$266.67	$7,466.67																		$8,000.00		
AT007	thickener2mixerdrive	30	2021	20	20	$16,000.00	$533.33	$16,000.00																				$16,000.00
AT008	thickener2pump	30	2021	20	20	$8,000.00	$266.67	$8,000.00																				$8,000.00
AT009	thickener3mixerdrive	30	2017	20	20	$16,000.00	$533.33	$13,066.67																$16,000.00				
AT010	thickener3pump	30	2017	20	20	$8,000.00	$266.67	$6,533.33																$8,000.00				
AT011	thickener4mixerdrive	30	2020	20	20	$16,000.00	$533.33	$16,000.00																				
AT012	thickener4pump	30	2020	20	20	$8,000.00	$266.67	$7,733.33																				
AT013	thickenerfeedpump1	15	2002,2017	3	11	$9,000.00	$600.00	$6,000.00	$9,000.00															$9,000.00				
AT014	thickenerfeedpump2	15	2002,2017	3	11	$9,000.00	$600.00	$6,000.00	$9,000.00															$9,000.00				
AT015	thickenerfeedpump3	15	2004,2010	3	13	$9,000.00	$600.00	$7,400.00			$9,000.00															$9,000.00		
ATAH01	Thickener bldg ground level AH	20	2009	13	13	$7,500.00	$375.00	$4,875.00							$7,500.00													
					Projected weighted average usefule life in years			23.00																				
AIP001	incineastwespstransformer					$19,462.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP002	incineastwespelectrode c276					$42,944.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP003	incineastwesphvgrid c276					$21,259.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP004	incineastwespperfplates c276					$12,997.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP005	incineastwespbundles c276					$117,886.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP006	incineastwesptub					$20,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP007	incineastwespinsulatorring					$20,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP008	incineastwespcone					$8,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP009	incinwestwespstransformer					$19,462.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP010	incinwestwespelectrode c276					$42,944.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP011	incinwestwesphvgrid c276					$21,259.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP012	incinwestwespperfplates c276					$12,997.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP013	incinwestwespbundles c276					$117,886.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP014	incinwestwesptub					$20,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP015	incinwestwespinsulatorring					$20,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIP016	incinwestwespcone					$8,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIV001	West Incinerator Vessel					$2,000,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AIV002	East Incinerator Vessel					$2,000,000.00			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total	Incinerator ONLY								$97,150.00	$65,000.00	$154,224.00	$34,000.00	$62,025.00	$23,150.00	$16,000.00	$20,500.00	$34,000.00	$34,000.00	$6,150.00	$67,400.00	$167,400.00	$65,200.00	$76,062.00	$85,000.00	$34,000.00	$118,834.00	$34,000.00	$63,400.00



PFJ 8/7/02

DOC 7

Document No. 7

LETTER OF CREDIT

SOCIETE GENERALE

560 Lexington Avenue, 4th Floor
New York, NY 10022

August 15, 2002

Borough of Naugatuck
Town Hall
229 Church Street
Naugatuck, Connecticut 06770
Attn: Mayor

Ladies and Gentlemen:

1. At the request and for the account of Naugatuck Environmental Technologies LLC, a Connecticut limited liability corporation (the "Lessee"), Societe Generale, New York (the "Bank") hereby establishes in your favor our Irrevocable Letter of Credit No. 53699 (the "Letter of Credit"), in the amount of US$1,000,000.00, as such stated amount may be escalated each Contract Year based on the Adjustment Factor, and as reduced from time to time in accordance with the provisions hereof (the "Stated Amount"), effective immediately. Capitalized terms used but not defined herein are used as defined in the Lease Agreement.

2. We hereby irrevocable authorize you to draw drafts on us at sight in accordance with the terms and conditions hereinafter set forth. The aggregate amount drawn hereunder shall not exceed the Stated Amount.

3. This Letter of Credit is effective immediately and will expire on August 15, 2003 unless extended in accordance with the rules of ISP98 referred to below (the "Stated Termination Date").

4. Subject to the foregoing and the further provisions of this Letter of Credit, a demand for payment may be made by you by presentation to us of your sight draft, accompanied by your written and completed certificate, signed by you, in substantially the form of Annex A hereto (such certificate being your "Drawing Certificate"), in an amount not exceeding the Stated Amount, representing amounts payable to you by the Lessee under and pursuant to the Incineration Facilities Lease Agreement, dated as of October 25, 2001, among the Lessee, the Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough of Naugatuck, as amended (the "Lease Agreement").

5. Each sight draft drawn under this Letter of Credit must bear on its face the clause "Drawn under Irrevocable Letter of Credit No. 53699."

Continued on the following page which forms an integral part of this LC

SOCIETE GENERALE

560 Lexington Avenue, 4th Floor
New York, NY 10022

6. Demand for payment may be made by you under this Letter of Credit prior to the expiration hereof at any time during the Bank's business hours at its address at 560 Lexington Avenue, 4th Floor, New York, NY 10022, Attention: L/C Dept., or by fax transmission to fax number 212-278-7428 (such fax to indicate that original, executed sight draft and certificate for drawing have been forwarded to the Bank via courier) on a Business Day (as hereinafter defined). As used herein the term "Business Day" means a day on which the Bank at our aforesaid office is opened for the purpose of conducting commercial banking business. We hereby agree that all sight drafts drawn under and in strict conformity with the terms of this Letter of Credit will be duly honored by us upon receipt of the sight drafts and certificates. If we receive any of your sight drafts and certificates, all in strict conformity to the terms of this Letter of Credit, at our aforesaid office not later than 11:00 A.M. (local time) on a Business Day on or before the Stated Termination Date hereof, we will honor the same by 3:00 P.M. (local time) on the same day in accordance with your payment instructions. If we receive any of your sight drafts and certificates, all in strict conformity to the terms of this Letter of Credit at such office after 11:00 A.M. (local time) on a Business Day, on or before the Stated Termination Date hereof, we will honor the same not later than 1:00 P.M. (local time) on the next succeeding Business Day in accordance with your payment instructions. If requested by you, payment under this Letter of Credit may be made by Federal Reserve Wire Transfer of funds to your account in a bank on the Federal Reserve Wire Facility or by deposit of same day funds into a designated account that you maintain with us.

7. The Stated Amount shall be reduced automatically by the amount of each drawing hereunder.

8. This Letter of Credit is transferable in its entirety (but not in part) to your successor which you certify to us has succeeded you as beneficiary and may be successively so transferred. Transfer of this Letter of Credit to such transferee shall be effected upon the presentation to us of this Letter of Credit accompanied by a certificate in the form of Annex B attached hereto.

9. Only you (or a transferee as provided in paragraph 8 hereof) may make a drawing under this Letter of Credit. Upon the payment to you or your account of the amount specified in a sight draft drawn hereunder, we shall be fully discharged of our obligation under this Letter of Credit with regard to that payment, and we shall not thereafter be obligated to make further payments under this Letter of Credit with regard to that payment to you.

Continued on the following page which forms an integral part of this LC

SOCIETE GENERALE
560 Lexington Avenue, 4th Floor
New York, NY 10022

10. This Letter of Credit, except as otherwise stated herein, is subject to the International Standby Practices 1998, International Chamber of Commerce Publication 590 1998 (the "ISP98") and shall be governed and construed in accordance with the laws of the State of Connecticut and applicable U. S. federal law.

11. Communications with respect to this Letter of Credit shall be in writing and shall be addressed to us at our address at 560 Lexington Avenue, 4th Floor, New York, NY 10022, Attention: L/C Dept., specifically referring to the number of this Letter of Credit.

12. This Letter of Credit sets forth in full the terms of our undertaking, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to herein (including, without limitation, the Lease Agreement), except only the certificates, sight drafts, and the Letter referred to herein and ISP98; and any such reference shall not be deemed to incorporate herein by reference any document, instrument or agreement, except for ISP98, such certificates, sight drafts, and Letter.

Very truly yours,

Societe Generale, New York

By:_____
Authorized Officer

By:_____
Authorized Officer

SOCIETE GENERALE

ANNEX A TO LETTER OF CREDIT

CERTIFICATE FOR DRAWING IN CONNECTION WITH
PAYMENT OF AMOUNTS UNDER THE LEASE AGREEMENT

Irrevocable Letter of Credit No. 53699

The undersigned, a duly authorized representative of the Borough of Naugatuck, Connecticut and acting on behalf of the Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough of Naugatuck (the "Beneficiary"), hereby certifies to Societe Generale, New York (the "Bank"), with reference to Irrevocable Letter of Credit No. 53699 (the "Letter of Credit"); (terms defined therein and not otherwise defined herein being used herein as therein defined) issued by the Bank in favor of the Beneficiary, as follows:

(1) The Beneficiary is a party to the Incineration Facilities Lease Agreement, dated October 25, 2001, as amended, (the "Lease Agreement") by and among the Beneficiary, the Water Pollution Control Authority of the Borough of Naugatuck and Naugatuck Environmental Technologies LLC (the "Lessee") regarding the lease, operation, maintenance, repair, replacement, and management of certain sludge incineration facilities and the design, construction, startup, and testing of certain initial capital improvements to the sludge incineration facilities.

(2) The Commencement Date has occurred.

(3) The Beneficiary is making a demand for payment under the Letter of Credit in the amount of US$ _____ and such amount does not exceed the Stated Amount.

(4) The Beneficiary hereby certifies as follows (insert those which are applicable):

(a) The Lessee has materially breached the Lease Agreement and, in accordance with the procedures and requirements of Section 16.3 therein, the Beneficiary has determined that the amount set forth above represents the estimated damages suffered by the Beneficiary, not to exceed the Stated Amount.

(b) The Beneficiary has terminated the Lease Agreement pursuant to Section 14.2 of the Lease Agreement in accordance with the procedures and requirements of such Section, Section 16.3 and the other applicable provisions of the Lease Agreement, and the Beneficiary has determined that the amount set forth above represents the estimated damages suffered by the Beneficiary, not to exceed the Stated Amount.

(c) The Letter of Credit will expire within 30 days, and the Letter of Credit has not been extended, renewed, or replaced in accordance with Section 16.3 of the Lease Agreement. The amount set forth above does not exceed the Stated Amount.

(d) The Lessee or the Guarantor has filed a petition of voluntary bankruptcy under the Bankruptcy Code, the Lessee or the Guarantor has consented to the filing of any bankruptcy or reorganization petition against the Lessee or any Guarantor, or the Lessee or the Guarantor has filed a petition to reorganize the Lessee or the Guarantor pursuant to the Bankruptcy Code. The amount set forth above does not exceed the Stated Amount.

(e) A court of competent jurisdiction has issued an order appointing a receiver, liquidator, custodian, or trustee of the Lessee or the Guarantor or a major part of the Lessee's or the Guarantor's property, respectively, or a petition to reorganize the Lessee or the Guarantor pursuant to the Bankruptcy Code has been filed against the Lessee or the Guarantor, and such order has not been discharged or such filing has not been dismissed within 90 days after such issuance or filing. The amount set forth above does not exceed the Stated Amount.

(5) Payment of the amount described hereby shall be made by wire transfer to the following account: [wire transfer instructions].

IN WITNESS WHEREOF, the Beneficiary has caused this certificate to be executed and delivered by its duly authorized representative as of this _____ day of _____, _____.

THE BOROUGH OF NAUGATUCK, CONNECTICUT

By: _____

Title: _____

SOCIETE GENERALE

ANNEX B TO LETTER OF CREDIT

TRANSFER CERTIFICATE

Societe Generale
560 Lexington Avenue, 4th Floor
New York, NY 10022

Attn: L/C Dept.

RE: Irrevocable Letter of Credit No. 53699

For value received, the undersigned Beneficiary hereby irrevocably transfers to:

[Name of Transferee]
[Address of Transferee]

all rights of the undersigned Beneficiary to draw under the above Letter of Credit in its entirety.

By the transfer, all rights of the undersigned Beneficiary in such Letter of Credit are transferred to the transferee and the transferee shall have the sole right as the Beneficiary thereof, including sole rights to any amendments whether increases or extensions or other amendments and whether now existing or hereafter made. All amendments are to be advised directly to the transferee without necessity of any consent of or notice to the undersigned beneficiary.

Such transferee is a permitted transferee under such Letter of Credit.

The Letter of Credit is returned herewith, and we ask you to endorse the transfer on the reverse thereof, and forward it directly to the transferee with your customary notice of transfer.

SIGNATURE AUTHENTICATED

_____
(Bank)

_____
(Authorized Officer)

THE BOROUGH OF NAUGATUCK, CONNECTICUT

By: _____

Title: _____

Doc 8

Document No. 8

CERTIFICATES OF REQUIRED LEASEHOLD PERIOD INSURANCE

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A: Commerce and Industry Insurance Company 19410-001
INSURER B: Travelers Indemnity Co. of Ill. 25674-004
INSURER C: American International Specialty Lines In 26883-003
INSURER D: The Travelers Insurance Company 39357-002
INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GL4177798	3/1/2002	3/1/2003	EACH OCCURRENCE	$ 5,000,000
	[X] COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$ 300,000
	[ ] CLAIMS MADE [X] OCCUR				MED EXP (Any one person)	$ 5,000
					PERSONAL & ADV INJURY	$ 5,000,000
					GENERAL AGGREGATE	$ 15,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$ 15,000,000
	[ ] POLICY [X] PRO-JECT [ ] LOC					
B	AUTOMOBILE LIABILITY	TC2JCAP-419J1647TIL02	3/1/2002	3/1/2003	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
B	[X] ANY AUTO	TC2ECAP-419J1659TCT02	3/1/2002	3/1/2003		
B	[ ] ALL OWNED AUTOS	TRJCAP-419J1611TIL02	3/1/2002	3/1/2003	BODILY INJURY (Per person)	$
	[ ] SCHEDULED AUTOS					
	[ ] HIRED AUTOS				BODILY INJURY (Per accident)	$
	[ ] NON-OWNED AUTOS					
					PROPERTY DAMAGE (Per accident)	$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	[ ] ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
C	EXCESS LIABILITY	4762740	3/1/2002	3/1/2003	EACH OCCURRENCE	$ 10,000,000
	[X] OCCUR [ ] CLAIMS MADE				AGGREGATE	$ 10,000,000
						$
	[ ] DEDUCTIBLE					$
	[ ] RETENTION $					$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	TC2JUB419J4441TIL02	3/1/2002	3/1/2003	[X] WC STATUTORY LIMITS [ ] OTHER	
D		TRJUB419J4293TIL02	3/1/2002	3/1/2003	E.L. EACH ACCIDENT	$ 1,000,000
					E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
					E.L. DISEASE - POLICY LIMIT	$ 1,000,000
C	OTHER Pollution Legal Liability	PLL2679651	3/1/2002	3/1/2003	$10,000,000. Per Incident $25,000,000. Aggregate Aggregate Applies Per Project Deductible $250,000. Per Claim	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Re: Borough of Naugatuck, CT Incineration Facilities Lease Agreement. Subject property is the "Incineration Facilities" and "Incineration Facilities Site" located at 500 Cherry Street, Naugatuck, CT 06770.

General Liability includes Contractual Liability, Explosion, Collapse, Underground Hazards, Independent Contractors Coverages and Railroad Protective Liability coverage.
Workers Compensation includes all states coverage, voluntary compensation coverage, Federal

CERTIFICATE HOLDER

Borough of Naugatuck, CT
and Water Pollution Control Authority
of the Borough of Naugatuck
229 Church Street
Naugatuck, CT 06770

ADDITIONAL INSURED; INSURER LETTER: ____

CANCELLATION Except 10 Days for Non-Payment of Premium

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE David M Piner

© ACORD CORPORATION 1988

Willis **CERTIFICATE OF LIABILITY INSURANCE** Page 2 of 3

DATE 08/16/2002

PRODUCER 877-945-7378

Willis North America, Inc. - Regional Cert Center
26 Century Blvd.
P. O. Box 305191
Nashville, TN 372305191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED Naugatuck Environmental Technologies LLC
40-004 Cook Street
Palm Desert, CA 92211

INSURER A:	Commerce and Industry Insurance Company	19410-001
INSURER B:	Travelers Indemnity Co. of Ill.	25674-004
INSURER C:	American International Specialty Lines In	26883-003
INSURER D:	The Travelers Insurance Company	39357-002
INSURER E:		

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Longshoreman and Harborworkers coverage.
Automobile Liability includes coverage for Pollution Liability, arising from incidents involving covered vehicles.
Excess / Umbrella limit applies per project. Excess liability coverage above the underlying Commercial General Liability results in an overall liability coverage in the amount of $10,000,000. per occurrence and $25,000,000. in the aggregate for bodily injury and property damage, and overall liability coverage for personal injury and advertising injury of $10,000,000. in the aggregate. Excess Liability above the required Automobile Liability and Employer's Liability results in an overall liability coverage in the amount of $10,000,000. per occurrence and $10,000,000. in the aggregate.
The following deductibles are applicable to the above listed policies:
General Liability $500,000. per occurrence for Bodily Injury/Property Damage (combined single limit), Personal Injury & Advertising Injury.
Automobile Liability $10,000. per accident
Umbrella $10,000. self insured retentions, if not covered by the underlayer of insurance.
With respects the limits of Excess Liability coverage, evidenced on the Certificate of Insurance provided herein, such limits shall apply to provide coverage against the shortfall of the underlying Commercial General Liability, Automobile Liability and Employer's Liability policies only, so that the coverage limit, as required under contract, is met. Under no circumstance shall it be interpreted as to provide excess limits on policies where the underlying policy has met the limits required under contract.

The Borough of Naugatuck, the Water Pollution Control Authority of the Borough of Naugatuck (WPCA), including the Board of Mayor and Burgesses, and their officers, officials, agents, volunteers and employees shall be Additional Insureds under the Commercial General Liability, Automobile Liability, Excess Liability and Contractor Pollution Liability policies with respects liabilities arising out of the Work or Operations performed by or on behalf of the Named Insured; and/or liabilities resulting from the ownership, maintenance or use of a covered auto, as applicable. The Limits of Insurance provided on behalf of the Additional Insured are not greater than those required by contract. With respect to the Additional Insured, the insurance evidenced hereunder contains a severability of interest provision.
The insurers under all insurance policies evidenced hereunder shall have no recourse against the Additional Insureds for payment of any premium or assessment.
All insurance provided hereunder shall be primary over any mutual coverage liability insurance policies maintained by the Additional Insureds.
The policies and coverages with respects to employer's liability insurance, commercial general liability insurance, commercial automobile liability insurance, excess umbrella liability insurance, (and railroad protective liability), include a waiver of subrogation rights as to claims against the Additional Insureds to the extent required under the contract between Naugatuck Environmental Technologies LLC, the Borough of Naugatuck and the Water Pollution Control Authority of the Borough of Naugatuck (the "Lease Agreement"), except to the extent that such claims arise out of the intentional acts or acts of gross negligence of the Additional Insureds.
The policy and coverage with respects to pollution liability insurance include a waiver of subrogation rights as to claims against the Additional Insureds to the extent required under the Lease Agreement except to the extent that (1) claims arise out of the intentional acts or acts of gross negligence of the Additional Insureds, or (2) claims relate to, or arise out of Pre-Existing Environmental Condition or Specified Site Conditions (as such terms are defined in the Lease Agreement) or other environmental matters for which the Additional Insureds are responsible under the Lease Agreement.

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

DOC 9

Document No. 9

JOINT ACKNOWLEDGMENT FOR ACCEPTANCE OF CERTAIN COMMENCEMENT DATE CONDITIONS AND OTHER RELATED MATTERS

This is a Joint Acknowledgment by the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough of Naugatuck, Connecticut and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee") pursuant to subsection 4.4(A) of the Incineration Facilities Lease Agreement (as hereinafter defined).

RECITALS

WHEREAS, the Lessor and the Lessee have entered into the Incineration Facilities Lease Agreement, dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement"; capitalized terms used but not defined herein are as defined in the Lease Agreement); and

WHEREAS, the rights, obligations and liabilities of the Lessor and the Lessee under the Lease Agreement are subject to the satisfaction or waiver of the Commencement Date Conditions set forth in Article IV of the Lease Agreement.

NOW, THEREFORE, in consideration of the premises contained herein and intending to be legally bound hereby, the Lessor and the Lessee hereby jointly acknowledge:

Joint Commencement Date Conditions

1. Pursuant to subsection 4.3(A)(5) of the Lease Agreement, the Lessor and the Lessee have agreed upon the final Base Rent Schedule and the Reference Price Adjustment Schedule for Appendices 24 and 25, respectively. Attached hereto as Exhibit A are the final versions of Appendix 24 and 25 to the Lease Agreement.

2. Pursuant to subsection 4.3(A)(10) of the Lease Agreement, the Lessor and the Lessee have agreed on the inventory of Transferred Property and the initial evaluation of the Incineration Facilities conducted as required by Section 8.2 and Appendix 15 of the Lease Agreement. Attached hereto as Exhibit G is a copy of the Projected Rebuild/Replacement Schedule agreed to by the parties pursuant to Section 1.0 of Appendix 15.

3. Pursuant to subsection 4.3(A)(11) of the Lease Agreement, all of the documents and instruments identified in Section 4.3 of the Lease Agreement are in form and substance reasonably satisfactory to both parties, and are valid, in full force and effect and enforceable against each party thereto as of the date hereof. No such document, instrument or agreement is subject to the satisfaction of any outstanding condition

precedent except those expressly to be satisfied after the date hereof. No party to any such document, instrument or agreement has repudiated or is in default or imminent default thereunder, and each party has received such certificates or other evidence reasonably satisfactory to it of such facts as such party has reasonably requested.

4. Pursuant to subsection 4.3(A)(12) of the Lease Agreement, there is no Legal Proceeding before or by any Governmental Body, pending or threatened, which: (1) challenges, or might challenge, directly or indirectly, (a) the authorization, execution, delivery, validity or enforceability of the Lease Agreement or the Guaranty Agreement from Vivendi Environnement, S.A. ("Vivendi") to the Lessor dated as of October 25, 2001, or (b) the interest of the Lessor in the Incineration Facilities; (2) seeks to enjoin or restrict the use of the Incineration Facilities in the manner or for the purposes contemplated by the Lease Agreement; or (3) seeks damages, fines, remediation or any other remedy in connection with the environmental condition or any other matter pertaining to the Incineration Facilities, in any such case which can reasonably be expected to materially and adversely affect the Lessor's or the Lessee's ability to comply with its obligations under the Lease Agreement.

5. Pursuant to subsection 6.5(E) of the Lease Agreement, the Lessor and the Lessee have provided to each other the contact information with respect to the Lessor's Contract Administrator and the Lessee's Facilities Manager and Senior Supervisors.

Lessee Commencement Date Conditions

6. Pursuant to subsection 4.1(A)(1) of the Lease Agreement, the Lessee has carried out and completed the Transition Plan in accordance with Appendix 13 of the Lease Agreement.

7. Pursuant to subsection 4.1(A)(2) of the Lease Agreement, the Lessee has submitted applications which it believes in good faith to be complete, and has taken all other steps which are necessary under Applicable Law to obtain all Governmental Approvals required to be obtained by Lessee before the Commencement Date for the performance of the Lessee Responsibilities; and the Lessee has cooperated with the Lessor in the submittal of the State air permit to construct the fluidized bed incinerator portion of the Initial Capital Improvements.

8. Pursuant to subsection 4.1(A)(3) of the Lease Agreement, the Lessee has delivered to the Lessor the Letter of Credit required pursuant to Section 16.3 of the Lease Agreement, a copy of which is attached to this Record of Proceedings as Document Number 7.

9. Pursuant to subsection 4.1(A)(5) of the Lease Agreement, the Lessee has obtained the Required Leasehold Period Insurance specified in Appendix 10 of the Lease Agreement. Attached to this Record of Proceedings as Document Number 8 are copies of the certificates of insurance for the Required Leasehold Period Insurance. Pursuant to Contract Administration Memorandum No. IF 2002-1, the Lessor and the

Lessee have agreed that the deductible for the Commercial General Liability insurance shall be changed to $500,000 and for the Automobile insurance is changed to $500,000 per occurrence.

10. Pursuant to subsection 4.1(A)(6) of the Lease Agreement, the Lessee has actively advised the Lessor with respect to, and has cooperated with and assisted the Lessor in obtaining any required Private Management Approvals, and has full responsibility for any aspect thereof relating to staffing levels or requirements.

11. Pursuant to subsection 4.1(A)(7) of the Lease Agreement, the Lessee has cooperated with and assisted the Lessor in providing any information, certifications or documents which were reasonably required in connection with the Lessor's completing all financing transactions necessary to fund the ICI Design/Build Price.

12. Pursuant to subsection 4.1(A)(10) of the Lease Agreement, the Lessee has provided true copies of the audited financial statements of the Guarantor for the most recently completed fiscal year, as set forth in Exhibit B hereto. The Lessor acknowledges that the Guarantor only issues audited financial statements on an annual basis and thereby waives the requirement of subsection 4.1(A)(10) that the Company provide financial statements for its most recently completed quarter. Since the Contract Date, to the knowledge of the Lessee, there has not occurred any change, financial or otherwise, in the condition of Guarantor that would materially and adversely affect the ability of Guarantor to perform its obligations under the Guaranty.

13. Pursuant to subsection 4.1(A)(11) of the Lease Agreement, to the extent not provided as part of this Record of Proceedings, the Lessee has provided to the Lessor copies of all filings and reports conducted, prepared or obtained with respect to or evidencing the Lessee's activities pursuant to Section 4.1 of the Lease Agreement.

Lessor Commencement Date Conditions

14. Pursuant to subsection 4.2(1) of the Lease Agreement, the Lessor has cooperated with the Lessee in the submission of all applications for Governmental Approvals, if any, which the Lessee is obligated to submit pursuant to Section 4.1 of the Lease Agreement.

15. Pursuant to subsection 4.2(2) of the Lease Agreement, the Lessor has submitted a complete application and taken all other steps which were necessary under Applicable Law to obtain the State air permit to construct the fluidized bed incinerator portion of the Initial Capital Improvements, a copy of which is attached to this Record of Proceedings as Document Number 6.

16. Pursuant to subsection 4.2(3) of the Lease Agreement, the Lessor has made all submittals and taken all other action which was reasonably necessary under Applicable Law in order to apply for any required Private Management Approval. On January 29, 2002, the Lessor received written approval of the United States

Environmental Protection Agency of the Lease Agreement. Attached to this Record of Proceedings as Document Number 5 is a true copy of the applicable Private Management Approval.

17. Pursuant to subsection 4.2(4) of the Lease Agreement, the Lessor, in accordance with Section 10.5 of the Lease Agreement, has undertaken, implemented and completed all financing transactions necessary to fund the ICI Design/Build Price, the proceeds of which are available for disbursement to the Lessee as required by Section 4.3(A)(6) of the Lease Agreement.

18. Pursuant to subsection 4.2(5) of the Lease Agreement, the Lessor has previously delivered to the Lessee currently available survey information relating to the Incineration Facilities Site.

Other Items Related to Commencement Date and Commencement of Construction

19. The Lessor and the Lessee have agreed that the Fixed ICI Design/Build Price, as escalated pursuant to subsections 4.5(C) and 10.5(C) of the Lease Agreement, is $17,070,337. Attached hereto as Exhibit C is a true copy of the final version of Appendix 6 reflecting the escalation of the Fixed ICI Design/Build Price with respect to each Initial Capital Improvement.

20. The Lessor and the Lessee have agreed that the accrued interest on all approved Advancement Work, calculated pursuant to subsection 4.5(D) of the Lease Agreement, is $29,804.25.

21. The Lessee has paid the Lessor, as of the date hereof, $100,000 for the Lessor's costs incurred in obtaining the State air permit to construct the fluidized bed incinerator portion of the Initial Capital Improvements are required by subsection 4.6(B) of the Lease Agreement.

22. The Lessor and the Lessee have agreed that the aggregate amount of Offsetting Credits for purposes of subsection 4.6(C) of the Lease Agreement is $2,000.

23. As required by subsection 6.3(5) of the Lease Agreement, the Lessor has obtained the Required Lessor Insurance specified in Appendix 10 to the Lease Agreement. Attached hereto as Exhibit D are true copies of the certificates of insurance for all Required Lessor Insurance.

24. Pursuant to subsection 10.4(B)(7) of the Lease Agreement, the Lessee has obtained the Required ICI Design/Build Period Insurance specified in Appendix 10 to the Lease Agreement. Pursuant to Section 2.7 of Appendix 10, the Lessor and the Lessee agree that the accepted deductible for the Builder's Risk insurance is $250,000 per loss. Attached hereto as Exhibit E are copies of the certificates of insurance for the Required ICI Design/Build Period Insurance.

25. The Lessor and the Lessee have agreed that the Reference Prices, as adjusted pursuant to subsections 13.3(H)(1) and (2) of the Lease Agreement, are $2,283,415 and $2,996,163, respectively.

26. The Lessor and the Lessee have agreed that the premium for (1) the additional pollution liability insurance to be provided by the Lessee and reimbursed by the Lessor pursuant to Section 13.7 of the Lease Agreement is $16,500.00, and (2) the property damage and business interruption/time element insurance pursuant to Section 3.0 of Appendix 10 to the Lease Agreement, as placed by the Lessee for the Lessor, is $24,521.64, in each case such premiums are to be paid to the Lessee on the Commencement Date. The Borough acknowledges that the foregoing premiums are for the period from the Commencement Date through February 28, 2002.

27. The Lessor and the Lessee have agreed that the base premium for the ICI Labor and Materials Payment Bond to be furnished by the Lessee and reimbursed by the Lessor pursuant Section 16.4 of the Lease Agreement is $79,264.86. Attached hereto as Exhibit F is the executed ICI Labor and Materials Payment Bond.

IN WITNESS WHEREOF, the parties have hereunto set their hand as of the 15th day of August, 2002.

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By: _____
Joan B. Taf
Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By: _____
Ronald Merancy
Chairman

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By: _____
Donald R. Rodgers, Jr.
President

IN WITNESS WHEREOF, the parties have hereunto set their hand as of the 15th day of August, 2002.

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By:_____
Joan B. Taf
Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By:_____
Ronald Merancy
Chairman

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By:_____
Joseph J. Tomashosky
Vice President

Exhibit A

Final Versions of Appendices 24 and 25 to the Lease Agreement

APPENDIX 24

BASE RENT SCHEDULE

APPENDIX 24

BASE RENT SCHEDULE

1.0 BASE RENT SCHEDULE

The Lessee shall pay to the Lessor Base Rent pursuant to Section 13.2 of the Lease Agreement in the amounts for each Annual Period as set forth in this Appendix 24. For each month in each Annual Period, the Base Rent shall be the sum of Element 1 and Element 2 as set forth in Table 24-1. Such Base Rent shall be paid in arrears by the first Business Day of the calendar month following the calendar month listed in the column labeled "Calendar Month." (For example, the Base Rent for the partial month of August 2002 is payable by September 1, 2002; the rent for September 2002 is payable by October 1, 2002.)

Table 24-1

BASE RENT SCHEDULE

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
1	1	1	August 2002	$106,100	$0
2	1	1	September 2002	$193,477	$0
3	1	1	October 2002	$193,477	$0
4	1	1	November 2002	$193,477	$0
5	1	1	December 2002	$193,477	$0
6	1	1	January 2003	$193,477	$0
7	1	1	February 2003	$193,477	$0
8	1	1	March 2003	$193,477	$0
9	1	1	April 2003	$193,477	$0
10	1	1	May 2003	$193,477	$0
11	1	1	June 2003	$193,477	$0
12	1	2	July 2003	(See Note (1))	$0
13	2	2	August 2003		$0
14	2	2	September 2003		$0
15	2	2	October 2003		$0
16	2	2	November 2003		$0
17	2	2	December 2003		$0
18	2	2	January 2004		$0
19	2	2	February 2004		$0
19	2	2	March 2004		$0
21	2	2	April 2004		$0
22	2	2	May 2004		$0
23	2	2	June 2004		$0
24	2	3	July 2004		$216,960
25	3	3	August 2004		$216,960
26	3	3	September 2004		$216,960

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
27	3	3	October 2004		$216,960
28	3	3	November 2004		$216,960
29	3	3	December 2004		$216,960
30	3	3	January 2005		$216,960
31	3	3	February 2005		$216,960
32	3	3	March 2005		$216,960
33	3	3	April 2005		$216,960
34	3	3	May 2005		$181,061
35	3	3	June 2005		$181,061
36	3	4	July 2005		$181,061
37	4	4	August 2005		$181,061
38	4	4	September 2005		$181.061
39	4	4	October 2005		$181,061
40	4	4	November 2005		$181,061
41	4	4	December 2005		$181,061
42	4	4	January 2006		$181,061
43	4	4	February 2006		$181,061
44	4	4	March 2006		$181,061
45	4	4	April 2006		$181,061
46	4	4	May 2006		$180,715
47	4	4	June 2006		$180,715
48	4	5	July 2006		$180,715
49	5	5	August 2006		$180,715
50	5	5	September 2006		$180,715
51	5	5	October 2006		$180,715
52	5	5	November 2006		$180,715
53	5	5	December 2006		$180,715
54	5	5	January 2007		$180,715
55	5	5	February 2007		$180,715
56	5	5	March 2007		$180,715
57	5	5	April 2007		$180,715
58	5	5	May 2007		$100,890
59	5	5	June 2007		$100,890
60	5	6	July 2007		$100,890
61	6	6	August 2007	(See Note (2))	$100,890
62	6	6	September 2007		$100,890
63	6	6	October 2007		$100,890
64	6	6	November 2007		$100,890
65	6	6	December 2007		$100,890
66	6	6	January 2008		$100,890
67	6	6	February 2008		$100,890
68	6	6	March 2008		$100,890
69	6	6	April 2008		$100,890
70	6	6	May 2008		$92,546
71	6	6	June 2008		$92,546
72	6	7	July 2008		$92,546
73	7	7	August 2008		$92,546
74	7	7	September 2008		$92,546

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
75	7	7	October 2008		$92,546
76	7	7	November 2008		$92,546
77	7	7	December 2008		$92,546
78	7	7	January 2009		$92,546
79	7	7	February 2009		$92,546
80	7	7	March 2009		$92,546
81	7	7	April 2009		$92,546
82	7	7	May 2009		$92,551
83	7	7	June 2009		$92,551
84	7	8	July 2009		$92,551
85	8	8	August 2009		$92,551
86	8	8	September 2009		$92,551
87	8	8	October 2009		$92,551
88	8	8	November 2009		$92,551
88	8	8	December 2009		$92,551
90	8	8	January 2010		$92,551
91	8	8	February 2010		$92,551
92	8	8	March 2010		$92,551
93	8	8	April 2010		$92,551
94	8	8	May 2010		$92,781
95	8	8	June 2010		$92,781
96	8	9	July 2010		$92,781
97	9	9	August 2010		$92,781
98	9	9	September 2010		$92,781
99	9	9	October 2010		$92,781
100	9	9	November 2010		$92,781
101	9	9	December 2010		$92,781
102	9	9	January 2011		$92,781
103	9	9	February 2011		$92,781
104	9	9	March 2011		$92,781
105	9	9	April 2011		$92,781
106	9	9	May 2011		$92,659
107	9	9	June 2011		$92,659
108	9	10	July 2011		$92,659
109	10	10	August 2011		$92,659
110	10	10	September 2011		$92,659
111	10	10	October 2011		$92,659
112	10	10	November 2011		$92,659
113	10	10	December 2011		$92,659
114	10	10	January 2012		$92,659
115	10	10	February 2012		$92,659
116	10	10	March 2012		$92,659
117	10	10	April 2012		$92,659
118	10	10	May 2012		$92,598
119	10	10	June 2012		$92,598
120	10	11	July 2012		$92,598
121	11	11	August 2012		$92,598
122	11	11	September 2012		$92,598

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
123	11	11	October 2012		$92,598
124	11	11	November 2012		$92,598
125	11	11	December 2012		$92,598
126	11	11	January 2013		$92,598
127	11	11	February 2013		$92,598
128	11	11	March 2013		$92,598
129	11	11	April 2013		$92,598
130	11	11	May 2013		$92,470
131	11	11	June 2013		$92,470
132	11	12	July 2013		$92,470
133	12	12	August 2013		$92,470
134	12	12	September 2013		$92,470
135	12	12	October 2013		$92,470
136	12	12	November 2013		$92,470
137	12	12	December 2013		$92,470
138	12	12	January 2014		$92,470
139	12	12	February 2014		$92,470
140	12	12	March 2014		$92,470
141	12	12	April 2014		$92,470
142	12	12	May 2014		$92,705
143	12	12	June 2014		$92,705
144	12	13	July 2014		$92,705
145	13	13	August 2014		$92,705
146	13	13	September 2014		$92,705
147	13	13	October 2014		$92,705
148	13	13	November 2014		$92,705
149	13	13	December 2014		$92,705
150	13	13	January 2015		$92,705
151	13	13	February 2015		$92,705
152	13	13	March 2015		$92,705
153	13	13	April 2015		$92,705
154	13	13	May 2015		$92,558
155	13	13	June 2015		$92,558
156	13	14	July 2015		$92,558
157	14	14	August 2015		$92,558
158	14	14	September 2015		$92,558
159	14	14	October 2015		$92,558
160	14	14	November 2015		$92,558
161	14	14	December 2015		$92,558
162	14	14	January 2016		$92,558
163	14	14	February 2016		$92,558
164	14	14	March 2016		$92,558
165	14	14	April 2016		$92,558
166	14	14	May 2016		$92,709
167	14	14	June 2016		$92,709
168	14	15	July 2016		$92,709
169	15	15	August 2016		$92,709
170	15	15	September 2016		$92,709

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
171	15	15	October 2016		$92,709
172	15	15	November 2016		$92,709
173	15	15	December 2016		$92,709
174	15	15	January 2017		$92,709
175	15	15	February 2017		$92,709
176	15	15	March 2017		$92,709
177	15	15	April 2017		$92,709
178	15	15	May 2017		$91,596
179	15	15	June 2017		$91,596
180	15	16	July 2017		$91,596
181	16	16	August 2017		$91,596
182	16	16	September 2017		$91,596
183	16	16	October 2017		$91,596
184	16	16	November 2017		$91,596
185	16	16	December 2017		$91,596
186	16	16	January 2018		$91,596
187	16	16	February 2018		$91,596
188	16	16	March 2018		$91,596
189	16	16	April 2018		$91,596
190	16	16	May 2018		$91,590
191	16	16	June 2018		$91,590
192	16	17	July 2018		$91,590
193	17	17	August 2018		$91,590
194	17	17	September 2018		$91,590
195	17	17	October 2018		$91,590
196	17	17	November 2018		$91,590
197	17	17	December 2018		$91,590
198	17	17	January 2019		$91,590
199	17	17	February 2019		$91,590
200	17	17	March 2019		$91,590
201	17	17	April 2019		$91,590
202	17	17	May 2019		$91,607
203	17	17	June 2019		$91,607
204	17	18	July 2019		$91,607
205	18	18	August 2019		$91,607
206	18	18	September 2019		$91,607
207	18	18	October 2019		$91,607
208	18	18	November 2019		$91,607
209	18	18	December 2019		$91,607
210	18	18	January 2020		$91,607
211	18	18	February 2020		$91,607
212	18	18	March 2020		$91,607
213	18	18	April 2020		$91,607
214	18	18	May 2020		$91,639
215	18	18	June 2020		$91,639
216	18	19	July 2020		$91,639
217	19	19	August 2020		$91,639
218	19	19	September 2020		$91,639

Months after Commence-ment Date	Annual Period	Contract Year	Calendar Month	Monthly Base Rent Schedule	
				Element 1 (1)	Element 2
219	19	19	October 2020		$91,639
220	19	19	November 2020		$91,639
221	19	19	December 2020		$91,639
222	19	19	January 2021		$91,639
223	19	19	February 2021		$91,639
224	19	19	March 2021		$91,639
225	19	19	April 2021		$91,639
226	19	19	May 2021		($5,444)
227	19	19	June 2021		($5,444)
228	19	20	July 2021		($5,444)
229	20	20	August 2021		($5,444)
230	20	20	September 2021		($5,444)
231	20	20	October 2021		($5,444)
232	20	20	November 2021		($5,444)
233	20	20	December 2021		($5,444)
234	20	20	January 2022		($5,444)
235	20	20	February 2022		($5,444)
236	20	20	March 2022		($5,444)
237	20	20	April 2022		($5,444)
238	20	20	May 2022		$0
239	20	20	June 2022		$0
240	20	21	July 2022		$0
241	21	21	August 2022	(See Note (3))	$0

Notes:

(1) Element 1 of Table 24-1 shall be equal to $193,477 for each month up to an including the month ending on June 30, 2003, except that for the payment due on September 1, 2002, the amount shall be $106,100. Beginning July 1, 2003, Element 1 shall be adjusted each Contract Year by the Adjustment Factor, pursuant to Article XIII of the Lease Agreement. Until applicable CPI values are published and available to calculate the Adjustment Factor for each new Contract Year, the Lessee shall pay Element 1 of the Base Rent at the rate set for the prior Contract Year; and upon publication and availability of the applicable CPI values, the adjusted Element 1 shall be calculated and with the next monthly Rent due, the Lessee shall provide an additional payment (or take a credit) for any difference between the adjusted Base Rent Element 1 amounts and the value of the prior Contract Year's Base Rent Element 1 for the months since the beginning of the new Contract Year.

(2) During Annual Period 6 (months 61-72), the Lessee shall be entitled to a one-time fuel adjustment in the amount of $965,114, which amount, at the Lessor's discretion, will either be paid by the Lessor to the Lessee in equal monthly installments of $80,426.17 or such amount shall be deducted from the monthly

Base Rent amounts due during such Annual Period 6. Lessor shall advise Lessee of Lessor's selection between such options prior to the beginning of Annual Period 6.

(3) The Base Rent for the partial month of August 2022 shall be prorated for the number of days from August 1 through August 14, 2022.

2.0 EXAMPLE BASE RENT CALCULATION

On or prior to October 15, 2002, the parties shall prepare and agree upon, as guidance material, example calculations of Base Rent for three selected Annual Periods during the Term of the Lease Agreement. The agreed-upon examples shall be memorialized in a Contract Administration Memorandum.

APPENDIX 25

REFERENCE PRICE ADJUSTMENT SCHEDULE

1.0 REFERENCE PRICE ADJUSTMENTS

As provided in Section 13.3(H) of the Lease Agreement, the following amounts shall be used in the calculation of the Reference Price for each Annual Period.

Table 25-1

REFERENCE PRICE ADJUSTMENT SCHEDULE

Annual Period	Adjustment Amount
1	$211,600
2	211,600
3	211,600
4	211,600
5	214,067
6	273,267
7	330,000
8	330,000
9	330,000
10	330,000
11	330,000
12	330,000
13	330,000
14	330,000
15	330,000
16	330,000
17	330,000
18	330,000
19	330,000
20	330,000

Exhibit B

Audited Annual Financial Statements of Guarantor

DOC 10

Document No. 10

JOINT ACKNOWLEDGMENT
BY
THE BOROUGH OF NAUGATUCK, CONNECTICUT,
THE WATER POLLUTION CONTROL AUTHORITY OF
THE BOROUGH OF NAUGATUCK
AND
NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC

This is a Joint Acknowledgment by the Borough of Naugatuck, Connecticut, the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough of Naugatuck, Connecticut and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee") pursuant to Section 4.4(A) of the Incineration Facilities Lease Agreement (as hereinafter defined).

RECITALS

WHEREAS, the Lessor and the Lessee have entered into the Incineration Facilities Lease Agreement dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement"; capitalized terms used but not defined herein are as defined in the Lease Agreement); and

WHEREAS, the rights, obligations and liabilities of the Lessor and the Lessee under the Lease Agreement are subject to the satisfaction of the Commencement Date Conditions set forth in Article IV of the Lease Agreement.

NOW, THEREFORE, in consideration of the premises contained herein and intending to be legally bound hereby:

1. The Lessor and the Lessee hereby acknowledge that all Commencement Date Conditions precedent to the rights, conditions and liabilities of the Lessor and the Lessee contained in Article IV of the Lease Agreement have been satisfied and met, as the case may be, pursuant to the terms of the Lease Agreement.

2. The Lessor and the Lessee hereby acknowledge that, as of the date hereof, the Commencement Date, as defined in the Lease Agreement, has occurred and the Term, the Leasehold Period and the ICI Design/Build Period have commenced.

IN WITNESS WHEREOF, the parties have hereunto set their hand as of the 15th day of August, 2002.

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By: _____
Joan B. Taf
Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By: _____
Ronald Merancy
Chairman

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By: _____
Donald R. Rodgers, Jr.
President

IN WITNESS WHEREOF, the parties have hereunto set their hand as of the 15th day of August, 2002.

THE BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By:_____
Joan B. Taf
Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By:_____
Ronald Merancy
Chairman

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By:_____
Joseph J. Tomashosky
Vice President

DOC 11

Document No. 11

CONTRACT ADMINISTRATION MEMORANDUM NO. IF 2002-1

Incineration Facilities Lease Agreement
Contract Administration Memorandum No. IF 2002-1
Date: August 15, 2002

This CONTRACT ADMINISTRATION MEMORANDUM ("CAM") is made pursuant to Section 6.6(B) of the Incineration Facilities Lease Agreement among the Borough of Naugatuck, Connecticut ("Borough"), the Water Pollution Control Authority of the Borough of Naugatuck (the "WPCA") (the Borough and the WPCA, collectively referred to herein as the "Lessor") and Naugatuck Environmental Technologies LLC (the "Lessee"), dated as of October 25, 2001, as amended by the First Amendment to the Incineration Facilities Lease Agreement, dated as of June 4, 2002 (as amended, the "Lease Agreement"). All capitalized terms used, but not defined, herein shall have the meanings defined in the Lease Agreement.

Background

The CAM has been prepared in reference to the following background:

A. The deductible amounts for certain Required Leasehold Period Insurance as set forth in Appendix 10 of the Lease Agreement have been determined to be not available at commercially reasonable rates, and the Parties desire to agree to alternative deductible amounts subject to the terms set forth herein.

B. The Lease Agreement prescribes certain responsibilities of the Lessor and Lessee with respect to environmental matters, including retention of responsibility by the Lessor as to Pre-Existing Environmental Conditions and Specified Site Conditions; but the Parties have identified a potential ambiguity which merits clarification with respect to the relationship between such provisions and Section 1.3 of Appendix 10 of the Lease Agreement concerning waiver of the insurance carriers' subrogation rights under the Required Leasehold Period Insurance, as applied to the pollution liability insurance to be provided by the Lessee under the Lease Agreement.

C. Pursuant to Section 16.3 of the Lease Agreement, Lessee has proposed to provide a Letter of Credit issued by Société Générale, with offices located in New York City, New York. The Lessor has determined that Société Générale is an acceptable Letter of Credit issuer, notwithstanding that Société Générale is not a United States bank and does not have a banking office in the State of Connecticut.

D. The Parties acknowledge that in financing of the Initial Capital Improvements, the Lessor has relied upon the approximate timing and cumulative amounts of drawdowns set forth in Appendix 6 to the Lease Agreement, and that such timing and amounts affect the investment of the proceeds from such financing and interest accumulative thereon. The Parties further acknowledge the desirability of providing flexibility regarding the sequence of particular milestones and payments relating thereto, provided that the total cumulative dollar drawdowns of the Fixed ICI Design/Build Price in each time period does not exceed projected drawdown amounts assumed in the arrangements for financing of the Initial Capital Improvements. The Parties, therefore, desire to clarify certain provisions regarding the drawdown and payment of the Fixed Design/Build Price subject to the terms set forth herein.

Understandings

Based upon the foregoing Background, the Parties, through their duly authorized representatives, hereby agree to the following interpretations and applications of the provisions of the Lease Agreement:

1. ***Increase in Certain Insurance Deductibles and Other Insurance Issues.***

(a) Pursuant to Section 1.7 of Appendix 10 to the Lease Agreement, Lessor and Lessee agree that the deductibles for Required Leasehold Period Insurance shall be changed as follows, with the understanding that Lessee shall remain responsible for payment of any such deductibles as provided in Paragraph 1(b) below:

Commercial General Liability – $500,000.
Automobile – $500,000 per occurrence.

(b) It is the Lessor's understanding, based upon information provided by the Lessee and Lessee's insurance broker, Willis, that as an Additional Insured under the foregoing policies and the other Required Leasehold Insurance policies specified in Appendix 10, the Lessor will not be required to pay the deductible amount under any such insurance policy should the lessor make a claim thereunder.

(c) The parties acknowledge that Section 1.3 of Appendix 10 to the Lease Agreement is not intended to alter the obligations of the Lessor under the Lease Agreement with respect to Pre-Existing Environmental Conditions, Specified Site Conditions, or other environmental matters for which the Lessor is responsible under the Lease Agreement; and Parties acknowledge and intend the waiver of subrogation under any pollution liability policy will not waive subrogation to the extent that (1) claims arise out of the intentional acts or acts of gross negligence of the Additional Insureds, or (2) claims relate to, or arise out of, Pre-Existing Environmental Conditions, Specified Site Conditions, or other environmental matters for which the Additional Insureds are responsible under the Lease Agreement.

2. ***Letter of Credit Issuer.***

(a) With reference to Section 16.3 of the Lease Agreement, Lessor agrees that Société Générale, with an office located in New York City, New York, is an acceptable Letter of Credit issuer, and Lessor waives the requirement that such Letter of Credit issuer be a United States bank having a banking office in the State of Connecticut subject to the conditions set forth in Paragraph 2(b).

(b) The Lessor's waiver under Paragraph 2(a) shall be effective so long as (i) Société Générale is the Letter of Credit issuer, and (ii) Société Générale maintains an office in New York and is either subject to Federal or New York State banking regulatory jurisdiction.

(c) In consideration of the Lessor's waiver as set forth in Paragraph 2(a) above, Lessee agrees that the Lessor shall have the right to submit certificates for drawing upon the Letter of Credit by telecopy, notwithstanding that the form of the Letter of Credit in the

Transaction Forms to the Lease Agreement does not currently provide for presentation of certificates of drawing in such manner. Attached hereto as Exhibit B is a revised form of the Letter of Credit reflecting the modifications agreed to by the parties under this Paragraph.

3. ***Clarification of Certain Provisions Regarding Drawdown and Payment of the Fixed ICI Design/Build Price.*** In interpreting Sections 4.5(D) and 10.5 and Appendix 6 of the Lease Agreement, Lessor and Lessee agree that:

(a) On or prior to September 15, 2002, Lessee and Lessor shall meet, prepare and agree upon a document which further describes the Milestone events listed in Appendix 6 of the Lease Agreement, and specifically describes the documentation to be submitted with a requisition for payment or other means by which a determination will be made that each of the Milestones listed in Appendix 6 has been achieved (the "Milestone Descriptions"). The Milestone Descriptions need not describe Milestones in terms of CPM Schedule activities. It is the intent of the parties that the Milestone Descriptions contain practical and reasonably articulate descriptions of the events or items to be completed as part of such Milestone such that a reasonable determination can be made whether or not the particular Milestone has been achieved. The parties recognize that all of the work not described in other interim Milestone events shall be encompassed within the Substantial Completion and Acceptance Milestones identified in Appendix 6. The agreed-upon Milestone Descriptions shall be memorialized in a Contract Administration Memorandum. Upon approval by Lessee and Lessor of the Milestone Descriptions, the provisions of Paragraphs 3(b), (c), and (d) below shall become effective.

(b) In paying for Advancement Work and the Initial Capital Improvements, the Lessor shall not be obligated to approve and pay requisitions for milestone payments of the Fixed ICI Design/Build Price to the extent that the aggregate milestone payments in any period exceed the total combined maximum cumulative dollar drawdown of the Fixed ICI Design/Build Price for that period as set forth in the column entitled "Combined Maximum Cumulative Dollar Drawdown" in Exhibit A to this CAM.

(c) The Lessor may, but shall not be obligated to, approve requisitions for milestone payments of the Fixed ICI Design/Build Price that exceed the total combined maximum cumulative dollar drawdown values referenced in Paragraph 3(b) above.

(d) Subject to the limitations set forth in Paragraph 3(b), milestones for particular elements of the Initial Capital Improvements may be attained in a different order and at dates earlier or later than set forth in Tables 6-1-1 through 6-6-1 of Appendix 6, and Lessee may submit requisitions for milestone payments as work is actually performed and such milestones are actually achieved, and conditioned upon submission of substantiation that such milestones have been achieved and compliance with the other requisition requirements of subsections 10.5(F) through (N) of the Lease Agreement, Lessor shall pay such requisitions as such milestones are actually achieved.

(e) Nothing in Paragraph 3(d) shall in any way affect Lessee's obligations to achieve ICI Substantial Completion and ICI Acceptance of the Initial Capital Improvements within the timeframes set forth in the Lease Agreement.

IN WITNESS WHEREOF, the Parties have caused this Contract Administration Memorandum to be executed by the duly authorized representatives as of the date set forth above.

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By: _____
Name: Joseph J. Tomashosky
Title: Vice President

BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By: Joan B. Taf
Name: Joan B. Taf
Title: Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By: Ronald Merancy
Name: Ronald Merancy
Title: Chairman

Exhibit A – Combined Maximum Cumulative Dollar Drawdown
Exhibit B – Amended Form of Letter of Credit

(e) Nothing in Paragraph 3(d) shall in any way affect Lessee's obligations to achieve ICI Substantial Completion and ICI Acceptance of the Initial Capital Improvements within the timeframes set forth in the Lease Agreement.

IN WITNESS WHEREOF, the Parties have caused this Contract Administration Memorandum to be executed by the duly authorized representatives as of the date set forth above.

NAUGATUCK ENVIRONMENTAL TECHNOLOGIES LLC, as Lessee

By: _____
Name: Joseph J. Tomashosky
Title: Vice President

BOROUGH OF NAUGATUCK, CONNECTICUT, as Lessor

By: _____
Name: Joan B. Taf
Title: Mayor

THE WATER POLLUTION CONTROL AUTHORITY OF THE BOROUGH OF NAUGATUCK, as Lessor

By: _____
Name: Ronald Merancy
Title: Chairman

Exhibit A – Combined Maximum Cumulative Dollar Drawdown
Exhibit B – Amended Form of Letter of Credit

Exhibit A to Contract Administration Memo IF 2002-1
Naugatuck Incineration Facilities ICI Design/Build Price
Maximum Cumulative Drawdown Schedule

Requsition Number	Reference Date of Payment (Assumes Requisition Invoice Submitted 45 Days Before)	Incineration Facilities			
		Financial Model Drawdown for Reference Date (Taxable)	Financial Model Drawdown for Reference Date (Tax Exempt)	Financial Model Drawdown for Reference Date (Taxable + Tax Exempt)	**Maximum Cumulative Drawdown to Reference Date for Payment**
1	August 15, 2002	$1,750.00	$10,000.00	$11,750.00	**$11,750.00**
2	September 1, 2002	$1,199,254.22	$1,904,421.84	$3,103,676.06	**$3,115,426.06**
3	October 1, 2002	$0.00	$0.00	$0.00	**$3,115,426.06**
4	November 1, 2002	$0.00	$22,254.50	$22,254.50	**$3,137,680.56**
5	December 1, 2002	$0.00	$0.00	$0.00	**$3,137,680.56**
6	January 1, 2003	$0.00	$22,254.50	$22,254.50	**$3,159,935.06**
7	February 1, 2003	$0.00	$0.00	$0.00	**$3,159,935.06**
8	March 1, 2003	$0.00	$301,306.33	$301,306.33	**$3,461,241.39**
9	April 1, 2003	$0.00	$0.00	$0.00	**$3,461,241.39**
10	May 1, 2003	$12,736.09	$414,447.72	$427,183.81	**$3,888,425.20**
11	June 1, 2003	$0.00	$2,029,210.00	$2,029,210.00	**$5,917,635.20**
12	July 1, 2003	$281,608.22	$226,812.59	$508,420.81	**$6,426,056.01**
13	August 1, 2003	$0.00	$1,336,182.27	$1,336,182.27	**$7,762,238.28**
14	September 1, 2003	$199,703.17	$71,436.03	$271,139.20	**$8,033,377.48**
15	October 1, 2003	$59,380.56	$1,166,553.93	$1,225,934.49	**$9,259,311.97**
16	November 1, 2003	$106,154.77	$71,436.03	$177,590.80	**$9,436,902.77**
17	December 1, 2003	$93,548.41	$297,767.53	$391,315.94	**$9,828,218.71**
18	January 1, 2004	$12,606.36	$104,817.78	$117,424.14	**$9,945,642.85**
19	February 1, 2004	$0.00	$44,508.99	$44,508.99	**$9,990,151.84**
20	March 1, 2004	$12,606.36	$1,109,850.78	$1,122,457.14	**$11,112,608.98**
21	April 1, 2004	$0.00	$1,208,158.23	$1,208,158.23	**$12,320,767.21**
22	May 1, 2004	$12,606.36	$590,643.41	$603,249.77	**$12,924,016.98**
23	June 1, 2004	$6,303.18	$1,187,539.06	$1,193,842.24	**$14,117,859.22**
24	July 1, 2004	$0.00	$519,207.37	$519,207.37	**$14,637,066.59**
25	August 1, 2004	$0.00	$22,254.50	$22,254.50	**$14,659,321.09**
26	September 1, 2004	$0.00	$0.00	$0.00	**$14,659,321.09**
27	October 1, 2004	$0.00	$0.00	$0.00	**$14,659,321.09**
28	November 1, 2004	$0.00	$0.00	$0.00	**$14,659,321.09**
29	December 1, 2004	$0.00	$0.00	$0.00	**$14,659,321.09**
30	January 1, 2005	$0.00	$0.00	$0.00	**$14,659,321.09**
31	February 1, 2005	$112,052.28	$1,454,001.83	$1,566,054.11	**$16,225,375.20**
32	March 1, 2005	$58,974.89	$794,373.80	$853,348.69	**$17,078,723.89**
Total		$2,169,284.87	$14,909,439.02	$17,078,723.89	

Notes:

(1) The above schedule includes the 6% interest cost adjustment and the CPI adjustment.
(2) The above schedule excludes reimbursement for insurance or payment bonds.
(3) Schedule assumes maximum requisition review time (15) days and payment time from approval date (30 days).
(4) The "Maximum Cumulative Drawdown to Reference Date for Payment" represents the total aggregate amount that the Borough would be obligated be pay to NET for all requisitions presented and approved as of the date shown.

560 Lexington Avenue, 4th Floor
New York, NY 10022

August 15, 2002

Borough of Naugatuck
Town Hall
229 Church Street
Naugatuck, Connecticut 06770
Attn: Mayor

Ladies and Gentlemen:

1. At the request and for the account of Naugatuck Environmental Technologies LLC, a Connecticut limited liability corporation (the "Lessee"), Societe Generale, New York (the "Bank") hereby establishes in your favor our Irrevocable Letter of Credit No. 53699 (the "Letter of Credit"), in the amount of US$1,000,000.00, as such stated amount may be escalated each Contract Year based on the Adjustment Factor, and as reduced from time to time in accordance with the provisions hereof (the "Stated Amount"), effective immediately. Capitalized terms used but not defined herein are used as defined in the Lease Agreement.

2. We hereby irrevocable authorize you to draw drafts on us at sight in accordance with the terms and conditions hereinafter set forth. The aggregate amount drawn hereunder shall not exceed the Stated Amount.

3. This Letter of Credit is effective immediately and will expire on August 15, 2003 unless extended in accordance with the rules of ISP98 referred to below (the "Stated Termination Date").

4. Subject to the foregoing and the further provisions of this Letter of Credit, a demand for payment may be made by you by presentation to us of your sight draft, accompanied by your written and completed certificate, signed by you, in substantially the form of Annex A hereto (such certificate being your "Drawing Certificate"), in an amount not exceeding the Stated Amount, representing amounts payable to you by the Lessee under and pursuant to the Incineration Facilities Lease Agreement, dated as of October 25, 2001, among the Lessee, the Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough of Naugatuck, as amended (the "Lease Agreement").

5. Each sight draft drawn under this Letter of Credit must bear on its face the clause "Drawn under Irrevocable Letter of Credit No. 53699."

Continued on the following page which forms an integral part of this LC

6. Demand for payment may be made by you under this Letter of Credit prior to the expiration hereof at any time during the Bank's business hours at its address at 560 Lexington Avenue, 4th Floor, New York, NY 10022, Attention: L/C Dept., or by fax transmission to fax number 212-278-7428 (such fax to indicate that original, executed sight draft and certificate for drawing have been forwarded to the Bank via courier) on a Business Day (as hereinafter defined). As used herein the term "Business Day" means a day on which the Bank at our aforesaid office is opened for the purpose of conducting commercial banking business. We hereby agree that all sight drafts drawn under and in strict conformity with the terms of this Letter of Credit will be duly honored by us upon receipt of the sight drafts and certificates. If we receive any of your sight drafts and certificates, all in strict conformity to the terms of this Letter of Credit, at our aforesaid office not later than 11:00 A.M. (local time) on a Business Day on or before the Stated Termination Date hereof, we will honor the same by 3:00 P.M. (local time) on the same day in accordance with your payment instructions. If we receive any of your sight drafts and certificates, all in strict conformity to the terms of this Letter of Credit at such office after 11:00 A.M. (local time) on a Business Day, on or before the Stated Termination Date hereof, we will honor the same not later than 1:00 P.M. (local time) on the next succeeding Business Day in accordance with your payment instructions. If requested by you, payment under this Letter of Credit may be made by Federal Reserve Wire Transfer of funds to your account in a bank on the Federal Reserve Wire Facility or by deposit of same day funds into a designated account that you maintain with us.

7. The Stated Amount shall be reduced automatically by the amount of each drawing hereunder.

8. This Letter of Credit is transferable in its entirety (but not in part) to your successor which you certify to us has succeeded you as beneficiary and may be successively so transferred. Transfer of this Letter of Credit to such transferee shall be effected upon the presentation to us of this Letter of Credit accompanied by a certificate in the form of Annex B attached hereto.

9. Only you (or a transferee as provided in paragraph 8 hereof) may make a drawing under this Letter of Credit. Upon the payment to you or your account of the amount specified in a sight draft drawn hereunder, we shall be fully discharged of our obligation under this Letter of Credit with regard to that payment, and we shall not thereafter be obligated to make further payments under this Letter of Credit with regard to that payment to you.

Continued on the following page which forms an integral part of this LC

10. This Letter of Credit, except as otherwise stated herein, is subject to the International Standby Practices 1998, International Chamber of Commerce Publication 590 1998 (the "ISP98") and shall be governed and construed in accordance with the laws of the State of Connecticut and applicable U. S. federal law.

11. Communications with respect to this Letter of Credit shall be in writing and shall be addressed to us at our address at 560 Lexington Avenue, 4th Floor, New York, NY 10022, Attention: L/C Dept., specifically referring to the number of this Letter of Credit.

12. This Letter of Credit sets forth in full the terms of our undertaking, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to herein (including, without limitation, the Lease Agreement), except only the certificates, sight drafts, and the Letter referred to herein and ISP98; and any such reference shall not be deemed to incorporate herein by reference any document, instrument or agreement, except for ISP98, such certificates, sight drafts, and Letter.

Very truly yours,

Societe Generale, New York

By:_____
Authorized Officer

By:_____
Authorized Officer

ANNEX A TO LETTER OF CREDIT

CERTIFICATE FOR DRAWING
IN CONNECTION WITH
PAYMENT OF AMOUNTS
UNDER THE LEASE AGREEMENT

Irrevocable Letter of Credit No. 53699

The undersigned, a duly authorized representative of the Borough of Naugatuck, Connecticut and acting on behalf of the Borough of Naugatuck, Connecticut and the Water Pollution Control Authority of the Borough of Naugatuck (the "Beneficiary"), hereby certifies to Societe Generale, New York (the "Bank"), with reference to Irrevocable Letter of Credit No. 53699 (the "Letter of Credit"); (terms defined therein and not otherwise defined herein being used herein as therein defined) issued by the Bank in favor of the Beneficiary, as follows:

(1) The Beneficiary is a party to the Incineration Facilities Lease Agreement, dated October 25, 2001, as amended, (the "Lease Agreement") by and among the Beneficiary, the Water Pollution Control Authority of the Borough of Naugatuck and Naugatuck Environmental Technologies LLC (the "Lessee") regarding the lease, operation, maintenance, repair, replacement, and management of certain sludge incineration facilities and the design, construction, startup, and testing of certain initial capital improvements to the sludge incineration facilities.

(2) The Commencement Date has occurred.

(3) The Beneficiary is making a demand for payment under the Letter of Credit in the amount of US$ _____ and such amount does not exceed the Stated Amount.

(4) The Beneficiary hereby certifies as follows (insert those which are applicable):

(a) The Lessee has materially breached the Lease Agreement and, in accordance with the procedures and requirements of Section 16.3 therein, the Beneficiary has determined that the amount set forth above represents the estimated damages suffered by the Beneficiary, not to exceed the Stated Amount.

(b) The Beneficiary has terminated the Lease Agreement pursuant to Section 14.2 of the Lease Agreement in accordance with the procedures and requirements of such Section, Section 16.3 and the other applicable provisions of the Lease Agreement, and the Beneficiary has determined that the amount set forth above represents the estimated damages suffered by the Beneficiary, not to exceed the Stated Amount.

(c) The Letter of Credit will expire within 30 days, and the Letter of Credit has not been extended, renewed, or replaced in accordance with Section 16.3 of the Lease Agreement. The amount set forth above does not exceed the Stated Amount.

(d) The Lessee or the Guarantor has filed a petition of voluntary bankruptcy under the Bankruptcy Code, the Lessee or the Guarantor has consented to the filing of any bankruptcy or reorganization petition against the Lessee or any Guarantor, or the Lessee or the Guarantor has filed a petition to reorganize the Lessee or the Guarantor pursuant to the Bankruptcy Code. The amount set forth above does not exceed the Stated Amount.

(e) A court of competent jurisdiction has issued an order appointing a receiver, liquidator, custodian, or trustee of the Lessee or the Guarantor or a major part of the Lessee's or the Guarantor's property, respectively, or a petition to reorganize the Lessee or the Guarantor pursuant to the Bankruptcy Code has been filed against the Lessee or the Guarantor, and such order has not been discharged or such filing has not been dismissed within 90 days after such issuance or filing. The amount set forth above does not exceed the Stated Amount.

(5) Payment of the amount described hereby shall be made by wire transfer to the following account: [wire transfer instructions].

IN WITNESS WHEREOF, the Beneficiary has caused this certificate to be executed and delivered by its duly authorized representative as of this _____ day of _____, _____.

THE BOROUGH OF NAUGATUCK, CONNECTICUT

By: _____

Title: _____

ANNEX B TO LETTER OF CREDIT

TRANSFER CERTIFICATE

Societe Generale
560 Lexington Avenue, 4th Floor
New York, NY 10022

Attn: L/C Dept.

RE: Irrevocable Letter of Credit No. 53699

For value received, the undersigned Beneficiary hereby irrevocably transfers to:

[Name of Transferee]
[Address of Transferee]

all rights of the undersigned Beneficiary to draw under the above Letter of Credit in its entirety.

By the transfer, all rights of the undersigned Beneficiary in such Letter of Credit are transferred to the transferee and the transferee shall have the sole right as the Beneficiary thereof, including sole rights to any amendments whether increases or extensions or other amendments and whether now existing or hereafter made. All amendments are to be advised directly to the transferee without necessity of any consent of or notice to the undersigned beneficiary.

Such transferee is a permitted transferee under such Letter of Credit.

The Letter of Credit is returned herewith, and we ask you to endorse the transfer on the reverse thereof, and forward it directly to the transferee with your customary notice of transfer.

SIGNATURE AUTHENTICATED

_____
(Bank)

_____
(Authorized Officer)

THE BOROUGH OF NAUGATUCK, CONNECTICUT

By: _____

Title: _____