

US EPA ARCHIVE DOCUMENT



CONSULTING GROUP

ICF Incorporated
9300 Lee Highway
Fairfax, VA 22031-1207
703/934-3000 Fax 703/934-9740

MEMORANDUM

DATE: April 30, 1997

TO: Dale Ruhter

FROM: Rick Nevin and Vaughn Kaizer

SUBJECT: Description of Data Used in the Analysis of Subtitles C and D Financial Test
(Contract No. 68-W2-0008, Work Assignment 201, Task 10)

This memorandum presents background information on the data used in the Analysis of Subtitles C and D Financial Test.¹ The analysis incorporated data from various publications and databases to create a financial profile of firms that own or operate Subtitle D Municipal Solid Waste Landfills (MSWLFs) and/or Subtitle C Treatment, Storage, and Disposal facilities (TSDFs). Data were organized into numerous spreadsheets and selectively manipulated to create the financial test model used to evaluate financial test alternatives for Subtitle C and D financial assurance requirements. The facility (MSWLF and TSDF) and financial data used in this analysis may also be useful in other regulatory analyses. This memorandum provides in-depth descriptions of these data and their sources as presented in the attached electronic files.

The memorandum is organized into the following sections and attachment:

- **Section I: Raw Data.** Section I presents descriptions and sources of the raw data collected in the initial stages of the Subtitles C and D test analysis.
- **Section II: Financial Test Data.** Section II presents descriptions of useful raw data that link TSDF and MSWLF data to owner/operator financial data used in the financial test analysis. Closure and post-closure care cost estimates and investment grade bond rating data are also presented in this section
- **Section III: Financial Test Model.** Section III presents a description of the financial test model used to evaluate financial test alternatives in the Subtitles C and D analysis.
- **Attachment.** The attachment presents samples of the various data as described in the above sections and as presented in the attached electronic files.

¹ ICF Report: Analysis of Subtitles C and D Financial Tests. April 30, 1997.

Section I: Raw Data

Section I presents descriptions of the raw data sets collected and compiled in the initial stages of the analysis of the Subtitles C and D financial test. Descriptions of the raw data are presented as organized into the attached electronic files and as presented in the Attachment.

I.1 RCRIS.WK3

The RCRIS.WK3 file contains information on hazardous waste facilities designated as either a treater/storer, incinerator, and/or landfill (TSDFs) identified in the RCRIS Database of Subtitle C Hazardous Waste Facilities. As the initial data set for Subtitle C TSDFs, RCRIS.WK3 contains over 6000 facilities identified as TSDFs. Therefore, for a more refined, reduced sample of candidates for inclusion in the financial test analysis, reference should be made to the following TSDDATA.WK3 file as presented below.

I.2 TSDDATA.WK3

The TSDDATA.WK3 file contains information on TSDFs identified in the RCRIS Database as having corporate owners. (Specifically, the TSDDATA.WK3 file contains selected information from the abovementioned RCRIS.WK3 file, excluding those facilities clearly identified as being owned or operated by a government entity).

Extracted data from the RCRIS database were sent to Dun & Bradstreet (D&B) to be appended with specific “Duns” numbers (unique identifying numbers assigned to individual firms that are either direct owners/operators of TSDFs or corporate parents of owners/operators) from D&B’s financial database, based on the available data on owner, operator, and facility name and address. This was necessary in order to identify financial data on the direct owners of the facilities, identify corporate parents for each direct owner, and incorporate the parent guarantee option of the financial test. A sample of the TSDDATA.WK3 file is presented in the Attachment.

I.2.A Facility Information Worksheet (A)

The ‘Facility Information’ worksheet contains available facility specific information on TSDFs and available associated Duns numbers.

Data Sources

D&B data
RCRIS Database of Subtitle C Hazardous Waste Facilities
RCRIS.WK3

Rows (4680)

Rows represent unique hazardous waste facilities designated as either a treater/storer, incinerator, and/or landfill.

Columns

Columns represent the following data fields:

- RCRIS ID NUMBER. Unique EPA identification number assigned to each facility.

- COMPANY NAME
- PHONE
- ADDRESS
- CITY
- STATE
- ZIP CODE
- SIC CODE. Standard Industrial Classification Code.
- EMPLOYEES
- DUNS NUMBER. Duns number of the direct owner/operator of a TSDFs.
- PAR 1 - PAR 7. Duns numbers for successive corporate parents of each facility owner.
- LANDFILL / INCINERATOR / TREATER/STORER. "X" indicates whether the facility is a landfill, incinerator, and/or treater/storer.

I.3 MSWLF_OW.WK3 AND MSWLF_OP.WK3

The MSWLF_OW.WK3 and MSWLF_OP.WK3 files contain information on owners and operators of municipal solid waste landfills (MSWLFs) obtained from the Landfill Methane Database (maintained by ICF for EPA), the USEPA MSW Factbook, and from the Directory & Atlas of Solid Waste Disposal Facilities 1994 (Chartwell Information Publishers). Facilities appearing in the owner and operator files were chosen according to their reported size (tons per day) and whether the facility was owned or operated by a private firm (i.e., entities eligible for the financial test).

The data were sent to D&B to be appended with available Duns numbers for both the owners and operators of each facility based on the available data on owner, operator, and facility name and address. As in the TSDDATA.WK3 file, this was necessary in order to identify financial data on the direct owners/operators of the facilities, identify corporate parents for each direct owner, and incorporate the parent guarantee option of the financial test. Samples of both files are presented in the Attachment.

I.3.A Facility Information Worksheets (A)

The 'Facility Information' worksheets contain available facility specific information on MSWLFs and available associated Duns numbers.

Data Sources

D&B data

Landfill Methane Database (maintained by ICF for EPA)

USEPA MSW Factbook

Directory & Atlas of Solid Waste Disposal Facilities 1994 (Chartwell Information Publishers).

Rows (657 MSWLF_OW.WK3; 657 MSWLF_OP.WK3)

Rows represent unique municipal solid waste landfills. Both files contain identical facilities.

Columns

Columns represent the following data fields:

- LANDFILL ID NUMBER: Unique identification number assigned to each facility.
- LANDFILL NAME

- PUBLIC/PRIVATE. Indicates whether the facility is owned or operated by a private or public firm.
- COMPANY NAME
- ADDRESS
- MAILING ADDRESS
- CITY
- STATE
- ZIP CODE
- PHONE NUMBER
- DUNS NUMBER. For MSWLF_OW.WK3, represents the Duns number of the facility owner. For MSWLF_OP.WK3, represents the Duns number of the facility operator.
- PAR 1 - PAR 6. Duns numbers for successive corporate parents of facility owners and operators.

I.4 FINAN_1.WK3 AND FINAN_2.WK3

The FINAN_1.WK3 and FINAN_2.WK3 files contain D&B financial data for each unique Duns number identified as either an owner/operator or corporate parent of a MSWLF or TSDF as presented in the TSDDATA.WK3, MSWLF_OW.WK3, and MSWLF_OP.WK3 files of Sections I.2 and I.3. The FINAN_1.WK3 file contains modeled financial data while the FINAN_2.WK3 file contains both modeled and actual (reported) financial data. Actual data are data reported to D&B by the firms in each file. Modeled data are D&B estimates for firms that reported limited data (e.g., only total sales), based on D&B data for other firms of similar size in the same SIC Code. Firms with no financial data in FINAN_1.WK3 were those with reported data that were insufficient to support the D&B model for financial data. Samples of both files are presented in the Attachment.

I.4.A Firm Information Worksheets (A)

The “Firm Information” worksheets contain available reported financial information for each unique Duns number identified as either a direct owner/operator or corporate parent of a MSWLF or TSDF. Each worksheet also contains basic information such as firm name, address, and number of employees.

Data Sources

D&B data

MSWLF_OW.WK3

MSWLF_OP.WK3

TSDDATA.WK3

Rows (3582 FINAN_1.WK3; 1040 FINAN_2.WK3): Rows represent a single firm identified as either a direct owner/operator or corporate parent of a MSWLF or TSDF.

Columns: Columns represent the following data fields:

- DUNS NUMBER. D&B identification number assigned to the owner/operator of a MSWLF or TSDF.
- COMPANY NAME
- STREET ADDRESS
- CITY

- STATE
- ZIP
- NET WORTH
- CURRENT ASSETS
- CURRENT LIABILITIES
- TOTAL ASSETS
- TOTAL LIABILITIES. (Data actually show total equities equal to total assets, incorrectly labeled by D&B).
- NET INCOME
- EMPLOYEES HERE
- MODELED/ ACTUAL. “M” indicates modeled data; “*” indicates actual data.
- STATUS. “0”, “1”, and “2” specify whether the company is a single site, headquarters parent, or branch site, respectively. These indicators correspond to the positions of DUNS NUMBERS presented in the TSDDATA.WK3, MSWLF_OW.WK3, and MSWLF_OP.WK3 files.
- SIC CODE

I.5 BANK_DB.WK3

The BANK_DB.WK3 file contains information on firms identified by D&B as having filed for bankruptcy in 1995 in SIC codes 20-39 and 49. Firms appearing in this file are appended with modeled and actual data for the years 1993 through 1995. Three years of financial data prior to the year of firm failure were needed because the financial test analysis assumes that a test “mispredicted” firm failure if the firm can pass the test in any of the three years prior to firm failure. (A detailed explanation of this assumption can be found in the Subtitle C background document).

Ideally, the bankrupt sample should have included data on all Subtitles C and D firms that went bankrupt in different net worth categories over recent years. However, the universe of Subtitle C and D firms that went bankrupt in recent years and had sufficient financial data available for three prior years to 1995 was too small for the purposes of the Subtitles C and D analysis. For this reason, the sample for bankrupt firms was broadened to include firms in SIC codes 20-39 and 49 (“manufacturing firms” and “other waste management firms”, respectively). A sample of the BANK_DB.WK3 file is presented in the Attachment.

I.5.A Bankrupt Firm Worksheet (A)

The ‘Bankrupt Firm’ worksheet contains available data for bankrupt firms, as described above.

Data Sources

D&B data.

Rows (1681)

Rows represent unique bankrupt firms.

Columns

Columns represent the following data fields:

- DUNS NUMBER. D&B identification number assigned to each bankrupt firm.
- DBNAME

- DBADDR
- DBCITY
- DBST
- DBZIP
- PHONE
- NETWRTH95 - NETWRTH93. Net worth for years 1993 through 1995.
- CURASS95 - CURASS93. Current assets for years 1993 through 1995.
- TOTLIAB95 - TOTLIAB93. Total liabilities for years 1993 through 1995.
- CURLIAB95 - CURLIAB93. Current liabilities for years 1993 through 1995.
- NETINC95 - NETINC93. Net income for years 1993 through 1995.
- EMPT. Total number of employees.
- EMPH. Number of employees on site at the particular firm.
- SIC CODE

I.6 DD&A.WK3

The DD&A.WK3 file contains Depreciation, Depletion and Amortization (DD&A) ratios for the SIC codes of those firms included in the financial test. DD&A ratios were needed for the calculation of cashflow for Subtitles C and D firms, as cashflow data were unavailable from D&B. In several cases where SIC codes were unavailable in Robert Morris Associates (RMA) Annual Statement Studies, a “proxy SIC Code” (and the corresponding DD&A data) were assigned for unavailable SIC Codes. A sample of the DD&A file is presented in the Attachment.

I.6.A DD&A - RMA Worksheet (A)

The ‘DD&A - RMA’ worksheet contains DD&A data by SIC Code of firms included in the financial test.

Data Sources

Robert Morris Associates (RMA) Annual Statement Studies (1994).

Rows (423)

Rows represent DD&A data by SIC Code.

Columns

Column represent the following data fields:

- SIC CODE. SIC Code related to firms appearing in the FIRM.WK3 file of Section II.
- NET SALES / TOTAL ASSETS. Net sales divided by total assets for specific SIC Codes.
- DD&A / NET SALES. DD&A ratio divided by net sales for specific SIC Codes.
- DD&A / TOTAL ASSETS. Result of multiplying net sales divided by total assets by DD&A ratio divided by total assets.
- SIC CODE PROXY . DD&A ratio of a particular SIC Codes assigned to SIC Codes for which DD&A ratios and data were unavailable.

Section II: Financial Test Data

Section II presents descriptions of useful raw data used to create the financial test model for the Subtitles C and D financial test analysis. Descriptions of the financial test data are presented as organized into the attached electronic files and as presented in the Attachment.

II.1 FIRM.WK3

The FIRM.WK3 file contains firm specific data on all owners and/or operators of TSDFs and MSWLFs appearing in the financial test. Specifically, FIRM.WK3 contains all relevant financial data and calculated financial ratios necessary to evaluate alternative tests using the financial test model. A sample of the FIRM.WK3 file is presented in the Attachment.

II.1.A Subtitle C Firms Worksheet (A)

The 'Subtitle C Firms' worksheet contains financial data on all firms owning or operating a TSDF. Firms identified as owning or operating a TSDF in the TSDDATA.WK3 file were matched with available corresponding financial information contained in the financial files (FINAN_1.WK3 and FINAN_2.WK3). This was accomplished through the use of corresponding Duns numbers and, when necessary, names of firms. Investment grade bond ratings (IGBR) from Moody's and Standard & Poor's, if available, were also appended to Subtitle C firms appearing in this file. IGBRs include bonds with a rating of Baa or better from Moody's and BBB or better from Standard & Poor's.

Required financial variables, such as total liabilities, net working capital and cashflow, not provided by D&B and necessary for the analysis, were added to existing financial data after various calculations and the use of DD&A ratios. This complete set of financial data was then used to calculate the financial ratios needed to evaluate financial test alternatives through the use of the financial test model.

Data Sources

D&B data
DD&A.WK3
TSDDATA.WK3
FINAN_1.WK3
FINAN_2.WK3
Moody's
Standard & Poor's.

Rows (1521)

Rows represent a single firm either owning or operating a TSDF.

Columns

Columns represent the following data fields:

- DUNS NUMBER. Duns number of the direct owner/operator of a TSDF.
- HANDLER TYPE. Specifies whether the firm is an owner/operator of a MSWLF, TSDF, or both.
- SIC CODE
- COMPANY NAME

- STREET ADDRESS
- CITY
- STATE
- ZIP CODE
- NET WORTH
- NET INCOME
- NET WORKING CAPITAL. Calculated by subtracting current liabilities from current assets.
- CURRENT ASSETS
- CURRENT LIABILITIES
- TOTAL ASSETS
- TOTAL LIABILITIES. Calculated by subtracting net worth from total assets.
- CASHFLOW. Calculated by multiplying the applicable (i.e., corresponding SIC Code) DD&A ratio by total assets, plus net income.
- NET WORTH CATEGORY. Numbers “1” through “5” represent the following net worth categories, respectively (millions of dollars): Less than 1; 1 - 10; 10 - 20; 20 - 100; and greater than 100.
- CF / TL. Cashflow divided by total liabilities.
- TL / NW. Total liabilities divided by net worth
- CA / CL. Current assets divided by current liabilities
- CF-10MM / TL. Cashflow minus \$10 million all divided by total liabilities
- CF-5MM / TL. Cashflow minus \$5 million all divided by total liabilities
- CF * (0.66). (Adjusted Cashflow) Cashflow multiplied by 0.66
- IGBR. A “1” indicates an investment grade bond rating of BBB or better from Standard & Poor’s or Baa or better from Moody’s. A “0” indicates a bond rating of less than investment grade quality or the absence of a bond rating.
- ULTIMATE PARENT. A “1” indicates a firm as being a “top” (ultimate) corporate parent. A “0” indicates a subsidiary firm and/or direct owner/operator of a TSDF.
- FA OBS CASE LEVEL - PAR 5 LEVEL. Financial assurance obligations incurred at each level of ownership of a TSDF.
- TOTAL FA OBLIGATIONS. Sum of all financial assurance obligations (sum of all financial assurance obligations incurred at all levels of ownership).

II.1.B Subtitle D Firms Worksheet (B)

The ‘Subtitle D Firms’ worksheet contains financial data on all firms owning or operating a MSWLF. Companies identified as owning or operating a MSWLF in the MSWLF_OW.WK3 and MSWLF_OP.WK3 files were matched with available corresponding financial information contained in the financial files (FINAN_1.WK3 and FINAN_2.WK3). This was accomplished through the use of corresponding Duns numbers and, when necessary, names of firms. Investment grade bond ratings (IGBR), if available, were also appended to Subtitle D firms appearing in this file.

As in the case of the Subtitle C firms, required financial variables, such as total liabilities, net working capital and cashflow, not provided by D&B and necessary for the analysis, were added to existing financial data through various calculations and the use of DD&A ratios. This complete set of financial data was then used to calculate the financial ratios needed to evaluate financial test alternatives through the use of the financial test model.

Data Sources

D&B data
DD&A.WK3
MSWLF_OW.WK3
MSWLF_OP.WK3
FINAN_1.WK3
FINAN_2.WK3
Moody's
Standard & Poor's.

Rows (193)

Rows represent a single firm either owning or operating a MSWLF.

Columns

Columns represent the following data fields:

- DUNS NUMBER. Duns number of the direct owner/operator of a MSWLF.
- HANDLER. Specifies whether the firm is an owner/operator of a MSWLF, TSDf, or both.
- SIC CODE
- COMPANY NAME
- ADDRESS
- CITY
- STATE
- ZIP CODE
- NET WORTH
- NET INCOME
- NET WORKING CAPITAL. Calculated by subtracting current liabilities from current assets.
- CURRENT ASSETS
- CURRENT LIABILITIES
- TOTAL ASSETS
- TOTAL LIABILITIES. Calculated by subtracting net worth from total assets.
- CASHFLOW. Calculated by multiplying the applicable (i.e., corresponding SIC Code) DD&A ratio by total assets, plus net income.
- NET WORTH CATEGORY. Numbers "1" through "5" represent the following net worth categories, respectively (millions of dollars): Less than 1; 1 - 10; 10 - 20; 20 - 100; and greater than 100.
- CF / TL. Cashflow divided by total liabilities.
- TL / NW. Total Liabilities divided by Net Worth
- CA / CL. Current assets divided by current liabilities
- CF-10MM / TL. Cashflow minus \$10 million all divided by total liabilities
- CF-5MM / TL. Cashflow minus \$5 million all divided by total liabilities
- CF * (0.66). (Adjusted Cashflow) Cashflow multiplied by 0.66
- IGBR. A "1" indicates an investment grade bond rating of BBB or better from Standard & Poor's or Baa or better from Moody's. A "0" indicates a bond rating of less than investment grade quality or the absence of a bond rating.
- ULTIMATE PARENT. A "1" indicates a firm as being a "top" (ultimate) corporate parent. A "0" indicates a subsidiary firm and/or direct owner/operator of a MSWLF.

- FA OBS CASE LEVEL - PAR 4 LEVEL. Financial assurance obligations incurred at each level of ownership of a MSWLF.
- TOTAL FA OBLIGATIONS. Sum of all financial assurance obligations (sum of all financial assurance obligations incurred at all levels of ownership).

II.2 FACILITY.WK3

The FACILITY.WK3 file contains information on all TSDf and MSWLF facilities included in the financial test analysis. Specifically, FACILITY.WK3 contains all relevant information necessary to evaluate alternative financial tests using the financial test model. Most notably, this file identifies the direct owner/operator and corporate parents of each facility through the use of Duns numbers for which corresponding financial data were available. (Identified corporate parents without financial information were excluded from the analysis.) This provided a method by which to assess the financial assurance obligations of firms associated with one or more facility. Duns numbers are presented so as to show the succession of direct owner/operator, corporate parent, and top corporate parent firms for each TSDf and MSWLF. A sample of the FACILITY.WK3 file is presented in the Attachment.

II.2.A Subtitle C Facility Worksheet (A)

The ‘Subtitle C Facility’ worksheet contains facility specific information on all TSDfS included in the financial test. Facilities identified in the raw data set (TSDDATA.WK3) for which sufficient information was available were included in this file. A lineage of Duns numbers for direct owner/operator, corporate parent, and top corporate parent firms were appended to the facility data by D&B in order to assess total financial assurance obligations to those firms either owning or operating a TSDf. These firms correspond with those appearing in the ‘Subtitle C Firms’ worksheet presented above.

Closure and post-closure care cost estimates for the above TSDfS are also presented in this file. Closure and post-closure care cost estimates for Subtitle C TSDfS were estimated by comparing cost estimates used in prior financial test analyses with closure and post-closure care cost estimates for TSDfS operating in Texas. Further information on closure and post-closure care cost estimates can be found in the Analysis of Subtitles C and D Financial Test.

Data Sources

D&B data

TSDDATA.WK3

RCRIS.WK3 (Used for clarification on type of facility, when needed).

Attachment I: Cost Estimates for the 1996 Subtitle C Corporate Financial Test Analysis. ICF Report: Analysis of Subtitles C and D Financial Test, April 30, 1996.

Rows (2222)

Rows represent individual TSDfS.

Columns

Columns represent the following data fields:

- RCRIS ID NUMBER
- COMPANY NAME

- SIC CODE
- FINANCIAL ASSURANCE OBLIGATIONS. Financial assurance obligations per facility, based on the type(s) of TSDF and the closure and post-closure costs associated with each TSDF.
- DUNS NUMBER. Duns number of the direct owner/operator of each TSDF.
- PAR 1 - PAR 6. Duns numbers for successive corporate parent firms of TSDF owners/operators.
- ULTIMATE PARENT. Top corporate parent of all firms related to a particular TSDF.
- LANDFILL / INCINERATOR / TREATER/STORER. A "1" indicates ownership of either a treater/storer, incinerator, landfill, or any combination of the three. A "0" indicates ownership of some combination of treater/storer, incinerator, and/or landfill facilities where specific information was unavailable.
- CLOSURE/POST-CLOSURE COSTS. Cost estimates for closure and post-closure care of for treater/storers, incinerators, and/or landfills as reported in the ICF Report. Average costs were assigned to those TSDFs without ownership information.

II.2.B Subtitle D Facility Worksheet (B)

The 'Facility Information Subtitle D' worksheet contains facility specific information on all MSWLFs included in the financial test. Facilities identified in the raw data set (MSWLF_OP.WK3, MSWLF_OW.WK3) for which sufficient information was available were included in this file. The MSWLF_OP.WK3 and MSWLF_OW.WK3 files were combined in this worksheet once connections between their assigned Duns numbers were made, (i.e., owner and operator Duns numbers were consolidated into the common facility entry). The vast majority of landfills had a single owner/operator, or had available financial data for only one or the other. Where financial data were available for both the owner and operator (about two dozen landfills), the owner Duns number(s) were appended as a corporate parent(s) of the operator Dun's number (because the financial test allows corporate guarantees by the corporate parents of facility owners or operators). A lineage of Duns numbers for direct owner/operator, corporate parent, and top corporate parent firms were appended to the facility data by D&B in order to assess total financial assurance obligations to those firms either owning or operating a MSWLF. These companies correspond with those appearing in the 'Subtitle D Firms' worksheet discussed above.

Tons per year data were appended to the facility data from the Landfill Methane Database (maintained by ICF for EPA), USEPA MSW Factbook, and the Directory & Atlas of Solid Waste Disposal Facilities 1994 (Chartwell Information Publishers). In addition, closure and post-closure care cost estimates are also presented in this file. Updated closure and post-closure care cost estimates for Subtitle D MSWLFs were based on inflation adjustments to the cost estimates used in the proposed Subtitle D financial test analysis. Further information on closure and post-closure care cost estimates can be found in the Analysis of Subtitles C and D Financial Test.

Data Sources

MSWLF_OP.WK3

MSWLF_OW.WK3

Landfill Methane Database (maintained by ICF for EPA)

USEPA MSW Factbook

Directory & Atlas of Solid Waste Disposal Facilities 1994 (Chartwell Information Publishers).

Attachment I: Cost Estimates for the 1996 Subtitle C Corporate Financial Test Analysis. ICF Report: Analysis of Subtitles C and D Financial Test, April 30, 1996.

Rows (436)

Rows represent unique MSWLFs.

Columns

Columns represent the following data fields:

- LANDFILL ID NUMBER
- LANDFILL NAME
- OPERATOR NAME
- FINANCIAL ASSURANCE OBLIGATIONS. Financial assurance obligations per facility based on the closure and post-closure care cost estimates associated with each MSWLF.
- DUNS NUMBER. Duns number of the direct owner/operator of each MSWLF.
- PAR 1 - PAR 6. Duns numbers for successive corporate parent firms of MSWLF owners/operators.
- ULTIMATE PARENT. Duns number of the top corporate parent of all companies related to a particular MSWLF.
- TONS PER YEAR. Tons of solid waste processed per year for each individual landfill. Facilities without available tons per year data are assigned "N/A".
- TONS PER DAY. Tons of solid waste processed per day.
- PRELIM COSTS. Closure and post-closure care costs per facility, excluding facilities without tons per year/day data.
- FINAL COST. Closure and post-closure care costs per facility. Facilities without tons per year/day data are assigned the "average" cost of closure and post-closure care.
- TONS PER DAY RANGE. Ranges of tons of solid waste processed per day used to calculate closure and post-closure care costs.
- CLOSURE/POST-CLOSURE COSTS. Costs of closure and post-closure care for landfills by tons per day range.
- ADJUSTED C/PC COSTS. Closure and post-closure care cost estimates adjusted to 1995 dollars.

II.3 BANKRUPT.WK3

The BANKRUPT.WK3 file contains existing bankrupt firm data from the Subtitle C Financial Test Analysis in addition to those bankrupt firms identified by D&B as direct or indirect owners of Subtitle C TSDFs and Subtitle D MSWLFs for which sufficient annual financial information was available. The limited amount of additional bankrupt firm data available from D&B (BANK_DB.WK3) did not provide any data on firms that had more than \$100 million in net worth prior to firm failure, and identified only four firms that had more than \$10 million in net worth prior to firm failure. However, D&B did identify 20 firms with less than \$10 million in net worth prior to firm failure and three years of complete financial data. These additional data were necessary in order to examine financial tests with minimum net worth requirements of less than \$10 million, because the existing bankrupt firm sample included only those firms that failed after reporting more than \$10 million in net worth. In all, 24 firms were extracted from the original BANK_DB.WK3 file and added to the existing bankrupt firm sample. A sample of the complete bankrupt firm sample (BANKRUPT.WK3) file is presented in the Attachment.

(Note: For informational purposes only, an additional worksheet, titled 'BANK_DB.WK3 Extracted Data', contains those bankrupt firms identified by D&B with sufficient information to be added to the existing bankrupt firm sample for the financial test analysis. This worksheet shows how financial variables were calculated so as to be included with the existing bankrupt data.)

II.3.A Bankrupt Firm Worksheet (A)

The 'Bankrupt Firm' worksheet contains data on the complete bankrupt firm sample used in the financial test analysis.

Data Sources

Subtitle C Financial Test Analysis

D&B data

DD&A data

BANK_DB.WK3

Rows (165)

Rows contain three years of financial information for each of the bankrupt firms.

Columns

Columns are represented by the following data fields:

- DUNS NUMBER. Duns number of the bankrupt firm.
- BANKRUPT FIRM
- YEAR. Specifies which of the three years, prior to the year of bankruptcy, for which financial information is provided.
- BANKRUPT DATE. Specifies the year in which the firm declared bankruptcy (available for the "existing" bankrupt firms only).
- NET WORKING CAPITAL.
- CASHFLOW. Calculated by multiplying the applicable (i.e., corresponding SIC Code) DD&A ratio by total assets, plus net income.
- CF / TL. Cashflow divided by total liabilities.
- CF - \$5MM / TL. Cashflow minus \$5 million all divided by total liabilities.
- CF - \$10MM / TL. Cashflow minus \$10MM all divided by total liabilities.
- TL / NW. Total liabilities divided by net worth.
- CA / CL. Current assets divided current assets.
- MIN NW Category. Minimum net worth category of the bankrupt firm. A "1" indicates a minimum net worth of greater than \$5 million.

Section III: Financial Test Model

Section III presents a description of the financial test model used to evaluate alternative financial tests in the Subtitles C and D analysis. The model incorporates data from those sources as described and presented in Sections I and II of this report. Background information on additional data sources and definitions presented in this section can be found in the in the ICF Report: Analysis of Subtitles C and D Financial Test (April 30, 1997). All files necessary to run the financial test model are included in the attached electronic files.

III.1 Components of the Financial Test Model

The financial test model evaluates alternative financial tests for both Subtitle C and D firms. By construction, the model is identical in function for both the Subtitles C and D firm analyses. The only difference between evaluating financial test alternatives for Subtitles C and D firms is the data specific to each as presented in their respective files (SUBDTEST.WK3 and SUBCTEST.WK3). As previously mentioned in Section II, the same bankrupt firm sample is used for both analyses.

This section presents the basic components of the financial test model. Since the model is identical in function for both the Subtitles C and D firm analyses, only Subtitle D information will be used for descriptive purposes.

III.1.A Determination of Test Availability (A(f)) and Coverage of Financial Assurance Obligations (A(\$)): Financial Test Candidates

Files Used

SUBDTEST.WK3

Worksheets

RESULTS (A). Records firm-based availability, dollar-based availability and private costs of each alternative financial test. Results are copied and placed to the right of the results summary area after each test run to be referenced by other financial test files and worksheets to calculate M(\$)¹ and private costs.

FINTEST (B). Contains firm data and the 'Test Parameters' box (described below) necessary to evaluate the ability of firms to pass alternative financial tests and/or cover financial assurance obligations.

MSWLF Good (C). Contains facility data. Financial assurance obligations per facility are referenced by the FINTEST worksheet to determine the amount of obligations that must be covered by each firm for any particular test.

NW Breakdown (D). Records the total amount of financial assurance obligations, by net worth category, covered by firms in each financial test run.

Firm-Based Availability: A(f)

The financial test model first determines the ability of Subtitles C and D firms to pass a specific financial test. Each alternative financial test requires that firms pass a combination of minimum net worth, bond rating, and ratio requirements as described in the Final Rule. Generally, a firm must pass the minimum net worth requirement and either have an investment grade bond rating or pass one out of two ratio requirements. For each given test, the specific ratio and minimum net worth requirements are entered into a 'Test Parameters' box that is referenced for each financial test run. These values indicate the specific thresholds for the ratio requirements of each test, whether the cashflow ratio is based on total or adjusted cashflow, whether there is an additive or multiple requirement, and the minimum net worth requirement.

The model then determines the ability of each firm to pass the specific requirements of the test by 'looking up' the financial ratios of each firm (Section II: Financial Test Data) and evaluating their ability to 'pass' the specific test requirements entered in the 'Test Parameters' box. If a firm passes the minimum net worth requirement and has either an investment grade bond rating or passes one out of the two ratios, then that firm is identified as having passed the financial test and is therefore eligible to cover all or part of its financial assurance obligations using the test. The number of firms passing the financial test ratio requirements are then divided by the number of financial test candidates (i.e., all firms in the financial test analysis), resulting in a percentage known as the firm-based availability (**A(f)**) of the test.

Dollar-Based Availability: A(\$)

Firms passing the financial test (i.e., meet the specific requirements of the test) are next evaluated as to their ability to cover all or part of the financial assurance obligations for which they are responsible. (Firms that do not pass the financial test are not evaluated as to their ability to cover their financial assurance obligations.) Firms begin this analysis with a predetermined net worth that is determined by the specific financial test being evaluated. While minimum net worth, bond rating, and ratio requirements determine whether a firm can use the financial test at all, multiple and additive requirements entered into the 'Test Parameters' box limit and/or determine the amount of financial assurance obligations that a firm can cover using the financial test.

The firm's adjusted net worth is then used to cover the cost of the financial assurance obligations associated with each of its facilities (MSWLFs or TSDFs). A firm may be responsible for financial assurance obligations as a direct owner or operator of a facility or as a corporate parent. The financial test model first determines the ability of each firm to cover its obligations at the direct owner/operator level by comparing financial assurance obligations to the firm's net worth. If a firm is able to cover all of these obligations, the remaining net worth amount (net worth minus financial assurance obligations) is used to cover obligations incurred, if any, as a corporate parent. If a firm can not cover all of its financial assurance obligations at the direct owner/operator level, these obligations are 'passed up' to the firm's corporate parents to determine their ability to cover these costs.

Firms indicated as a top (ultimate) corporate parent may provide partial coverage for its subsidiaries (owner/operator and corporate parents) and therefore can cover all or part of the financial assurance obligations. It is important to note that ultimate parents also have owner/operator financial assurance obligations that must be assured before taking on the obligations of its subsidiaries. The total amount of obligations covered by each test is divided by the sum of all financial obligations, resulting in a percentage known as the dollar-based availability (**A(\$)**) of the test.

Private Costs

Private costs are costs incurred by firms that are unable to assure all or part of their financial assurance obligations, thereby requiring the use of a third party mechanism. Private costs of alternative financial tests are calculated by subtracting the amount of financial assurance obligations covered by the test from the total amount of financial assurance obligations. The resulting amount is then multiplied by the ratio “s”, which is a ratio used to determine the cost of obtaining a financial assurance mechanism. This resulting amount represents the private cost of the financial test as reported in the Analysis of Subtitles C and D Financial Test.

III.1.B Determination of Test Availability (M(f)) and Non-Coverage of Financial Assurance Obligations (M(\$)): Bankrupt Firms

Files Used

BANKRUPT.WK3
DD&A.WK3
SUBDTEST.WK3

Worksheets

allbnkrpt (A). Contains the bankrupt firm sample. This worksheet determines the ability of bankrupt firms to pass the various financial test alternatives in any of the three years prior to filing for bankruptcy. This worksheet roughly corresponds to the FINTEST worksheet of the SUBDTEST.WK3 file in that both determine financial test availability.

Mf (B). Presents the results of the ‘allbnkrpt’ worksheet analysis and records the net worth categories to each firm.

setup (C). Contains ratio calculations for those additional firms (firms added to the existing bankrupt firm sample of the Subtitle C analysis) appearing in the BANKRUPT.WK3 file presented in Section II. DD&A ratios from the DD&A.WK3 file are referenced to calculate cashflow figures for each bankrupt firm.

Results (D). Presents the results of the ‘allbnkrpt’ analysis and provides actual M(\$)² figures for bankrupt firms, by net worth category, for each alternative financial test.

Public Costs Calculator (Sub D) (E). Determines the public costs of alternative financial tests for the Subtitle D analysis.

Public Costs Calculator (Sub C) (F). Determines the public costs of alternative financial tests for the Subtitle C analysis.

Firm-Based Availability: M(f)

Firm-based availability for the bankrupt firm sample is calculated in the same way as was calculated by the financial test model for non-bankrupt firms in the ‘FINTEST’ worksheet of SUBDTEST.WK3. The M(f) figure is an integral part of the financial test analysis because it represents the percentage of firms in the bankrupt sample that can pass the ratio requirements of the test and later fail without covering their financial assurance obligations. M(f) results from this analysis

of bankrupt firms are ultimately presented in the ‘Results’ worksheet, by net worth category, for use in determining firm-specific dollar estimates (M(\$)) of financial assurance obligations as discussed below.

Dollar-Based Availability M(\$)

As discussed in the Analysis of Subtitles C and D Financial Test, data were unavailable to develop firm-specific dollar estimates of closure and post-closure care costs for firms in the bankrupt sample. Therefore, it was not possible to directly calculate a dollar-based misprediction rate (M(\$)) - i.e., the amount of financial assurance obligations associated with bankrupt firms that pass the financial test and later fail without covering these obligations. A dollar-based misprediction rate for bankrupt firms was therefore derived for each alternative financial test using the following formula:

$$M(\$) = A(\$) * (M(f) / A(f))$$

The financial test model estimates M(\$)) for each alternative financial test, by net worth category, by referencing corresponding test and net worth category data for A(\$)) and A(f)) from the ‘RESULTS’ worksheet of the SUBDTEST.WK3 file (non-bankrupt firm sample). M(\$)) is then calculated in the ‘Public Costs Calculator (Sub D)’ worksheet to be used in calculating the private costs of alternative financial tests, as discussed below.

Public Costs

Public costs of the financial test are costs incurred by the public resulting from financial test mispredictions and subsequent firm failure (bankruptcy). Specifically, public costs are financial assurance obligations associated with bankrupt firms that must be assumed by the government (public). Public costs of alternative financial tests are calculated using the dollar amounts of financial assurance obligations covered by the test in the non-bankrupt firm sample multiplied by the M(\$)) estimate for each financial test alternative by net worth category. The resulting amount is then multiplied by net worth specific ratios to determine final public costs of the test. These ratios include: “f” (failure rate); “r” (recovery rate); and “o” (overhead rate of costs associated with recovery). These costs represent the public costs presented in the Analysis of Subtitles C and D Financial Test

III.1.C Financial Test Results

Results of the above analyses are summarized in the RESULTS.WK3 file. Subtitle D results are recorded in the ‘Subtitle D Results’ worksheet as are Subtitle C results in the ‘Subtitle C Results’ worksheet. Results of each financial test alternative are recorded in the columns corresponding to a particular test. These results are broken down by net worth category as follows:

- Test Parameters and Descriptions
- A(\$))
- M(\$))
- Public Cost
- Private Cost
- Total Cost
- M(f) / A(f))

Detailed print outs for all test results can be found in the ICF Report: Analysis of Subtitles C and D Financial Test (April 30, 1997).

Attachment

The Attachment presents samples of the various data as described in the above sections and as presented in the attached electronic files. Samples are presented in the order as discussed in Sections I, II and III.

The electronic files are organized onto five disks as follows:

Disk 1 - Raw Data (1)

Disk 1 contains the following files in “zipped (*.zip)” format:

- RCRIS.WK3

Disk 2 - Raw Data (2)

Disk 2 contains the following files in “zipped (*.zip)” format:

- TSDDATA.WK3
- MWSLF_OW.WK3
- MSWLF_OP.WK3

Disk 3 - Raw Data (3)

Disk 3 contains the following files in “zipped (*.zip)” format:

- FINAN_1.WK3
- FINAN_2.WK3
- DD&A.WK3
- BANK_DB.WK3

Disk 4 - Financial Test Data

Disk 4 contains the following files in “zipped (*.zip)” format:

- FIRM.WK3
- FACILITY.WK3
- BANKRUPT.WK3

Disk 5 - Financial Test Model

Disk 5 contains the following files in “zipped (*.zip)” format:

- SUBDTEST.WK3
- SUBCTEST.WK3 (Excluded due to insufficient disk space, i.e., file is greater than 1.5MB)
- BANKRUPT.WK3
- RESULTS.WK3
- DD&A.WK3

ACTUAL DATA SHEETS ATTACHED TO THIS MEMORANDUM ARE ONLY AVAILABLE IN THE PAPER DOCKET.