Subtitle C and D Corporate Financial Test Analysis
Issue Paper
Recent Consolidation and Acquisitions Within the Solid Waste Industry

In response to the proposed Subtitle D corporate financial test rule of October 12, 1994, many commenters expressed concerns related to the rapid expansion and consolidation of the Subtitle D industry. Specific issues raised by commenters included:

- The Agency's stated lack of MSWLF bankruptcy risk statistics for the financial test analysis does not appear valid;
- As a result of expansion and consolidation within the Subtitle D industry, the nation's financial risk of environmental obligations is becoming increasingly concentrated in a small number of very large firms;
- Due in part to aggressive acquisition plans, the largest MSWLF firms have become more highly leveraged than smaller firms and are therefore at greater risk of bankruptcy; and
- The acquisition of existing landfills and the development of new facilities results in a net consumption of cash and liquidity. However, the proposed financial ratio test makes no provision for liquidity; neither the profitability ratio nor the leverage ratio address the cash and liquidity levels of the landfill companies.

This issue paper analyzes the recent consolidation within the Municipal Solid Waste Landfill (MSWLF) industry and the rapid growth of the industry's largest firms. The key findings of this paper, in summary, are:

- Only recently have there been a significant number of MSWLF firms with sufficient net worth to take advantage of a financial test. Therefore, the Agency was not able to develop a bankrupt firm sample of Subtitle D firms in conducting the financial test analysis;
- Although larger firms have rapidly expanded, developed, and acquired landfills, this consolidation of environmental liabilities does not necessarily indicate an increase in financial risk;
- Because of the capital-intensive nature of the industry, many large MSWLF firms are highly leveraged. In most cases, however, large cash flows that are characteristic of the MSWLF industry offset significant risk of bankruptcy associated with high leverage ratios; and
- Large companies generally have access to cash through lines of credit from banks, and should have the capacity to arrange secured lending even in the event of financial difficulties.

The remainder of this paper is organized into five sections. Section 1 briefly discusses trends in industry consolidation since EPA's 1986 survey of MSWLFs. Section 2 responds to commenters' assertions that a Subtitle D bankrupt firm sample should have been used in the Subtitle D financial test analysis. Section 3 addresses concerns raised by commenters that

consolidation within the industry has increased the financial risk to the public associated with environmental liabilities. Section 4 examines the leverage ratio issues within the Subtitle D industry. Section 5 examines liquidity issues within the Subtitle D industry.

1. Background on Municipal Solid Waste Landfill Growth and Consolidation

Prior to the proposal of the technical criteria for Subtitle D landfills in 1988, the municipal solid waste landfill (MSWLF) industry was predominantly comprised of a large number of small government-owned landfills. A survey of MSWLFs conducted by the Agency in 1986 estimated that nearly eighty-five percent of all landfills in the U.S. were owned by federal, state, or local governments. Over eighty percent of these landfills handled less than 17.5 tons per day. Private landfills, on the other hand, accounted for only fifteen percent of the total number of landfills. Although these private landfills were generally larger than publicly-owned landfills, less than a third handled more than 275 tons per day.

Since 1988, the total number of MSWLFs has declined rapidly. According to a *BioCycle* magazine annual nationwide survey published in 1995,[1] the total number of MSWLFs dropped from 8,000 to 3,558 between 1988 and 1994 -- a reduction of 57 percent. Although historical data on the number of MSWLFs is imprecise, Exhibit 1 demonstrates that several sources confirm the sharp decline in the total number of landfills.[2]

Exhibit 1
Estimated Number of MSWLF Landfills

EXHIBIT 1 COULD NOT BE ELECTRONICALLY REPRODUCED AND IS ONLY AVAILABLE IN THE PAPER DOCKET.

In contrast to the decline in the number of operational landfills, *BioCycle*'s survey of remaining capacity in 21 states conducted in 1990 and 1993 found that capacity in these states actually increased by 68 percent. The net increase in capacity is the direct result of the expansion in the capacity of existing landfills and the development of additional large regional landfills by the private sector.

[1] "The State of Garbage in America," BioCycle, April 1995. Data reported in the annual survey is based on information from solid waste management officials and other sources, including state recycling associations. The survey tracks nationwide and regional trends in municipal solid waste management practices.

[2] Exhibit taken from EPA/OSW, Report to Congress on Flow Control and Municipal Solid Waste, March 1995, p III-64.

In an analysis that accompanied the survey results, *BioCycle* stated that "the facilities that closed were often small, substandard, and publicly owned. Far fewer, but much larger, facilities are opening."

According to the EPA's 1994 Report to Congress on Flow Controls and Municipal Solid Waste (the Flow Control Report), the thirteen largest firms in the industry currently own over 350 landfills ranging in capacity between 500 and 1500 tons per day, with a few facilities having capacities greater than 2,000 tons per day. A review of the largest private companies in the industry confirms this general trend toward opening large new landfills, expanding existing facilities and acquiring smaller facilities with expansion potential. For example,

- Waste Management reported in 1992 that it was developing 30 new sites and expanding approximately 50 other sites.[3] In recent years however, the company has slowed its rate of acquisitions and expansions.

- Sanifill reported that through internal development alone, it replaced over seven times the permitted capacity it consumed in 1993.[4]

Exhibit 2 shows that the industry has experienced further consolidation in the two years since the original Subtitle D financial test analysis. During that time, two of the firms in the original analysis have been acquired by other large firms. This exhibit also shows that these large companies report essentially the same total number of landfills as in 1991, even as thousands of smaller government-owned landfills have closed. These divergent trends indicate that the market share for these large firms has increased. In the Flow Control Report, the Agency estimated that by 1992, the private sector represented a fifty-five percent market share of the MSWLF industry. Over half of the private sector market share was owned by large, publicly-held firms.

[3] Waste Management Services, Inc., 1992 Annual Report, page 23.

[4] Sanifill, 1993 Annual Report, page 15.

Exhibit 2
Number of Landfills Owned by Financial Test Candidates in 1991 and 1994

Firm[5]	Number of Landfills (1991)	Number of Landfills (1994)
Waste Management	130	134
Browning-Ferris Industries Attwoods	100 3	103 (Included in BFI)
Laidlaw	35	25
Mid-American Waste Systems	21	20
Western Waste Industries	8	6
Sanifill	14	13
Republic Waste Industries	8	9
Eastern Environmental Service	2	3
USA Waste Chambers	4 17	25 (Included in USA Waste)
American Waste Services	3	3
Total	345	341

Source: The figures for 1991 were taken from the technical background document for the proposed Subtitle D corporate financial test. The figures for 1994 were taken from the companies' annual reports. In some cases, the companies were contacted directly.

2. Selection of Non-Bankrupt Firm Sample

The solid waste industry as it currently exists is a relatively new industry. Of the thirteen firms that comprise the non-bankrupt firms sample for the original analysis, four (American, Mid-American, Republic, and Sanifill) made initial public stock offerings in 1990.[6] Even the three largest companies in the industry, Waste Management, BFI, and Laidlaw, have been in the solid waste industry for less than thirty years. Waste Management and BFI were incorporated in 1968 and 1970, respectively. Laidlaw, formerly a trucking company, entered the solid waste industry in 1969 and concentrated its management attention and financial resources in the Subtitle D industry only in 1983.[7] Since their entry into the market, however, these companies have grown at tremendous rates. Between 1983 and 1993, Waste Management's net worth has increased five times, BFI's three times, and Laidlaw's fifteen

[5] Although included in the original non-bankrupt firm sample, Norcal is not publicly-owned, and updated information on the landfills owned by the company was not available.

[6] Flow Control Report, p III-72.

[7] Laidlaw Inc., 1994 Form 10-K, page 1.

times.[8] Therefore, only recently have there been a significant number of solid waste companies with sufficient net worth to take advantage of a financial test.

The misprediction rate used in the financial test analysis must be reflective of the types of firms that are able to use the test. As recently as the mid-eighties, there appear to be as few as three firms in the industry with sufficient net worth to be eligible for the test. Therefore, the Agency had no historical data to calculate a misprediction rate specific to this industry. Although it may have been possible to collect data on much smaller firms in the industry that have entered bankruptcy, such data would not have been representative or appropriate in conducting the financial test analysis.

3. Relationship Between Consolidation and Financial Risk of Environmental Liabilities

One commenter stated that large Subtitle D companies operate over one hundred MSWLF facilities. The commenter argued that because of this consolidation, the financial risk of environmental obligations is concentrated in a small number of firms. The commenter further expressed concern over the fact that despite the concentration of risk in these firms, they are the ones that will benefit from the "eased financial assurance requirements" provided by the financial test.

Although the largest firms in the industry have grown rapidly and therefore have assumed large environmental obligations, these firms could not satisfy the requirements of the financial test unless their assets and net worth had also increased. In general, consolidation would increase risk if a company financed its acquisitions primarily through debt. However, this increased debt would be reflected in a high leverage ratio. If a Subtitle D firm becomes so highly leveraged that it is at risk of bankruptcy, it would be unable to pass either the bond rating or ratio alternatives of the financial test (as discussed in the next section of this issue paper). Unlike debt-financed acquisitions, acquisitions financed through additional paid-in equity capital or retained earnings, do not necessarily increase a firm's financial risk, and may actually decrease financial risk for three reasons: (1) issuance of new equity capital actually adds to a firm's net worth; (2) higher net worth reduces firm failure rates on average; and (3) regional diversification should reduce the financial risk associated with regional economic downturns.

Many of the industry's largest companies have financed their acquisitions through paid-in equity capital and retained earnings. For example, to finance many of its major acquisitions between 1990 and 1993, including the purchase of Envirofill and Chambers (a company larger than USA Waste at the time of acquisition), USA Waste issued additional common stock.[9] In fact, an examination of recent (1990-1992) financing activities of major publicly-held firms in the industry documents substantial cash flows raised through issuance of common stock. Exhibit 3 shows the nearly $1.25 billion equity capital raised by selected landfill companies. These landfill firms also raised substantial capital through retained earnings. Companies have been able to raise this investment capital on the basis of their general business prospects, not

[8] The Value Line Investment Survey, December 23, 1994, pages 344, 348, and 353.

[9] USA Waste, 1993 Annual Report, p 25.

on the basis of specific proposed developments.[10] The MSWLF industry's use of paid-in equity and retained earnings are discussed further in the next section on leverage ratios.

The Subtitle C and D corporate financial test analyses indicate that the risk of bankruptcy is inversely related to tangible net worth. This firm failure rate is further reduced by the financial test which is designed to screen out firms with the highest risk of failure. Combining the failure rate for all firms with the misprediction rate of the financial test indicates that the assurance risk of the largest firms (net worth > $1 billion) is less than one half of the assurance risk of smaller firms (net worth $10-$20 million). For a more detailed discussion, see issue paper related to relevant risk factors of assurance risk. Therefore, to the extent that they have increased the firms' net worth, acquisitions financed through issuance of common stock can actually reduce a company's financial risk.

Exhibit 3
Equity Raised Through Issuance of Common Stock ($MM)

Company	1990	1991	1992
American	60.2	0.2	0.5
Chambers	--	164.7	--
Eastern	5.3	10.7	--
Laidlaw	448.8	42.2	217.2
Mid-American	75.5	93.4	20.6
Republic	13.5	30.5	11.5
Sanifill	9.6	2.0	--
USA	4.2	2.8	--
Western	27.9	1.0	1.3
Total	645.0	347.5	251.1

The Flow Control Report also suggests that regional diversification resulting from industry consolidation could reduce the financial risk of firms in the MSWLF industry. This analysis found that regional landfills use land more efficiently. However, because these additional economies of scale are minimal for facilities exceeding 750 tons per day, transportation costs and transfer facility costs would eventually render long-distance waste hauling non-competitive.[11] Therefore, owners and operators with a single facility are susceptible to regional economic fluctuations. However, larger firms with landfills in multiple regions should have a more reliable average cash flow because they are less affected by economic downturns specific to an individual region.

4. Leverage Ratios

One commenter stated that due to aggressive acquisitions, the large MSWLF firms have become highly leveraged. The commenter argued that high debt to net worth ratios generally contribute to bankruptcy risk and that despite this concentration of risk, these firms are able to take advantage of the lower-cost financial test.

The largest firms in the MSWLF industry generally become highly leveraged. For example, during 1988, Waste Management made the decision to finance capital expenditures and acquisitions primarily by increasing leverage. During 1991, 1992, and 1993, the company

[10] EPA/OSW, Flow Control Report, III-72.

[11] Flow Control Report, p III-70-71.

continued to finance these transactions primarily through the use of debt. However, in 1994, the company placed increased emphasis on cash flow and reduced its leverage ratios. This emphasis is expected to continue in 1995.[12]

Industry experts agree that although some large firms within the MSWLF industry may be highly leveraged, they are not generally at risk of bankruptcy. One expert stated that, in general, the largest municipal solid waste management companies are "not in danger of bankruptcy. [Because of their] stable cash flow, it makes sense for these firms to be highly leveraged."[13] These firms have already made most or all of the large capital expenditures required to comply with the stricter liner and site management requirements of RCRA Subtitle D and the large cash flow generated by their landfills should more than cover the interest on their debt.

As noted above in section 3, large MSWLF companies have not necessarily used increased leverage to finance their acquisitions. In its major acquisitions between 1990 and 1993, including the purchase of Envirofil and Chambers, USA Waste used common stock almost exclusively.[14] Most companies use a combination of debt and equity in their transactions. Sanifill, for example, reported that it had concluded seven financing transactions in five capital markets during 1993. Of the nearly $80 million in Sanifill's acquisitions, approximately half was financed by common stock, and retained earnings while the other half was financed through bank debt and senior notes.[15]

If a firm does become so highly leveraged that it is at risk of bankruptcy, it would very likely be unable to pass either the ratio alternative or the bond rating alternative of the financial test. In order to pass the ratio alternative of the financial test, a firm would have to demonstrate either a leverage ratio of less than 1.5, based on the ratio of total liabilities to tangible net worth, or a profitability ratio of greater than 0.10, based on the ratio of the sum of net income plus depreciation, depletion, and amortization minus $10 million, to total liabilities. Because "total liabilities" appear in both ratio tests, a highly leveraged firm is unlikely to be able to pass either ratio requirement. A firm could also satisfy the financial component of the financial test if its most recent bond rating is investment grade. If a firm is so highly leveraged that it is at risk of bankruptcy, this risk will be reflected in the bond rating assigned to that firm.[16] Therefore, such a firm would not be able to pass the bond rating alternative either.

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[12] WMX Technologies, Inc, 1993 Annual Report, p 39.

[13] ICF interviews with David Trossman, Analyst, Alex. Brown and Sons; Andrew Barrish, Vice President of Environmental Research, Robertson, Stephens, and Co.; and David R. Cohen, Value Line, Inc, April 17, 1995.

[14] USA Waste Services Inc., 1993 Annual Report, pages 25-6.

[15] Sanifill, 1993 Annual Report, page 15.

[16] Further discussion of the bond rating alternative can be found in a separate issue paper, "Issues Relating to the Bond Rating Alternative of the Corporate Financial Test," contained in the docket supporting the final rule.

In summary, our findings indicate that the proposed financial test takes into account the risk of bankruptcy associated with a highly leveraged company. A firm so highly leveraged that it is at risk of bankruptcy will be unable to use the financial test.

5. Liquidity

One commenter has criticized the financial test because it makes no provision for liquidity. The commenter stated that a landfill company's assets are not generally flush with cash and therefore the net worth requirement does not reflect the company's ability to monetize closure, post-closure, and corrective action costs. The commenter further argued that because of the ongoing consolidation in the industry, companies will continue to acquire and develop landfill facilities, resulting in a net consumption of cash and liquidity.

The Agency's financial test analysis found that, in contrast to the profitability and leverage ratios, liquidity ratios are particularly poor discriminators between bankrupt and non-bankrupt firms. As discussed in the preamble to the proposed Subtitle C financial test rule, the Agency evaluated each financial measure using availability and misprediction as performance criteria. The better ratios had a greater difference between the availability rate and the misprediction rate. The liquidity ratio (current assets to current liabilities) had a very small difference or a negative difference.[17] This result is not surprising because firms that are going bankrupt will often liquidate assets to meet their pressing cash obligations. In the short run, therefore, firms may have high liquidity ratios prior to bankruptcy as they attempt to meet creditor demands.

The Agency's original 1991 financial test analysis determined that liquidity measures may be particularly inappropriate measures of financial strength for specific industries. In fact, one of the principal reasons for adding the bond rating alternative to the test was because it was determined that the net working capital requirement of the original test (which measured net liquidity by subtracting current liabilities from current asserts) unfairly discriminated against electric utilities:

> Utilities objected to the use of net working capital as a required component of a financial test, since many firms in each category operate regularly from a negative net working capital. As a result, any test which requires that net working capital be some multiple of financial responsibility obligations will fail most utilities.[18]

The Agency concluded that net working capital and other liquidity measures were not appropriate measures of financial strength in this industry. Those conclusions may also apply to large MSWLF firms, because the firms are similar to electric and gas utilities in the sense that both industries make very large initial investments that generate relatively steady, predictable cash flows over a period of many years. The similarity of these industries is also

[17] 56 FR 30207.

[18] EPA/OSW, Background Document for the Financial Test and Municipal Revenue Test Financial Assurance for Closure and Post-Closure Care, November 30, 1981, p VI-8.

reflected in the fact that Dun and Bradstreet's Business Failure Record[19] reports a single failure rate for "electric, gas, and sanitary services" (including MSWLF firms) even though this report distinguishes between failure rates for more than one hundred different types of industries. The Dun and Bradstreet data also confirms that liquidity may be an especially poor measure of financial strength for utilities and MSWLF firms, because the failure rate reported for this industry category is actually lower than the rate reported for manufacturing firms and for most other industries.

The relatively predictable cash flows generated by utilities and large MSWLF firms appear to make liquidity less important for these firms. In addition to providing a direct source for cash from business operations, these cash-flows are also likely to facilitate secured lending to cover any short-term cash requirements. This may explain the finding that utilities often issue secured bonds (see bond paper for discussion of secured vs. unsecured bonds). In the case of a large MSWLF firm, cash requirements related to any single facility or group of facilities (e.g., for premature closure) could almost certainly be arranged through a bond loan (or bond) secured by the cash flow from other facilities owned by the firm.

[19] Dun and Bradstreet, Business Failure Record, 1995, p 7.

References

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