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**A SURVEY TO MEASURE THE IMPACTS OF  
PUBLIC OUTREACH STRATEGIES ON  
COMPLIANCE WITH ENVIRONMENTAL REGULATIONS**

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The information contained in this report is based on interviews, research and publications available to the author. The opinions and assertions contained in the paper are the author's and not to be construed as official or reflecting the views of the U.S. EPA.



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## **I. Executive Summary**

This study was commissioned by the United States Environmental Protection Agency (EPA) to determine if awareness of environmental regulations influences compliance, and what public outreach strategies are most effective in increasing awareness. A telephone survey, which focused on The Emergency Planning and Community Right-to-Know Act (EPCRA), was conducted on 100 manufacturing companies in the six Mid-Atlantic states.

The data show that 75 percent of the companies interviewed had fewer than 60 employees and represented many types of manufacturing industries. In addition, 64 percent of the respondents hailed from Pennsylvania.

This survey produced significant statistical data which is described in detail in the main report. Below are highlights of some of the findings and conclusions. For an indepth analysis, refer to Findings and Conclusions on page 13 and Appendix A for Tables and Charts.

\* Long-term strategies such as continually publicizing enforcement actions against companies are more effective than one-time press releases. (See Table 12)

\* The majority of companies agree that press releases do act as a deterrent but alone are not sufficient to enable companies to comply with environmental regulations.

\* Companies are looking for more educational material from the EPA on how to comply with environmental regulations.

\* Companies repeatedly asked for more plain English direct mailings and easy to understand local seminars from the EPA,

state and local agencies. (See Table 13)

\* There is a strong correlation between the size of a company and its familiarity with EPCRA regulations; larger companies tend to be more familiar with EPCRA than smaller ones. (See Tables 3 & 4)

\* More than 73 percent of the respondents are somewhat familiar or fully knowledgeable about EPCRA. (See Pie Chart 1)

\* Over 90 percent of respondents agree that better awareness of EPA regulations increases compliance. (See Table 5)

\* When companies were asked what information sources they use to keep them informed about environmental regulations, 77 percent cited a wide range of trade publications. (See Table 10 and Appendix G)

\* Most companies use more than one information source to keep informed about environmental news and information. (See Bar Chart 2)

\* By utilizing five sources, the EPA could reach 86 percent of these affected industries. When six sources are used the number increases to 94 percent. (See Bar Chart 2)

\* 29.2 percent of companies turn to their state environmental agencies for advice. 16.7 percent turn to other sources which include trade associations and chambers of commerce. (See Table 11)

\* Companies agree that the government should be primarily responsible for informing them about environmental issues.

(See Table 11)

\* Companies are looking for more direct involvement from local governmental agencies in informing them about regulations.

\* Companies recognize that they need help from the government in better educating themselves.

Read on for more detailed information!

## II. Introduction

### A. The Central Issue:

How do manufacturing companies that produce toxic chemicals learn about the EPA's regulations and what is the relationship between how these companies learn about the regulations and how they might comply with these regulations?

In order to analyze this issue and determine viable recommendations for improving public outreach strategies, it was necessary to evaluate the effectiveness of the EPA's current public outreach program. This was accomplished by conducting a random telephone survey of 100 manufacturing companies throughout the EPA's Region III, which includes Pennsylvania, Delaware, Maryland, Virginia, West Virginia and the District of Columbia.

This report contains the results of this survey, including descriptive statistics and a preliminary multivariate analysis of the variables that affect awareness and compliance with EPA regulations. Although the study focuses on EPCRA, these results can be used to assess general communication strategies that apply to all environmental laws regulated by the EPA.

## B. The Key Questions:

There are six key questions addressed in this study. These questions represent the interrelated issues that must be analyzed in order to answer the central issue. The questions are arranged in the order that they will be discussed in the report.

- \* 1) What are the characteristics of the companies interviewed?
- \* 2) What are the factors that influence manufacturing companies' compliance with EPA regulations?
- \* 3) To what extent are manufacturing companies in these regulated industries familiar with EPA regulations, specifically EPCRA?
- \* 4) How do manufacturing companies that produce or use toxic chemicals regulated by the EPA learn about EPA regulations such as EPCRA?
- \* 5) Which outreach strategies followed by the EPA are more likely to increase awareness and possibly compliance with EPA regulations such as EPCRA?
- \* 6) How can the EPA improve the process by which manufacturing companies learn about EPA regulations?

This research attempts to answer these questions and develop an initial outreach strategy for increasing the regulated community's awareness of environmental regulations.

## **III. Literature Review**

### A. Background on EPCRA:

EPCRA is under the Superfund Amendments and Reauthorization Act of 1986 (SARA). It is also referred to as SARA Title III. This Act requires all levels of government to monitor the releases of toxic and hazardous chemicals by industry, develop



emergency planning strategies and compile data on toxic emissions which is then made available to the public.

EPCRA "...has four major sections: emergency planning (Section 301-303), emergency release notification (Section 304), community right-to-know reporting requirements (Section 311, 312) and toxic chemical release inventory (Section 313)." (US EPA, Feb. 1990 p. 1). This study focuses on Section 313 which requires the EPA to establish an inventory of the quantities of 300 toxic chemicals released each year into the environment by manufacturing companies.

In order to be subject to compliance under Section 313, facilities must meet certain criteria. This includes the following; having more than ten employees, having Standard Industrial Classification (SIC) Codes between 20 and 39 (these encompass all manufacturing industries), and processing, handling or otherwise using one or more of the 300 toxic chemicals subject to reporting. Facilities that meet all of these requirements must submit Toxic Chemical Release Inventory Forms (Form Rs) to the EPA and designated state facilities annually. This Toxic Release Inventory (TRI) data is available each year to the public through a computer database and a published report.

Because of the time constraints and limited scope of this study, it was not feasible to survey companies on every environmental law subject to EPA regulations. There are two major reasons why the EPA chose to study Section 313 of EPCRA. The first reason is EPCRA's relative obscurity. Unlike Superfund, which is a widely publicized and generally well-known environmental law, EPCRA is thought to be less well-known to both the general public and the manufacturing companies subject to compliance.

The second reason involves the timing of the 1993 EPCRA National Initiative and the release of the 1992 TRI data. A National Initiative occurs when EPA Headquarters arranges for participating regional offices to simultaneously issue enforcement actions against violators of a particular piece of legislation. Just before this study began (in late June of 1993) the EPA had released a National Initiative for Section 313 of EPCRA. In addition, the previous week EPA Administrator, Carol Browner, had announced the release of the 1992 TRI data. This enabled the researcher to not only measure the effects of general EPA public outreach strategies, but also determine how effective press releases are in publicizing enforcement actions and announcing recent EPA events.

#### B. Previous Studies:

According to the TRI data report from 1988, entitled *Toxics in the Community: National and Local Perspectives*, there are over 150,000 manufacturing facilities nationwide which have 10 or more employees and the SIC codes subject to TRI reporting. However, only 13 percent (or around 20,000) of the facilities actually reported in 1988. The EPA asked the question, "Does this 13 percent reflect the total number of facilities that have the threshold limits which require reporting?" In order to answer this question, the EPA conducted a survey of facilities that are potentially subject to reporting under EPCRA. (*Toxics in the Community*, p. 72).

The report does not provide a full explanation of the survey. It does not explain how many companies were surveyed, the confidence level for the survey, or the response rate for the interviews. It does mention that the surveys were conducted over

the telephone. The survey yielded the following results.

The overall compliance rate for 1987 was 66 percent. The EPA estimates that an additional 10,000 companies should have reported in 1987. The compliance rate differed depending upon the type of industry. The chemical industry had a compliance rate of 88 percent. Instrument manufacturers, electrical equipment manufacturers and the petroleum industry had compliance rates close to 80 percent. The apparel industry had a low compliance rate of 13 percent and the printing and publishing industry had a rate of 31 percent.

According to this report, medium-sized companies (between 20-49 employees) had the lowest compliance rates, whereas large companies had the best compliance rates. Small companies also had relatively high compliance rates. One hypothesis for this is that fewer small companies need to comply and large companies are more aware of the reporting requirements than medium-sized companies.

The study concludes "...that many facilities, either deliberately or through a lack of awareness of their responsibilities, failed to fulfill their reporting obligations under TRI for 1987." (*Toxics in the Community*, p.73).

The 1988 TRI report further explains some of the efforts the EPA is making to better inform facilities of their obligations to comply with EPA regulations. The report states that the EPA conducts training sessions around the country, provides literature to explain TRI, issues press releases, publishes articles and works with trade associations to keep their members informed.

According to this report, however, the EPA's most effective compliance technique is its "aggressive enforcement program." The EPA conducts more than 800 inspections each year at companies

suspected of noncompliance. As of July 1990, the EPA had collected more than three quarters of a million dollars in penalties and conducted out-of-court settlements which initiated voluntary emission reductions in lieu of payment.

Bolstridge (1991) discusses a number of similar studies the EPA and GAO conducted from 1988 to 1991 which analyze the compliance rates of companies reporting under EPCRA. The first discussion focuses on a confidential survey the EPA commissioned in 1989. Similar to the report described in *Toxics in the Community*, this study also reported 1987 compliance levels at 66 percent. The survey estimated that 148,000 facilities had SIC codes between 20 and 39, with ten or more employees, and 29,800 companies met the threshold requirements and should have reported. However, only 19,600 facilities filed the appropriate forms for 1987.

Bolstridge also mentions a United States General Accounting Office (GAO) survey conducted in 1991. This survey interviewed all state environmental agencies to estimate the number of facilities that failed to report under Section 313. 39 states responded to the survey. The GAO estimated that approximately 10,000 facilities had not reported. They concluded that the majority did not report because they were unaware of the regulations.

Finally, Bolstridge reviews a telephone survey the EPA conducted in 1988. The agency surveyed 406 facilities based on 608 submitted Form Rs to see how closely actual levels were to reported levels. The study found that 126 of the reports had been submitted unnecessarily, either because the company did not fall within the threshold limits or SIC codes, had fewer than the required ten employees, or reported for an unlisted chemical.

The main purpose of each of these studies was to effectively measure manufacturing companies' compliance rates for EPCRA. However, although these studies do raise some relevant questions which were not answered, this investigator was not able to locate any surveys that focused on the impacts of EPA communication strategies on regulated industries.

#### **IV. Methodology**

This survey constituted a simple random sampling of manufacturing companies drawn from the five states and District of Columbia encompassing the Region III office of the EPA. The eight-page survey instrument was given over the telephone to 100 manufacturing companies possessing two of the three criteria used to determine compliance with EPCRA; more than ten employees and SIC codes between 20 and 39. (Note: since data on threshold requirements is unavailable for all companies subject to reporting under EPCRA, this criteria was excluded from determining the study population.)

A simple random sample of 1,000 manufacturing companies was generated by Dun & Bradstreet Information Systems (D&B). D&B entered the criteria listed above plus the appropriate geographical limitations into their Facility Index System (FINDS). This produced a study population of 14,305 manufacturing companies. From this population, they randomly generated a sampling frame of 1,000 manufacturing facilities which included company name, address, SIC code and telephone number.

The researcher determined that 100 would represent a feasible sample size. This size depicts a confidence level of 95 percent with a population variability of 0.50 and  $\pm 10$  percent accuracy. In this study, accuracy is sacrificed in order to keep

the sample size at a manageable number since only one researcher would be conducting all of the interviews. 600 completed surveys would have been needed to lower the accuracy to below  $\pm 5$  percent. However, the three-month limit in which this study had to be completed did not allow for 600 completed surveys.

202 companies were randomly selected from the sampling frame to generate 100 completed surveys; a response rate of 50.5 percent. The interviewer destroyed all the information about each company except the telephone number. In this way, the interviewer was not able to identify the name of the company as the calls were conducted. In turn, the completed surveys were coded with a random ID number; the telephone number was not matched with the respondents' completed answer sheets. This ensured the complete confidentiality of each respondent's answers.

## **V. Evaluation Design**

### **A. The Variables:**

The survey instrument consists of 28 questions. They represent the dependent and independent variables included in this study. The dependent variable of compliance with EPCRA was measured using questions which asked companies' familiarity with EPCRA and Section 313, as well as opinion questions asking respondents to agree or disagree about the relationship between awareness and compliance.

The independent variable of awareness of EPA regulations encompasses questions about the number and types of information sources where respondents receive information about environmental regulations, the effectiveness of EPA information dissemination strategies such as press releases on enforcement actions and demographic information about the companies interviewed.

These variables are used in the formulation of the schematic model. According to O'Sullivan and Rassel (1989), schematic models can use pictures, lines and points to explain the relationship between the variables (p. 9). A schematic model is developed in the initial stages of the evaluation design, then revised after the results have been analyzed. The schematic model on the following page represents the complete analysis of the relationships between the elements in the study.

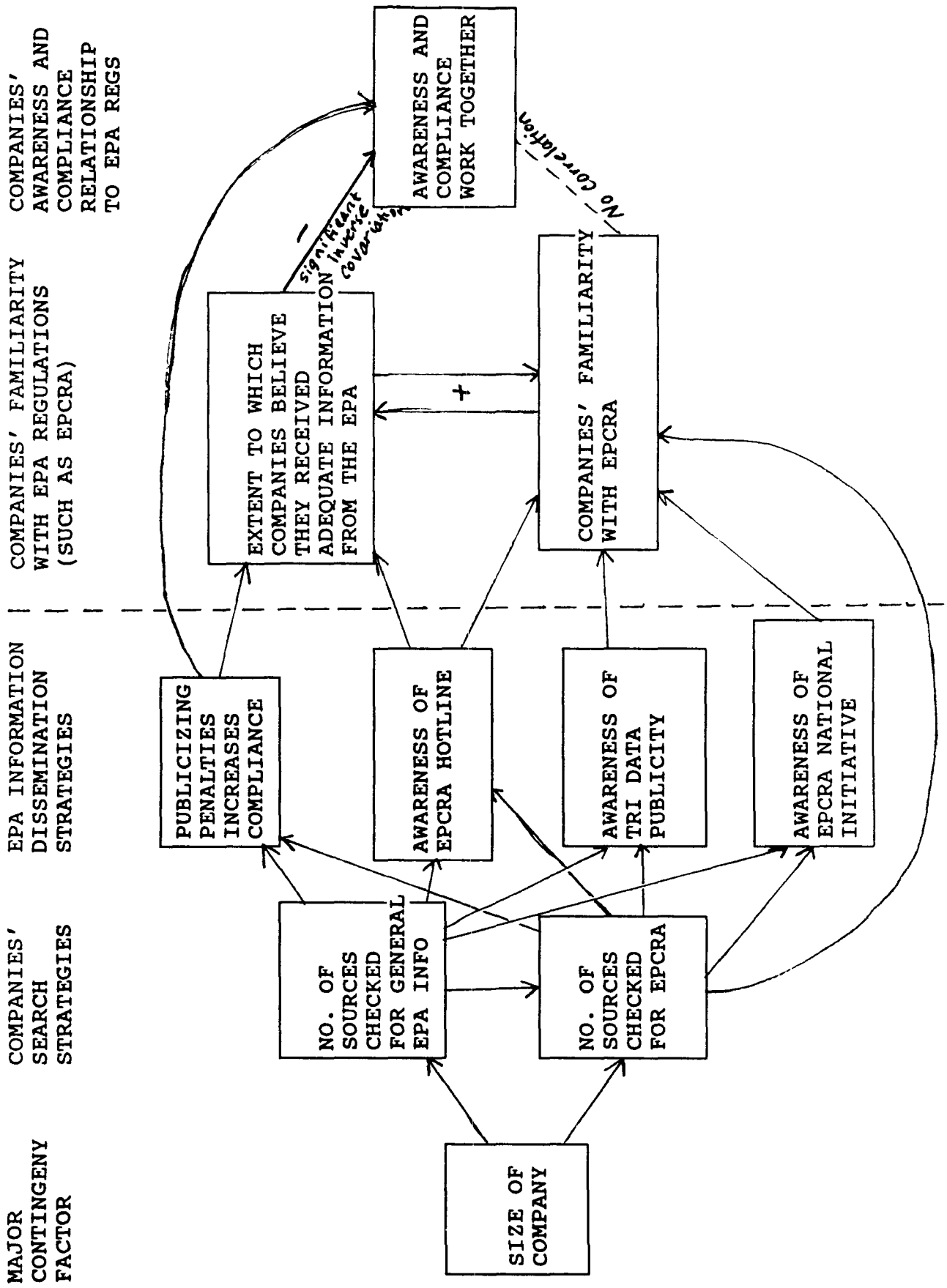
#### B. The Schematic Model:

Each of the five sections in the model represents the most important elements addressed in the first five key questions presented earlier. The size of the company is the most pertinent demographic characteristic affecting awareness of EPA regulations. This is placed at the beginning of the model. The most important ways companies learn about regulations seems to be through the number and types of sources respondents selected for general EPA information, as well as specific information on EPCRA. These two elements are represented in section two of the model.

Section three contains the four most relevant information dissemination strategies measured in the survey. These include how effectively publicizing enforcement actions increases compliance, as well as respondents' awareness of the EPCRA Hotline, the 1992 TRI data and the 1993 EPCRA National Initiative. In section four, companies' familiarity with EPCRA regulations is represented including the extent to which companies believe they have received adequate information from the EPA.

The final section deals with the central issue in the study;

**SCHEMATIC MODEL FOR EPCRA SURVEY**





whether awareness of EPA regulations affects compliance with those regulations. The arrows in the model illustrate how the elements interact with each other to influence this awareness/compliance relationship.

### C. Method of Analysis:

After all of the data was collected, it was entered into a Lotus spreadsheet before being uploaded to SAS<sup>1</sup> as a dataset. SAS is a computer software system which enables the user to write custom data analysis programs to meet individual needs (SAS, p. 6). SAS has a built-in set of procedures which perform specific data analysis functions. They are referred to as PROC procedures.

In analyzing the EPCRA dataset, the researcher wrote a PROC FREQUENCY program to provide initial descriptive statistics on each of the questions in the survey. Also referred to as PROC FREQ, this program provides a frequency table of the number of responses under a given answer choice, the percentage of responses, the cumulative frequency of responses and the cumulative percentage.

Other PROC programs used in this data analysis include PROC UNIVARIATE which creates bivariate tables comparing the relationship between two variables, as well as statistics including chi-square and gamma, and PROC TTEST which conducts a T-test on specified variables and outputs a T-test procedure, a normal probability plot, a stem and leaf, a box plot and a frequency table.

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<sup>1</sup> This referenced Trademark is used to identify products or services of SAS Institute Inc.

The descriptive statistics created by the PROC FREQ and PROC UNIVARIATE procedures are used in the initial data analysis to address the hypotheses created from the first five key questions raised at the outset of this study. The multivariate analysis of the PROC TTEST is used to conduct a preliminary evaluation of the relationships between a few of the elements illustrated in the schematic model. Further study needs to be done to complete a detailed analysis of the remaining elements in the model.

## VI. Findings and Conclusions

### A. Descriptive Statistics:

The first question the statistics are asked to answer concerns the characteristics of the companies interviewed. Table 1<sup>2</sup> shows the types of manufacturing companies interviewed based on SIC codes and the categories of company types defined by EPCRA. Printing and publishing companies represent the largest industry surveyed with 16 completed responses. Food and Machinery rank second and third respectively. Every industry type is represented by at least one company in the responses except the Tobacco and Leather industries. There are also five missing responses representing those respondents who refused to answer this question.

This information provides a description of the types of companies represented by the data. However, it does not provide a viable indicator for describing the entire study population.

Companies which were contacted represent every state in Region III, including the District of Columbia. The break down is as follows: 64 percent were from Pennsylvania, 18 percent from

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<sup>2</sup> All tables and charts appear in Appendix A.

Maryland, ten percent from Virginia, three percent from Delaware, two percent from West Virginia and one percent from the District of Columbia.

The most important characteristic reviewed in this study is the sizes of the companies interviewed. According to the data presented in Table 2, 26.3 percent of the companies had between one and 12 employees, 24.2 percent between 13 and 25, and 25.3 percent between 26 and 60. This means that more than 75 percent of the companies interviewed had fewer than 60 employees and can be classified as small to medium-sized companies. This is further confirmed by the fact that only five percent of the companies interviewed had more than 600 employees.

This data provides a major contingency factor for identifying the EPA's primary customer. With these overwhelming statistics, it is possible to conclude that the majority of manufacturing companies subject to EPCRA compliance are small to medium-sized.

Does company size affect familiarity with EPCRA regulations? To answer this question, bivariate tables were created that compare the size of a company with familiarity of EPCRA (Table 3) and the size of a company with familiarity of Section 313 (Table 4). In order to determine the measure of association between these variables, the gamma statistic is reviewed. Gamma "...measures the proportional reduction in error gained by predicting one variable while taking the other into account." (Healey, p.350).

Table 3 displays a gamma level of 0.288. This statistic indicates that a weak association exists between the two variables. You would only make 28.8 percent fewer errors in predicting the size of the company while knowing the familiarity

with EPCRA. However, this statistic does not prove accurate when the actual bivariate numbers are reviewed. According to the table, 100 percent of the companies with over 300 employees are familiar with EPCRA. Likewise, 72.23 percent of the companies with between 50 and 300 employees are also familiar with EPCRA.

This indicates that larger companies are more aware of the regulation than smaller ones. The gamma statistic is not a good indicator due to the disproportionate number of companies with fewer than 50 employees and the significantly small number of companies with more than 110 employees (15 percent).

Table 4 displays a strong gamma value of 0.872. This implies a strong measure of association between company size and familiarity with Section 313. One reason for this strong correlation could be that 100 percent of companies above 50 (including both the second and third categories) were familiar with Section 313. Since respondents must be familiar with EPCRA before they can respond to being familiar with Section 313, this indicates that of those larger companies familiar with EPCRA, all of them were also familiar with Section 313. These tables conclude that company size does impact familiarity with EPCRA regulations; larger companies are, in fact, more familiar with EPCRA than smaller companies.

The second question asks about the factors that increase manufacturing companies' compliance with EPA regulations in general. The researcher hypothesizes that increased awareness of EPA regulations will lead to increased compliance by affected industries. This hypothesis is illustrated in the last phase of the schematic model.

To test this hypothesis, the surveyor asked respondents to agree or disagree with two statements. The first statement reads

"In my opinion, the majority of companies who don't comply with EPA regulations aren't aware of the regulations.", and the second statement reads "In my opinion, better awareness of EPA regulations will lead to increased compliance by affected industries." If respondents agree with these statements this would indicate a direct correlation between awareness and compliance.

The results support this hypothesis. Table 5 provides the number of respondents who agree and disagree with each of these statements. According to the data, 74.7 percent of respondents agree that companies who don't comply with EPA regulations aren't aware of the regulations. Likewise, 91.5 percent of respondents also agree that better awareness of EPA regulations leads to increased compliance by industries.

To further test the measure of association between these two questions, a bivariate table was created to determine the relationship between these two questions. A strong correlation between these two questions, would indicate that respondents who agree with one question consistently agree with the other.

Table 6 illustrates the frequency and percent of respondents who agree and disagree with each statement. Reading the table across the columns reveals that of the respondents who agree that companies which don't comply with EPA regulations aren't aware of the regulations, 81.48 percent also agree with the second statement that increased awareness leads to increased compliance. Only 18.52 percent of respondents who disagree with the first statement agree with the second. Likewise, of the respondents who agree with the second statement, 95.65 percent also agree with the first statement and only 4.35 percent disagree.

This strong, direct covariation relationship between these

two variables supports the hypothesis that increased awareness leads to increased compliance. The gamma statistic calculated in Table 7 further shows a strong correlation between these two questions. It indicates that you would make 63.0 percent fewer errors in predicting the answer to the second question by knowing the answer to the first question. Testing the correlation between two similar questions also tests the validity of the survey instrument. Since the majority of respondents answered similar questions with the same answers, the survey appears valid for this issue.

The previous questions could be biased since respondents were asked to agree or disagree with prewritten questions. To eliminate this bias, respondents were asked the open-ended question of what they felt the primary reason is that companies do not comply with EPA regulations. 53.5 percent felt it was due to a lack of awareness of the regulations (Table 8). The second closest response represents a mere 27.3 percent of the respondents and names expense as the primary reason companies do not comply with EPA regulations.

These results are significant because they reveal companies' attitudes toward compliance. Since this was an open-ended question, respondents were not given a list of options, but were allowed to answer any way they felt. By reviewing some of the other responses, this indicates that respondents seemed to feel comfortable answering this question openly. Four percent of the companies felt they would not get caught if they did not comply with EPA regulations. Four percent felt companies do not care about environmental regulations. A few respondents even felt that most companies try to comply or should already be well-informed about the regulations.

Not only do respondents agree with the earlier statements, but when they are able to give any answer to an open-ended question asking why companies don't comply with the regulations, the majority feel it is due to a lack of awareness. These results are extremely important because they provide insight into why companies may not be complying with EPA regulations. By knowing why companies are not complying, the EPA can target these problems and, in turn, increase compliance of the regulations.

If the data reveal why companies are not complying with EPA regulations, they also look at how the EPA can increase awareness. The question of how familiar companies are with EPA regulations indicates what efforts may be working and may not be working to increase awareness. This is addressed in question three which asks to what extent manufacturing companies are familiar with EPA regulations, specifically EPCRA.

The researcher hypothesized that the majority of companies are not aware of EPCRA since this seems to be a fairly obscure regulation and previous studies revealed that over 30 percent of companies are not complying with the regulation.

To test this hypothesis, the survey asked respondents if they are familiar with the regulations under EPCRA. According to the results, 54 percent of respondents are familiar with EPCRA and 19 percent answered that they are somewhat familiar (Pie Chart 1). This rejects the hypothesis because the majority of companies, namely 73 percent, are somewhat familiar or familiar with EPCRA.<sup>3</sup>

The survey further tests how familiar respondents are with

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<sup>3</sup> 27 percent of companies were unfamiliar with EPCRA. One respondent even commented, "Oh no, not another regulation I should know about!"

specific details under EPCRA. Of those respondents who affirmed that they are familiar with EPCRA, 81.7 percent are also familiar with Section 313, which deals with release reporting requirements for certain toxic chemicals (Table 9). This indicates that companies are not only superficially familiar with the regulation, but also seem familiar with the specific requirements under the regulation.

However, 40 percent of the respondents were unable or refused to answer this question. This 40 percent includes the 27 percent who were not familiar with EPCRA. (This was a contingency question and assumed that if a company was unfamiliar with EPCRA it would also be unfamiliar with Section 313.) Since such a large number of companies were unable to answer the Section 313 question and other contingency questions including knowledge about threshold requirements and reporting deadlines, these results have been thrown out as nonviable dependent variables; only general EPCRA information remains in the schematic model as an indicator of companies' familiarity with EPA regulations.

This question provides the dependent variable for testing companies' compliance with EPA regulations. The researcher assumes that if companies are not familiar with a regulation, they are not complying with that regulation. However, being familiar with the regulation does not guarantee that companies are complying; the data just indicate that it improves the chance that companies are complying.

The schematic model illustrates that companies' familiarity with EPCRA is not the only measure of awareness in the survey. The researcher also asked respondents the extent to which they believe they are receiving adequate information from the EPA. 62 percent of companies disagree with the statement that "I have



received adequate information from the EPA." This reveals that although companies seem familiar with EPCRA regulations, they also feel that the EPA is not doing a sufficient job to educate them about general EPA regulations. In turn, when respondents are asked whether they feel the EPA is publicizing too much, the right amount or not enough on environmental regulations, 56 percent said the EPA was not publicizing enough.

This leads into the next question which asks how manufacturing companies that produce or use toxic chemicals learn about EPA regulations such as EPCRA. The corresponding hypothesis states that the majority of manufacturing companies learn about EPA regulations through trade publications which relate to their particular industry.

To test this hypothesis, the survey asked companies to identify the number and types of sources they refer to for general EPA information and for information about EPCRA. 77 percent of respondents identified trade publications as a source they consult for information about environmental regulations (Table 10). Since this represents the most frequently sighted source the hypothesis is supported.

Other sources that companies consult for general EPA information include newspapers (63 percent), television (50 percent), direct mailings (50 percent) and other companies (32 percent). However, when companies were asked to identify where they receive information about EPCRA, 69 percent of the companies were not able to identify any sources. The most frequently identified source for specific information about EPCRA came from direct mailings (15 percent).

This information provides an indication of the most commonly used sources that companies consult for information on

environmental laws and regulations. It also provides information about the number of sources companies consult. Bar chart 2 illustrates the cumulative percentages of the number of sources companies consult for general EPA information. Three percent of companies do not consult any sources, 14 percent (a cumulative total of 17) consult one source, 35 percent consult two sources and 86 percent of companies consult five sources for general EPA information.

This indicates that if the EPA were to provide information about EPA regulations through five sources, they would presumably reach 86 percent of their target audience (89 percent minus the 3 percent who do not consult any sources.) By utilizing six sources, they would reach 94 percent of their audience. These are not always the same six sources, but by referring again to Table 10, this will indicate what the six most effective sources are for targeting manufacturing companies: trade publications, newspapers, television, direct mailings, other companies and radio. By utilizing these sources, the EPA would reach a large proportion of industries regulated under EPCRA.

Since companies tend to utilize trade publications, the survey asked respondents to identify the trade publications they use most often. Appendix G provides a list of trade publications respondents named. As the list indicates, there is little overlap between responses. Even companies within the same industry seem to utilize a wide variety of trade publications. The most frequently sighted publication is *Printing Impressions* with four responses. However, most of the publications were sighted by only one respondent. This reveals the difficulty in targeting trade publications. The question arises of how the EPA can effectively target all types of manufacturing companies through such a

diverse list of trade publications? This question requires further study in order to be answered.

The survey also asked companies what agency they use most often for information and advice on environmental issues. As the results in Table 11 illustrate, 29.2 percent of companies turn to their state environmental agency for advice.<sup>4</sup> 16.7 percent turn to other sources which mostly include trade associations and chambers of commerce. Only 12.5 percent utilize the EPA for advice on environmental issues. When the interviewer asked companies why they did not use the EPA, many respondents felt that the EPA was too large and impersonal to contact. Companies who tried to telephone the EPA had a difficult time getting through to an actual person.

Respondents were also asked what agency they should be using for information and advice on environmental issues. State agencies retain the lead with 26.5 percent of respondents. However, local government agencies increase from 8.3 percent to 22.5 percent of respondents. Companies seem to think that local environmental agencies should be utilized to provide advice. The EPA increased almost six percentage points. Only one percent of respondents felt that their trade association or chamber of commerce should be keeping them informed. Overall, companies feel that it is the government's responsibility; whether it is at the local, state or federal level.

The fifth question this survey addresses asks which outreach strategies followed by the EPA are more likely to increase compliance with EPA regulations such as EPCRA. Do press releases

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<sup>4</sup> Despite this statistic, many companies expressed a dissatisfaction with their state agencies.

to these various trade publications that publicize enforcement actions effectively reach these companies and deter them from violating? Are companies aware of the EPCRA National Hotline? Did the recent press release regarding the release of the 1992 TRI data reach these companies? And are companies aware of the 1993 EPCRA National Initiative? These are the four strategies the survey measured for their effectiveness.

The results, displayed in Table 12, indicate the answers to these questions. More than 72 percent of respondents agree that publicizing enforcement actions against companies deters other companies from violating the regulations. This seems to be an effective strategy for increasing compliance.

However, only 43 percent of these companies are aware of the EPCRA National Hotline. This indicates that although companies seem aware of EPCRA, they do not know who to turn to for additional advice about EPCRA. It also reveals that the EPA has not done a sufficient job in informing companies about this valuable service which has been established to assist regulated industries.

These two strategies, which have been categorized as long-term strategies because they provide an ongoing way to disseminate information, are more effective than the one-time strategies measured by the 1992 TRI data and EPCRA National Initiative. Both of these strategies were one-time efforts by EPA Headquarters and the regional offices to publicize specific EPA events. In both cases, the EPA's Office of External Affairs issued press releases to selected newspapers and trade publications detailing a recent occurrence at the EPA.

The first strategy was an announcement by EPA Administrator Carol Browner of the release of the 1992 Toxic Release Inventory

data which provides annual statistics outlining the top emissions to the air, land and water by manufacturing companies. 75.8 percent of the companies surveyed were not aware of the release of these data.

Likewise, 83.8 percent of companies surveyed were not aware of the second strategy; the EPCRA National Initiative. This was a series of enforcement actions sent out across the country to manufacturing companies who had been issued complaints for violating EPCRA. The Initiative was publicized on a national level through EPA Headquarters and regionally. The Region III office had sent out press releases to 91 trade publications and newspapers targeting the types and locations of the industries affected by the enforcement actions.

Both of these one-time strategies were less effective than the long-term strategies in increasing awareness. There are many reasons why these single efforts proved less successful strategies for increasing awareness. The most plausible reason deals with the timing of the press releases. Many trade publications are printed monthly or bimonthly. This means that many of the publications which received the press releases may not have had the time to print the information before the survey was conducted.

Also, it is unclear what percentage of the press releases sent to publications are actually utilized. The Region III Office of External Affairs has proposed a survey to interview trade publications, newspapers and television and radio stations to determine how many use the press releases sent by the EPA.

When the companies were asked what they suggest the EPA do to better inform companies about environmental regulations the responses were more varied. As Table 13 depicts, 31 percent of

the companies surveyed asked for more direct mailings in simple language. 12 percent asked for more regional seminars in plain English. Eight percent asked for annual or quarterly newsletters, six percent want to see the EPA work more closely with local governments and chambers of commerce, and five percent feel the EPA should publicize more in trade publications. Some respondents had even more creative and diverse answers including creating an environmental phonebook or a TV station devoted to EPA legislation.

However, the majority of companies consistently asked for simplified explanations of the complicated issues that encompass environmental laws. Since the majority of the companies interviewed are under 60 employees, they do not have the time, personnel or financial resources needed to effectively educate themselves about all of the nuances under the environmental regulations affecting them. They need the EPA to better educate them through more targeted information dissemination strategies. Press releases about particular enforcement actions alone are not sufficient to inform these companies. These strategies are somewhat effective, but need to be combined with other strategies such as direct mailings, seminars or newsletters.

#### B. Multivariate Analysis:

It is necessary to refer again to the schematic model presented earlier in this report in order to analyze the relationships between the important factors affecting awareness and compliance with EPA regulations. A preliminary multivariate analysis was conducted to examine the relationships between the three variables contained in sections four and five of the model. The evaluation focuses on the relationship between awareness and

compliance of EPA regulations and how they are affected by companies' familiarity with EPCRA plus the extent to which companies believe they have received adequate information from the EPA.

To assist in a diagnosis of these relationships, it was first necessary to combine the awareness/compliance relationship into one index. This was done by setting values for responses to the two questions used to measure awareness and compliance. A value of five means respondents strongly agree that awareness influences compliance. A value of one means they strongly disagree.

The results presented in Table 14 indicate that the median value is four, the mean is 3.9 and the mode equals four. This demonstrates that the average response for this index signifies a general agreement with the awareness/compliance relationship. The 0% minimum value of two shows that none of the companies strongly disagreed with the awareness/compliance relationship. The stem and leaf and normal probability plot in Table 15 illustrate the normality of the data; 37 respondents answered four (agree). In general, companies agree that there is a strong correlation between awareness of EPA regulations and compliance.

After this index was created, PROC TTEST was run to compare this index with the extent to which companies believe they receive adequate information from the EPA. Table 16 displays the results of this procedure. The null hypothesis ( $H_0$ ) states that there is no difference between those who disagree with the question of receiving adequate information from the EPA and those who agree with the awareness/compliance relationship. The alternate or research hypothesis ( $H_a$ ) states that there is a significant difference.

According to the results, there is no significant difference between the averages and standard errors for the disagree and agree groups. Therefore, the equal variance statistic must be used. If  $P > |T|$  (T statistic) is smaller than 0.05, it is necessary to reject the null hypothesis ( $H_0$ ) of no difference between the two groups. If the T statistic is greater than 0.05, the null hypothesis must be accepted. These results reveal that under the equal variance, the T statistic is 0.0013 or less than 0.05. Therefore, we must reject the null hypothesis in favor of a significant difference between the companies who disagree with the first question of receiving adequate information from the EPA but agree with the awareness/compliance relationship.

This means that there is a significant inverse relationship between the first question and the awareness/compliance index. Those who have not received adequate information from the EPA feel that they would be more likely to comply with EPA regulations if they were made more aware of the regulations. However, those who have received adequate information from the EPA do not believe as strongly that companies would be more likely to comply if they are made more aware. Once companies are made aware, they do not seem to value the information as much, or feel as strongly that this awareness will affect compliance.

There are many reasons why this relationship appears to be true. The most important concerns the quality and content of the information provided to affected industries and the method this information is dispersed. The small manufacturing companies affected by the regulations studied are looking for more detailed and simplified information on how to comply with these regulations. They want to understand the specifics of the laws and how their industries can comply; not just be aware of the



enforcement actions taken against similar companies.

It is also necessary to target these companies through a range of information sources; not just one particular source. Press releases sent to trade publications alone will not significantly increase awareness of regulations and increase compliance. Publicizing in multiple sources greatly increases companies' chances of learning about the regulations. However, surface awareness does not greatly affect compliance. The extent of the awareness, the specific facts and procedures these companies are familiar with greatly influences their ability to comply. The majority of the companies interviewed expressed a genuine interest in complying with the regulations, they just do not understand how to comply.

The PROC TTEST was also conducted on the relationship between companies' familiarity with EPCRA and the awareness/compliance index. The null hypothesis ( $H_0$ ) states that there is no difference between the group of companies who disagree that they are familiar with EPCRA and those companies who agree with the awareness/compliance index. The alternate hypothesis ( $H_a$ ) states that there is a significant difference between the two groups.

The results presented in Table 17 show that there is no significant difference between the averages and standard errors for the disagree and agree groups. Just like the previous test, the equal variance is used. However, unlike the previous test, the T statistic under the equal variance is greater than 0.05 at 0.9663. This means that we can not reject the null hypothesis of no difference. Consequently, there is no difference (no correlation) between companies' familiarity with EPCRA and whether they agree or disagree with the awareness/compliance

relationship.

To complete the analysis of the right side of the schematic model, it is necessary to compare the relationship between the extent to which companies believe they received adequate information from the EPA and companies' familiarity with EPCRA. This can be accomplished by developing a bivariate table shown as Table 18. With a gamma statistic of 0.438 there is a moderate relationship between these two variables. This means that you would make 43.8 percent fewer errors in predicting whether companies feel they receive adequate information from the EPA if you know whether the companies are familiar with EPCRA.

Of the companies who are not familiar with EPCRA, 77.78 disagree that they receive adequate information from the EPA and 22.22 agree. However, of those that are familiar with EPCRA, the answers are divided between those who agree and disagree about whether they receive adequate information from the EPA. 57.75% of those who are familiar with EPCRA feel they do not receive adequate information from the EPA and 42.25 felt they did receive adequate information. This reinforces the theory stated earlier that once firms are made aware of the regulations, they do not seem to value the information as much as those who are not familiar with the regulations.

## **VII. Recommendations**

This multivariate analysis addresses one half of the schematic model in detail. It also provides some answers to the sixth and final question posed at the outset of this study; how can the EPA improve the process by which manufacturing companies learn about EPA regulations?

This final section of the report attempts to outline some

recommendations that have been generated based on the results of the survey. It also suggests further study that could be investigated to measure additional factors not included in this research.

The companies, themselves, have suggested ways the EPA can better inform them about environmental regulations. The most popular form is through more direct mail in simple language. Companies recommend such mailers as quarterly newsletters, brochures sent with annual tax return forms, and publications targeted to specific industries as a means of better informing them.

The EPA already works with local trade associations to provide some outreach and education on environmental regulations. However, many companies feel more efforts are needed to provide regional seminars in plain English to local businesses. Many suggested working with the chambers of commerce to provide workshops, buy mailing lists and maybe even offer tax incentives to companies willing to make the effort to become more aware of the regulations.

These companies are asking the government for more help in educating them effectively about environmental regulations. This researcher found that the majority of small businesses interviewed did not have an environmental consultant on sight. In fact, none of the respondents sighted an environmental consultant as the primary source of information on the regulations and only 3.1 percent named an attorney (Table 11). Even more telling is the fact that the majority of small companies interviewed did not have any type of environmental employee on staff. The owner or manager generally handles whatever environmental questions or problems may arise. On the other hand, all of the companies with

over 600 employees had an environmental division to concentrate on complying with environmental regulations.

This evidence further emphasizes that small companies are the ones that need the government's aid in educating them about environmental issues. If they are better informed they agree that they will more likely comply.

Educating the thousands of small companies subject to compliance of the many environmental regulations is a growing challenge for the EPA. With limited resources and growing public demand, a major effort must be focused on education and public outreach.

Besides providing publications and direct mailings, the EPA should also concentrate on better utilizing the mass media in informing companies about issues. Television, newspapers and radio may not be the most effective mediums for educating specific companies about the requirements under a particular regulation, but they are effective sources for creating general awareness among industries and the public.

As the data reveal, individual strategies, such as publicity on specific enforcement actions, will not greatly increase awareness of the regulations. Utilizing the mass media, however, will continue to generate public support for environmental regulations. This, in turn, will increase public pressure on companies to comply. And this pressure may force companies to make a proactive effort to educate themselves.

The government alone can not educate every company. It must also be industries' responsibility to educate themselves. Once industries realize their environmental responsibilities, they can work with government to comply with all environmental regulations. If government and industries can work together to

become better informed about the regulations, it will increase compliance of these regulations. The EPA must provide incentives to these companies, easy access to the information and public pressure to force companies to want to comply. These efforts should constitute the central foci of the EPA's future public outreach strategies.

If the EPA chooses to assess the effectiveness of these recommendations, a possible follow-up study could focus on a variety of publicity strategies. The EPA could initiate different outreach campaigns from mass media only to direct mail combine with local seminars and workshops. These strategies could be assessed for their value of information to the regulated community and general public. Their effectiveness could be measured by interviewing focus groups before and after the strategies are released to measure their impact on awareness and compliance.

The study could also look at the relationships between the forms of media used, the content, the display, the timing and the reinforcement of the information. By measuring the effectiveness of specific strategies, the EPA can determine which strategies are most effective in educating the regulated community and increasing compliance of environmental regulations.

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**APPENDIX A:**

**TABLES AND CHARTS**



TABLE 1  
 TYPES OF MANUFACTURING COMPANIES INTERVIEWED

SIC Code	Type of Company	Number Interviewed	Percent
27	PRINTING & PUBLISHING	16	16.8
20	FOOD	10	10.5
35	MACHINERY	10	10.5
24	LUMBER & WOOD	7	7.4
34	FABRICATED METAL	7	7.4
32	STONE, CLAY & GLASS	6	6.3
38	INSTRUMENTS	6	6.3
28	CHEMICALS	5	5.3
36	ELECTRICAL, ELECTRONIC	5	5.3
39	MISC. MANUFACTURING	5	5.3
22	TEXTILES	3	3.2
23	APPAREL	3	3.2
25	FURNITURE	3	3.2
33	PRIMARY METALS	3	3.2
30	RUBBER & PLASTICS	2	2.1
37	TRANSPORTATION EQUIPT.	2	2.1
26	PAPER	1	1.1
29	PETROLEUM & COAL	1	1.1
21	TOBACCO	0	0.0
31	LEATHER	0	0.0

Missing = 5

TABLE 2  
 STATISTICS FOR SIZE OF MANUFACTURING COMPANIES SURVEYED

Range of Employee	# of Companies Within Range	Cumulative # Within Range	% of Companies Within Range	Cumulative of Companies
1-12	26	26	26.3	26.3
13-25	24	50	24.2	50.5
26-60	25	75	25.3	75.8
61-110	10	85	10.1	85.9
111-220	5	90	5.0	90.9
221-600	4	94	4.0	94.9
601-20,000	5	99	4.0	100.0

Missing = 1

TABLE 3

BIVARIATE FREQUENCY TABLE FOR EPCRA SURVEY DATA  
 Familiar with EPCRA by Number of Employees

Familiar with EPCRA  
 No. of Employees

Frequency  
 Expected  
 Percent  
 Row %  
 Column %

	UNDER 50 EMPLOYEES	50-300 EMPLOYEES	OVER 300 EMPLOYEES	TOTAL
NO	21 19.376 21.43	5 4.7755 5.10	0 1.8571 0.00	26 26.53
	80.77 28.77	19.23 27.78	0.00 0.00	
YES/ SOMEWHAT	52 53.632 53.07 72.22 71.23	13 13.224 13.26 18.06 72.23	7 5.1428 7.14 9.72 100	72 73.47
TOTAL	73 74.49	18 18.37	7 7.14	98 100

Missing = 2

Gamma = Value 0.288 ASE 0.188

TABLE 4  
 BIVARIATE FREQUENCY TABLE FOR EPCRA SURVEY DATA  
 Familiar with Section 313 by Number of Employees

Familiar with Section 313  
 No. of Employees

Frequency Expected Percent Row % Column %	UNDER 50 EMPLOYEES	50-300 EMPLOYEES	OVER 300 EMPLOYEES	TOTAL
NO	11 7.8833 18.33 100 28.77	0 2.0167 0.00 0.00 0.00	0 1.1 0.00 0.00 0.00	11 18.33
YES/ SOMEWHAT	32 35.12 53.33 65.31 74.42	11 8.98 18.34 22.45 100	6 4.9 10.00 12.24 100	49 81.67
TOTAL	43 71.67	11 18.33	6 10	60 100

Missing = 40

	Value	ASE
Gamma =	0.872	0.123

TABLE 5  
 AWARENESS OF EPA REGULATIONS INFLUENCES COMPLIANCE

Question	Agree	Percent Agree	Disagree	Percent Disagree	# Missing
Q14A: COMPANIES WHO DON'T COMPLY AREN'T AWARE	74	74.7	19	19.2	1
Q14C: BETTER AWARENESS LEADS TO INCREASED COMPLIANCE	86	91.5	6	6.4	6

**TABLE 6**  
**QUESTION 14A CROSSED WITH QUESTION 14C**

Q14AR3 (LACK OF AWARENESS)		Q14CR3 (BETTER AWARENESS)		
Frequency				
Expected				
Percent				
Row Pct				
Col Pct	DISAGREE	AGREE		Total
DISAGREE	3	15		18
	1.2414	16.759		
	3.45	17.24		20.69
	16.67	83.33		
	50.00	18.52		
AGREE	3	66		69
	4.7586	64.241		
	3.45	75.86		79.31
	4.35	95.65		
	50.00	81.48		
Total	6	81		87
	6.90	93.10		100.00

Frequency Missing = 13

TABLE 7  
STATISTICS FOR TABLE OF QUESTION 14A BY QUESTION 14C

Statistic	DF	Value	Prob
Chi-Square	1	3.374	0.066
Likelihood Ratio Chi-Square	1	2.765	0.096
Continuity Adj. Chi-Square	1	1.728	0.189
Mantel-Haenszel Chi-Square	1	3.335	0.068
Fisher's Exact Test (Left)			0.985
(Right)			0.100
(2-Tail)			0.100
Phi Coefficient		0.197	
Contingency Coefficient		0.193	
Cramer's V		0.197	

Statistic	Value	ASE
<b>Gamma</b>	<b>0.630</b>	<b>0.261</b>
Kendall's Tau-b	0.197	0.134
Stuart's Tau-c	0.081	0.061
Somers' D C R	0.123	0.091
Somers' D R C	0.315	0.209
Pearson Correlation	0.197	0.134
Spearman Correlation	0.197	0.134
Lambda Asymmetric C R	0.000	0.000
Lambda Asymmetric R C	0.000	0.000
Lambda Symmetric	0.000	0.000
Uncertainty Coefficient C R	0.063	0.079
Uncertainty Coefficient R C	0.031	0.040
Uncertainty Coefficient Symmetric	0.042	0.053

Estimates of the Relative Risk (Row1/Row2)

Type of Study	Value	95%	
		Confidence Bounds	
Case-Control	4.400	0.807	23.981
Cohort (Col1 Risk)	3.833	0.844	17.420
Cohort (Col2 Risk)	0.871	0.704	1.078

Effective Sample Size = 87  
Frequency Missing = 13

TABLE 8  
REASONS COMPANIES DON'T COMPLY WITH EPA REGULATIONS

Reason	No. of Companies	% of Companies
AREN'T AWARE OF REGULATIONS	53	53.5
EXPENSE	27	27.3
DON'T CARE	4	4.0
TOO MANY REGS/ TOO DIFFICULT	4	4.0
WON'T GET CAUGHT	4	4.0
FINES AREN'T STIFF ENOUGH	1	1.0
DON'T BELIEVE THREAT EXISTS	1	1.0
LACK OF PERSONNEL	1	1.0
AFRAID OF PENALTIES	1	1.0
WASTE OF MONEY	1	1.0
MOST TRY TO COMPLY	1	1.0
SHOULD BE INFORMED	1	1.0

Missing = 1



# RESPONDENTS' FAMILIARITY WITH EPCRA

Are you familiar with EPCRA?

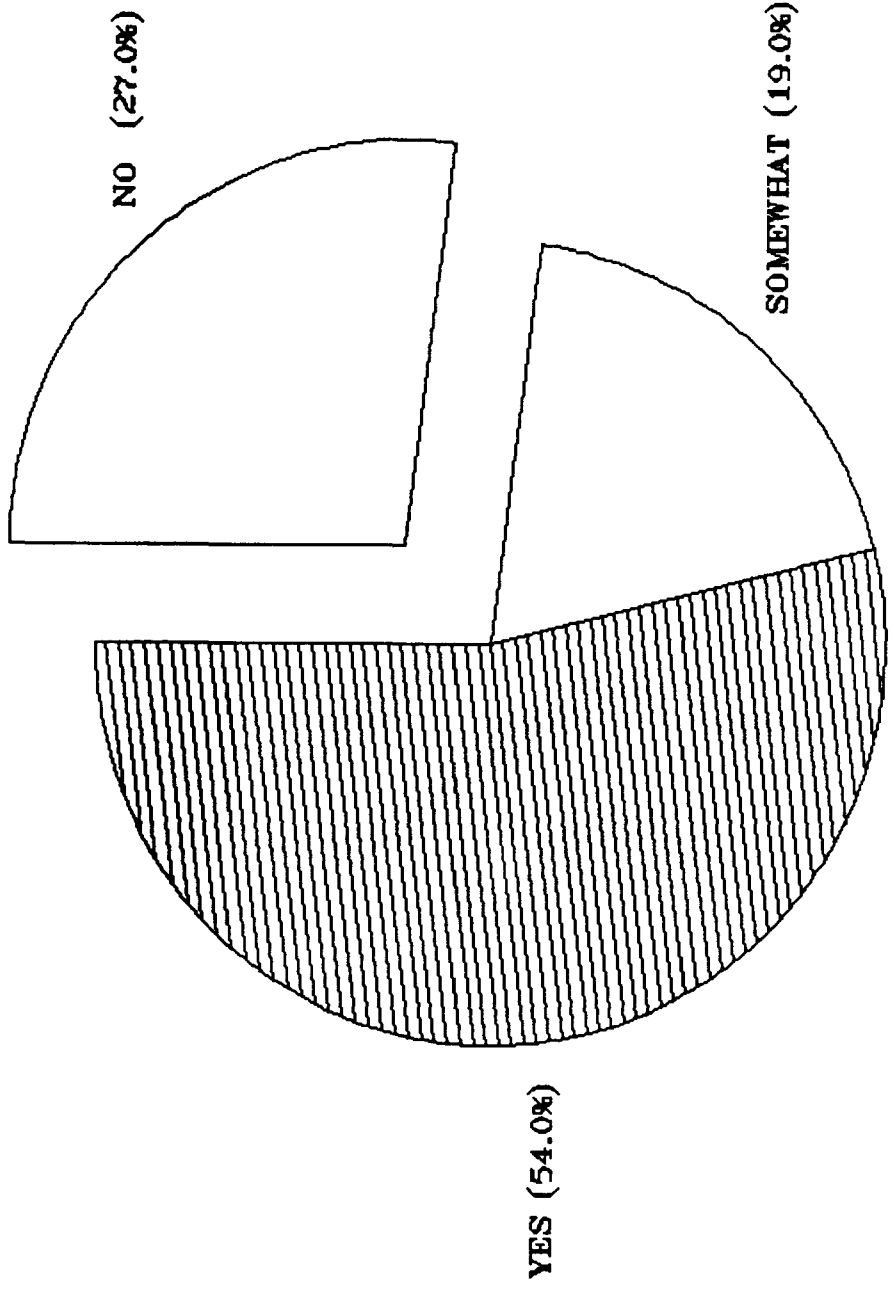


TABLE 9  
**HOW FAMILIAR MANUFACTURING COMPANIES ARE WITH EPCRA & SECTION 313**

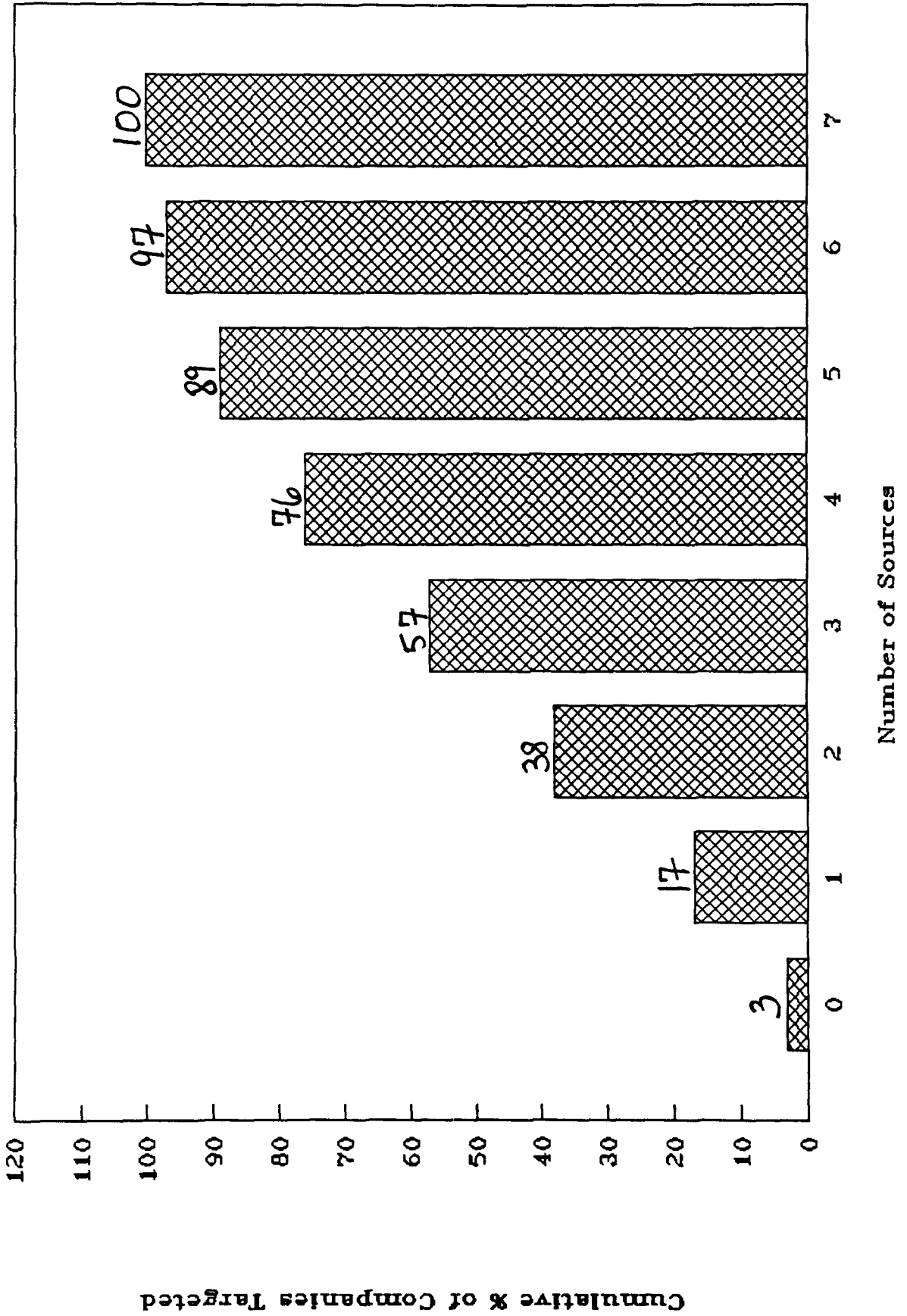
Question	Yes/Smwhat	%Yes	No	% No	# Missing
Familiar with EPCRA?	73	73.0	27	27.0	0
Familiar with Section 313?	49	81.7	11	18.3	40

TABLE 10  
 PERCENTAGE OF COMPANIES CONSULTING INFORMATION SOURCES

Sources	EPA General Information (%)	EPCRA Information (%)
TRADE PUBLICATIONS	77	5
NEWSPAPERS	63	3
TELEVISION	50	0
DIRECT MAILINGS	50	15
OTHER COMPANIES	32	2
RADIO	17	0
FEDERAL REGISTER	15	7
ATTORNEYS	10	0
OUTREACH WORKSHOPS	9	2
	Missing = 3	Missing = 69

# CUMULATIVE % OF NUMBER OF SOURCES COS.

CONSULT FOR GENERAL EPA INFORMATION



**TABLE 11**  
**AGENCIES USED FOR ENVIRONMENTAL ADVICE**

Organization	Agency Used For Advice (%)	N (Used)	Agency Should Be Used For Advice (%)	N (SHOULD USE)
STATE ENVIRNMTL AGENCY	29.2	28	26.5	26
ANOTHER	16.7	16	1.0	1
FEDERAL EPA	12.5	12	19.4	19
ALL THREE GOV. AGENCY	12.5	12	23.5	23
LOCAL ENVIRNMTL AGENCY	8.3	8	22.5	22
INTERNAL SOURCE	8.3	8	5.1	5
NONE	6.3	6	0.0	0
NONPROFIT ORGANIZATION	3.1	3	2.0	2
ATTORNEYS	3.1	3	0.0	0

Missing = 4

Missing = 2

**TABLE 12**  
**EPA EFFORTS TO INCREASE AWARENESS OF EPCRA**

<u>Long-term Strategies</u>	<u>% Yes</u>	<u>% No</u>	<u># Missing</u>
PUBLICIZING ENFORCEMENT ACTIONS DETER VIOLATIONS?	72.9	27.1	4
AWARE OF EPCRA HOTLINE?	43.0	57.0	0
<u>One-time Strategies</u>	<u>% Yes</u>	<u>% No</u>	<u># Missing</u>
AWARE OF 1992 TRI DATA?	24.2	75.8	1
AWARE OF EPCRA NATIONAL INITIATIVE?	16.2	83.8	1

**TABLE 13**  
**RECOMMENDED WAYS THE EPA CAN BETTER INFORM COMPANIES OF ENVIRONMENTAL REGULATIONS**

<u>Recommendation</u>	<u>No. of Companies</u>	<u>% of Companies</u>
DIRECT MAILERS WITH SIMPLE LANGUAGE	31	31.0
REGIONAL SEMINARS IN PLAIN ENGLISH	12	12.0
NEWSLETTERS/QUARTERLY OR ANNUAL	8	8.0
WORK WITH LOCAL GOV'TS AND CHAMBERS OF COMMERCE	6	6.0
PUBLICIZE IN TRADE PUBLICATIONS	5	5.0
EPA DOING GOOD JOB	4	4.0
SEND A REPRESENTATIVE	3	3.0
NO MORE MATERIALS	3	3.0
MAKE INFORMATION EASIER TO READ	2	2.0
CREATE AN ENVIRONMENTAL PHONEBOOK	2	2.0
TELEVISION ADS	2	2.0
CREATE A TV STATION FOR ENVIRONMENTAL LEGISLTION	1	1.0
TARGET SMALLER COMPANIES	1	1.0

Table 14  
Univariate Statistics for Size of Firm & Awareness Index

Univariate Procedure

Variable=Q14ACR1

AWARENESS INDEX

Moments

N	93	Sum Wgts	93
Mean	3.908602	Sum	363.5
Std Dev	0.671413	Variance	0.450795
Skewness	-0.81413	Kurtosis	0.603109
USS	1462.25	CSS	41.47312
CV	17.17782	Std Mean	0.069622
T:Mean=0	56.14014	Pr> T	0.0001
Num ^= 0	93	Num > 0	93
M(Sign)	46.5	Pr>= M	0.0001
Sgn Rank	2185.5	Pr>= S	0.0001
W:Normal	0.881939	Pr<W	0.0001

Quantiles (Def=5)

100% Max	5	99%	5
75% Q3	4.5	95%	5
50% Med	4	90%	4.5
25% Q1	3.5	10%	3
0% Min	2	5%	3
		1%	2
Range	3		
Q3-Q1	1		
Mode	4		

Extremes

Lowest	Obs	Highest	Obs
2 (	58)	5 (	26)
2 (	31)	5 (	43)
2 (	4)	5 (	50)
2.5 (	6)	5 (	65)
3 (	98)	5 (	79)

Missing Value	.
Count	7
% Count/Nobs	7.00





TABLE **16**  
**AVERAGE DIFFERENCES ON AWARENESS INDEX BY  
ADEQUACY OF INFORMATION RECEIVED BY FIRMS FROM THE EPA**

RECEIVED ADEQUATE INFORMATION FROM THE EPA?

	Average	Standard error
DISAGREE	4.09	0.08
AGREE	3.62	0.12

Variances	T	DF	Prob>/T/
Unequal	3.2799	63.9	0.0017
<b>Equal</b>	<b>3.3262</b>	<b>89.0</b>	<b>0.0013</b>

T-TEST

Ho: Average for disagree group = average for agree group

Ha: Average for disagree group not equal average for agree group

No significant difference between Averages and Standard errors of Disagree and Agree groups. Therefore use Equal Variances.

If Prob>/T/ is smaller than 0.05, then reject the null (Ho) hypothesis of no difference between two groups. If Prob>/T/ is larger than 0.05, accept the null (Ho) of no difference.

T = 0.0013 < 0.05

Therefore, there is a significant difference between two groups.

Meaning:

Those who have **not** received adequate info from the EPA feel they'd be more likely to comply if they were made more aware.

However, those who **have** received adequate info do not believe as strongly that companies would comply if they were made more aware. Once companies are made aware, they don't seem to value the information.

TABLE **17**  
**AVERAGE DIFFERENCES ON AWARENESS INDEX BY  
 COMPANIES' FAMILIARITY WITH EPCRA**

ARE YOU FAMILIAR WITH EPCRA?

	Average	Standard error
DISAGREE	3.90	0.15
AGREE	3.91	0.07

<u>Variances</u>	<u>T</u>	<u>DF</u>	<u>Prob&gt;/T/</u>
Unequal	-0.0383	37.9	0.9697
<b>Equal</b>	<b>-0.0423</b>	<b>91.0</b>	<b>0.9663</b>

T-TEST

Ho: Average for disagree group = average for agree group

Ha: Average for disagree group not equal average for agree group

No significant difference between Averages and Standard errors of Disagree and Agree groups. Therefore use Equal Variances.

If Prob>/T/ is smaller than 0.05, then reject the null (Ho) hypothesis of no difference between two groups. If Prob>/T/ is larger than 0.05, accept the null (Ho) of no difference.

T= 0.9663 > 0.05

Therefore, there is no significant difference between two groups.

Meaning:

There is no difference in how companies view the relationship between awareness and compliance and whether or not they're familiar with EPCRA.

TABLE 18

BIVARIATE FREQUENCY TABLE FOR EPCRA SURVEY DATA  
 Familiar with EPCRA by Received Adequate Informatio

Familiar with EPCRA  
 Received Adequate Information

Frequency  
 Expected  
 Percent  
 Row %  
 Column %

	DISAGREE	AGREE	TOTAL
NO	21 17.082 21.43 77.78 33.87	6 9.9184 6.12 22.22 16.67	27 27.55
YES	41 44.918 41.84 57.75 66.13	30 26.082 30.61 42.25 83.33	71 72.45
TOTAL	62 63.27	36 36.73	98 100

Missing = 2

Gamma =            Value            ASE  
                       0.438            0.211

**APPENDIX B:**

**PRESS RELEASES TO ANNOUNCE EPCRA INITIATIVE**



# EPA Environmental News

Contact: Carrie Deitzel  
(215) 597-6728  
93-070; June 3, 1993

## JOHN EVAN'S SONS, LANSDALE, INCLUDED IN EPA EPCRA NATIONAL INITIATIVE

PHILADELPHIA-- The U.S. Environmental Protection Agency (EPA) today filed a civil administrative complaint against John Evan's Sons, Inc., Lansdale, PA for a total penalty of \$15,000 for failing to report the use of the toxic substance trichloroethylene. The complaint represents a violation of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the federal law requiring the reporting of toxic chemical uses, releases and off-site transfers. EPCRA is intended to provide the general public and communities surrounding regulated facilities with crucial information on toxic chemical emissions.

The complaint is included in an EPCRA National Initiative announced today by EPA headquarters in Washington, DC. The Region III office of the EPA, which issued the complaint, has joined with nine other regional offices in filing complaints seeking a total of \$2.8 million against 37 manufacturing companies nationwide.

--more--

The initiative is focused on making companies aware of their obligations for complying with EPCRA. It is also intended as a reminder of the July 1st deadline for filing toxic chemical release forms with EPA headquarters and designated state agencies.

EPA Administrator Carol M. Browner said, "Today's actions reflect EPA's determination to vigorously enforce the data reporting requirements of our environmental laws and to ensure the integrity of the data submitted. Pollution prevention is the cornerstone of environmental protection, and accurate data and information are essential to planning and tracking pollution prevention."

Companies must file one toxic chemical release form for each chemical listed in EPCRA Section 313 that exceeds the specified threshold level. Subject facilities which do not report may face fines of up to \$25,000 per day per chemical.

John Evan's Sons is located in Montgomery County and employs 80 people. The company manufactures metal coil springs from metal wire (Standard Industrial Classification code 3495). An inspection by the EPA revealed that the company otherwise used trichloroethylene in excess of the 10,000 pound threshold reporting level for 1988, 1989 and 1990. However, the company failed to file toxic chemical release forms for each of these years.

Companies are required to submit toxic chemical release forms if they conduct manufacturing operations (primary Standard Industrial Classification codes 2000-3999), employ 10 or more people, and manufacture, process or use any of the more than 300 toxic chemicals listed under Section 313 above designated threshold levels.

The reported information is compiled to form the Toxic Release Inventory (TRI), a database that is directly available to the public. This information is published in an annual printed report and is available through the National Library of Medicine Toxnet and at most public and university libraries. A copy of the database can also be purchased on compact disc or magnetic media.

Facilities must annually submit a completed toxic chemical release form, for each toxic chemical subject to reporting, by July 1 for releases covering the preceding calendar year. The next forms are due by July 1, 1993 for calendar year 1992. To receive the most current version of the toxic chemical release form with instructions, companies can call the EPCRA Hotline at 1-800-535-0202.

This initiative directly follows a press conference Browner held on Tuesday, May 25, 1993 to announce the release of the 1991 TRI data. Browner also announced that by November 1, 1993, the EPA expects to expand the list of 300 chemicals by approximately 200 and require federal facilities to report.

# # # # #



# EPA Environmental News

Contact: Carrie Deitzel  
(215) 597-6728  
93-068; June 3, 1993

## LYNCHBURG STEEL AND SPECIALTY COMPANY INCLUDED IN EPA EPCRA NATIONAL INITIATIVE

PHILADELPHIA-- The U.S. Environmental Protection Agency (EPA) today filed a civil administrative complaint against Lynchburg Steel and Specialty Company, Monroe, Virginia for a total penalty of \$10,000 for failing to report the use of the toxic substance xylene. The complaint represents a violation of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the federal law requiring the reporting of toxic chemical uses, releases and off-site transfers. EPCRA is intended to inform the general public and communities surrounding regulated facilities with crucial information on toxic chemical emissions.

The complaint is included in an EPCRA National Initiative announced today by

--More--



EPA headquarters in Washington, DC. The Region III office of the EPA, which issued the complaint, has joined with nine other regional offices in filing complaints seeking a total of \$2.8 million against 37 manufacturing companies nationwide.

The initiative is focused on making companies aware of their obligations for complying with EPCRA. It is also intended as a reminder of the July 1st deadline for filing toxic chemical release forms with EPA headquarters and designated state agencies.

EPA Administrator Carol M. Browner said, "Today's actions reflect EPA's determination to vigorously enforce the data reporting requirements of our environmental laws and to ensure the integrity of the data submitted. Pollution prevention is the cornerstone of environmental protection, and accurate data and information are essential to planning and tracking pollution prevention."

Companies must file one toxic chemical release form for each chemical listed in EPCRA Section 313 that exceeds the specified threshold level. Subject facilities which do not report may face fines of up to \$25,000 per day per chemical.

Lynchburg Steel is located in Amherst County and employs 34 people. The company produces fabricated structural metal (Standard Industrial Classification code 3441). An inspection by the EPA revealed that the company used xylene in excess of the 10,000 pound threshold reporting level for 1989 and 1990. However, the company failed to file toxic chemical release forms for xylene for these years.

Companies are required to submit toxic chemical release forms if they conduct manufacturing operations (primary Standard Industrial Classification codes 2000-3999), employ 10 or more people, and manufacture, process or use any of the more than 300 toxic chemicals listed under Section 313 above designated threshold levels.

The reported information is compiled to form the Toxic Release Inventory (TRI), a database that is directly available to the public. This information is published in an annual printed report and is also available through the National Library of Medicine Toxnet national computer database and at most public and university libraries. A copy of the database can also be purchased on compact disc or magnetic media.

Facilities must annually submit a completed toxic chemical release form, for each toxic chemical subject to reporting, by July 1 for releases covering the preceding calendar year. The next reports are due by July 1, 1993 for calendar year 1992. To receive the most current version of the toxic chemical release form with instructions, companies can call the EPCRA Hotline at 1-800-535-0202.

This initiative directly follows a press conference Browner held on Tuesday, May 25, 1993 to announce the release of the 1991 TRI data. Browner also announced that by November 1, 1993, the EPA expects to expand the list of 300 chemicals by approximately 300 and require federal facilities to report.

# # # # #

Official Business  
Penalty for Private Use  
\$300



# EPA Environmental News

Contact: Carrie Deitzel  
(215) 597-6728  
93-067; June 3, 1993

## FOUR REGION III COMPANIES INCLUDED IN EPA EPCRA NATIONAL INITIATIVE

PHILADELPHIA-- The U.S. Environmental Protection Agency (EPA) today filed civil administrative complaints against four companies in West Virginia, Pennsylvania and Virginia for total penalties of \$81,000 for failing to report the use and release of toxic substances such as zinc compounds, nitroglycerin and trichloroethylene. The complaints represent violations of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the federal law requiring the reporting of toxic chemical uses, releases and off-site transfers. EPCRA is intended to provide the general public and communities surrounding regulated facilities with crucial information on toxic chemical emissions.

*= More =*

The complaints are included in an EPCRA National Initiative announced today by EPA headquarters in Washington, DC. The Region III office of the EPA, which issued the four complaints, has joined with 9 other regional offices in filing complaints seeking a total of \$2.8 million against 37 manufacturing companies nationwide.

The initiative is focused on making companies aware of their obligations for complying with EPCRA. It is also intended as a reminder of the July 1st deadline for filing toxic chemical release forms with EPA headquarters and designated state agencies.

EPA Administrator Carol M Browner said, "Today's actions reflect EPA's determination to vigorously enforce the data reporting requirements of our environmental laws and to ensure the integrity of the data submitted. Pollution prevention is the cornerstone of environmental protection, and accurate data and information are essential to planning and tracking pollution prevention."

Companies must file one toxic chemical release form for each chemical listed under EPCRA Section 313 that exceeds the specified threshold level. Subject facilities which do not report may face fines of up to \$25,000 per day per chemical.

The four companies from Region III against which complaints have been filed are ACTIV Industries, Inc., Kearneyville, WV; American National Rubber Co., Ceredo, WV; John Evan's Sons, Lansdale, PA; and Lynchburg Steel and Specialty Co., Monroe, VA.

Companies are required to submit toxic chemical release forms if they conduct manufacturing operations (primary Standard Industrial Classification codes 2000-3999), employ 10 or more people, and manufacture, process or use any of the more than 300 toxic chemicals listed under Section 313 above designated threshold levels.

The reported information is compiled to form the Toxic Release Inventory (TRI), a database that is directly available to the public. This information is published in an annual printed report and is also available through the National Library of Medicine Toxnet national computer database and at most public and university libraries. A copy of the database can also be purchased on compact disc or magnetic media.

Facilities must annually submit a completed toxic chemical release form (for each toxic chemical subject to reporting) by July 1 for releases covering the preceding calendar year. The next reports are due by July 1, 1993 for calendar year 1992. To receive the most current version of the toxic chemical release form with instructions, companies can call the EPCRA Hotline at 1-800-535-0202.

This initiative directly follows a press conference Browner held on Tuesday, May 25, 1993 to announce the release of the 1991 TRI data. Browner also announced that by November 1, 1993, the EPA expects to expand the list of 300 chemicals by approximately 200 and require federal facilities to report.

# # # #

Official Business  
Penalty for Private Use  
\$300



# EPA Environmental News

Contact: Carrie Deitzel  
(215) 597-6728  
93-067; June 3, 1993

## FOUR REGION III COMPANIES INCLUDED IN EPA EPCRA NATIONAL INITIATIVE

PHILADELPHIA-- The U.S. Environmental Protection Agency (EPA) today filed civil administrative complaints against four companies in West Virginia, Pennsylvania and Virginia for total penalties of \$81,000 for failing to report the use and release of toxic substances such as zinc compounds, nitroglycerin and trichloroethylene. The complaints represent violations of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the federal law requiring the reporting of toxic chemical uses, releases and off-site transfers. EPCRA is intended to provide the general public and communities surrounding regulated facilities with crucial information on toxic chemical emissions.

- More -

The complaints are included in an EPCRA National Initiative announced today by EPA headquarters in Washington, DC. The Region III office of the EPA, which issued the four complaints, has joined with 9 other regional offices in filing complaints seeking a total of \$2.8 million against 37 manufacturing companies nationwide.

The initiative is focused on making companies aware of their obligations for complying with EPCRA. It is also intended as a reminder of the July 1st deadline for filing toxic chemical release forms with EPA headquarters and designated state agencies.

EPA Administrator Carol M Browner said, "Today's actions reflect EPA's determination to vigorously enforce the data reporting requirements of our environmental laws and to ensure the integrity of the data submitted. Pollution prevention is the cornerstone of environmental protection, and accurate data and information are essential to planning and tracking pollution prevention."

Companies must file one toxic chemical release form for each chemical listed under EPCRA Section 313 that exceeds the specified threshold level. Subject facilities which do not report may face fines of up to \$25,000 per day per chemical.

The four companies from Region III against which complaints have been filed are ACTIV Industries, Inc., Kearneyville, WV; American National Rubber Co., Ceredo, WV; John Evan's Sons, Lansdale, PA; and Lynchburg Steel and Specialty Co., Monroe, VA.

Companies are required to submit toxic chemical release forms if they conduct manufacturing operations (primary Standard Industrial Classification codes 2000-3999), employ 10 or more people, and manufacture, process or use any of the more than 300 toxic chemicals listed under Section 313 above designated threshold levels.

The reported information is compiled to form the Toxic Release Inventory (TRI), a database that is directly available to the public. This information is published in an annual printed report and is also available through the National Library of Medicine Toxnet national computer database and at most public and university libraries. A copy of the database can also be purchased on compact disc or magnetic media.

Facilities must annually submit a completed toxic chemical release form (for each toxic chemical subject to reporting) by July 1 for releases covering the preceding calendar year. The next reports are due by July 1, 1993 for calendar year 1992. To receive the most current version of the toxic chemical release form with instructions, companies can call the EPCRA Hotline at 1-800-535-0202.

This initiative directly follows a press conference Browner held on Tuesday, May 25, 1993 to announce the release of the 1991 TRI data. Browner also announced that by November 1, 1993, the EPA expects to expand the list of 300 chemicals by approximately 200 and require federal facilities to report.

# # # #



# EPA Environmental News

Contact: Carrie Deitzel  
(215) 597-6728  
93-069; June 3, 1993

## TWO WEST VIRGINIA MANUFACTURERS INCLUDED IN EPA EPCRA NATIONAL INITIATIVE

PHILADELPHIA-- The U.S. Environmental Protection Agency (EPA) today filed civil administrative complaints against American National Rubber Company, Ceredo, WV for a penalty of \$51,000 for failing to report the use of toxic zinc compounds and ACTIV Industries, Inc. Kearneyville, WV for a penalty of \$5,000 for failing to report the use of the toxic chemical nitroglycerin.

The complaints represent a violation of Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the federal law requiring the reporting of toxic chemical uses, releases and off-site transfers. EPCRA is intended to provide the general public and communities surrounding regulated facilities with crucial information on toxic chemical emissions.

The complaints are included in an EPCRA National Initiative announced today by EPA headquarters in Washington, DC. The Region III office of the EPA, which issued the complaints, has joined with nine other regional offices in filing complaints seeking a total of \$2.8 million against 37 manufacturing companies nationwide.

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The initiative is focused on making companies aware of their obligations for complying with EPCRA. It is also intended as a reminder of the July 1st deadline for filing toxic chemical release forms with EPA headquarters and designated state agencies.

EPA Administrator Carol M. Browner said, "Today's actions reflect EPA's determination to vigorously enforce the data reporting requirements of our environmental laws and to ensure the integrity of the data submitted. Pollution prevention is the cornerstone of environmental protection, and accurate data and information are essential to planning and tracking pollution prevention."

Companies must file one toxic chemical release form for each chemical listed in EPCRA Section 313 that exceeds the specified threshold level. Subject facilities which do not report may face fines of up to \$25,000 per day per chemical.

American National Rubber Company is located in Wayne County and employs 175 people. The company manufactures gaskets, packing and sealing devices (Standard Industrial Classification code 3053). An inspection by the EPA revealed that the company used zinc compounds in excess of the 25,000 pound threshold reporting levels for 1988, 1989 and 1990. However, the company failed to file toxic chemical release forms for zinc compounds for these years.

ACTIV Industries is located in Jefferson County and employs 25 people. The company manufactures shotgun shells and small arms ammunition (Standard Industrial Classification code 3483). An inspection by the EPA revealed that the company processed nitroglycerin in excess of the 25,000 pound threshold reporting level for 1990. However, the company failed to file a 1990 toxic chemical release form for nitroglycerin.

Companies are required to submit toxic chemical release forms if they conduct manufacturing operations (primary Standard Industrial Classification codes 2000-3999), employ 10 or more people, and manufacture, process or use any of the more than 300 toxic chemicals listed under Section 313 above designated threshold levels.

The reported information is compiled to form the Toxic Release Inventory (TRI), a database that is directly available to the public. This information is published in an annual printed report and is available through the National Library of Medicine Toxnet national computer database and at most public and university libraries. A copy of the database can also be purchased on compact disc or magnetic media.

Facilities must annually submit a completed toxic chemical release form (for each toxic chemical subject to reporting) by July 1 for releases covering the preceding calendar year. The next forms are due by July 1, 1993 for calendar year 1992. To receive the most current version of the toxic chemical release form with instructions, companies can call the EPCRA Hotline at 1-800-535-0202.

This initiative directly follows a press conference Browner held on Tuesday, May 25,  
--More--

1993 to announce the release of the 1991 TRI data. Browner also announced that by November 1, 1993, the EPA expects to expand the list of 300 chemicals by approximately 200 and require federal facilities to report.

# # # # #



APPENDIX C:

LIST OF PUBLICATIONS  
WHERE RELEASES WERE SENT

**PUBLICATIONS WHERE PRESS RELEASES WERE SENT  
TO ANNOUNCE EPCRA NATIONAL INITIATIVE**

**To Receive Regional Press Release:**

1) Advanced Materials and Processes  
9639 Kinsman Road  
Materials Park, OH 44073-0002  
(216) 338-5151  
fax (216) 338-4634

2) Agricultural Chemical News  
PO Box 9335  
Fresno, CA 93791-9335  
(209) 435-2163  
fax (209) 435-8319

3) American Druggist  
60 E. 42nd Street  
New York, NY 10165-0012  
(212) 297-9680  
fax (212) 286-9886

4) American Drycleaner  
500 N. Dearborn Street  
Chicago, IL 60610-4901  
(312) 337-7700  
fax (312) 337-8654

5) American Machinist  
826 Broadway, 4th Floor  
New York, NY 10003  
(212) 477-6420  
fax (212) 477-6457

6) American Pharmacy  
2215 Constitution Avenue, NW  
Washington, DC 20037-2976  
(202) 628-4410  
fax (202) 783-2351

7) APICS. The Performance Advantage  
2555 Cumberland Parkway, #299  
Atlanta, GA 30339  
(404) 435-2849  
fax (404) 432-6969

8) ASHRAE Journal  
1791 Tullie Circle, NE  
Atlanta, GA 30329-2305  
(404) 636-8400  
fax (404) 321-5478

9) Associated Press  
222 St. Paul Place, Suite 400  
Baltimore, MD 21202  
(410) 539-3524  
fax (410) 727-1550

10) Associated Press  
2021 K Street, NW, Suite 606  
Washington, DC 20006  
(202) 828-6400  
fax (202) 828-6422

11) Automotive Engineering  
400 Commonwealth Drive  
Warrendale, PA 15096-0001  
(412) 776- 4841  
fax (412) 776-9765

12) Automotive Industries  
1 Chilton Way  
Radnor, PA 19089  
(215) 964-4254  
fax (215) 964-4981

13) Automotive News  
841 National Press Building  
Washington, DC 20045  
(202) 662-7200  
fax (202) 638-3155

14) Baltimore Sun, The  
50 N. Calvert  
Baltimore, MD 21278  
(410) 332-6000  
fax (410) 752-6049

15) Builder  
655 15th Street, NW, #475  
Washington, DC 20005-5701  
(202) 737-0717  
fax (202) 737-2439

16) Building Design & Construction  
1350 E. Touhy Avenue  
Des Plaines, IL 60018-3303  
(708) 635-8800  
fax (708) 299-8622

17) Building Products  
655 15th Street, NW, #475  
Washington, DC 20005-5701  
(202) 737-0717  
fax (202) 737-2439

18) Cars & Parts

P.O. Box 482  
Sidney, OH 45365-0482  
(513) 498-0803  
fax (513) 498-0808

19) Chemical & Engineering News

1155 16th Street, NW  
Washington, DC 20036-4800  
(202) 872-4600  
fax (202) 872-6381

20) Chemical Engineering

108 Hamilton Avenue  
Silver Springs, MD 20901-3415  
(301) 565-2798  
fax (301) 565-2798 (home#)

21) Chemical Equipment

301 Gibraltar Drive  
Morris Plains, NJ 07950-3406  
(201) 292-5100  
fax (201) 539-3476

22) Chemical Processing

301 E. Erie Street  
Chicago, IL 60611-3037  
(312) 644-2020  
fax (312) 644-1131

23) Chemical Week

810 Seventh Avenue  
New York, NY 10019-5849  
(212) 586-3430  
fax (212) 621-4950

24) Coal

101 Pine Villa Drive  
Beckley, WV 25801-9358  
(304) 252-6801  
fax (312) 726-2574

25) Contracting Business

1100 Superior Avenue  
Cleveland, OH 44114-2518  
(216) 696-7000  
(216) 696-7932

26) Farm Industry News

7900 International Drive, #300  
Minneapolis, MN 55425-1510  
(612) 851-9329  
fax (612) 851-4601

27) Gannett News Service  
PO Box 7858  
Washington, DC 20044  
fax (202) 243-0190

28) International Operating Engineer  
1125 17th Street, NW  
Washington, DC 20036-4707  
(202) 429-9100  
fax (202) 429-0316

29) Journal of Petroleum Technology  
P.O. Box 833836  
Richardson, TX 75083-3836  
(214) 669-3377  
fax (214) 952-9435

30) Maintenance Technology  
1300 S. Grove Avenue, #205  
Barrington, IL 60010-5262  
(708) 382-8100  
fax (708) 304-8603

31) Managing Automation  
5 Penn Plaza  
New York, NY 10001-1810  
(212) 695-0500  
fax (212) 629-1584

32) Maryland PHCC News & Views  
10176 Baltimore National Pike, #205  
Ellicott City, MD 21043-3652  
(410) 461-5977  
fax (410) 750-2507

33) Material Handling Engineering  
1100 Superior Avenue  
Cleveland, OH 44114-2518  
(216) 696-7000  
fax (216) 696-7658

34) Materials Engineering  
1100 Superior Avenue  
Cleveland, OH 44114-2518  
(216) 696-7000  
fax (216) 696-0177

35) Metal Forming  
27027 Chardon Road  
Richmond Heights, OH 44143-1193  
(216) 585-8800  
fax (216) 585-3126

36) Metals Week  
1221 Avenue of the Americas  
New York, NY 10020-1001  
(212) 512-2823  
fax (212) 512-2949

37) Metalworking Digest  
P.O. Box 650  
Morris Plains, NJ 07950-0650  
(201) 292-5100  
fax (201) 898-9281

38) Metlflax Magazine  
29100 Aurora Road, #200  
Cleveland, OH 44139-1855  
(216) 248-1125  
fax (216) 248-0187

39) Modern Materials Handling  
275 Washington Street  
Newtown, MA 02158-1611  
(617) 964-3030  
fax (617) 558-4402

40) Modern Plastics  
1221 Avenue of the Americas  
New York, NY 10020-1001  
(212) 512-6241  
fax (212) 512-6111

41) National Clothesline, The  
717 E. Chelton Avenue  
Philadelphia, PA 19144-1298  
(215) 843-9795  
fax (215) 843-8511

42) New Equipment Digest  
1100 Superior Avenue  
Cleveland, OH 44114-2518  
(216) 696-7000  
fax (216) 696-7932

43) Packaging  
1350 E. Touhy Avenue  
Des Plaines, IL 60018-3303  
(708) 635-8800  
fax (708) 635-6856

44) Packaging Digest  
400 N. Michigan Avenue  
Chicago, IL 60611-4187  
(312) 222-2000  
fax (312) 222-2026

45) Painters and Allied Trades Journal, The  
1750 New York Avenue, NW  
Washington, DC 20006-5301  
(202) 637-0700  
fax (202) 637-0771

46) Pennsylvania Contractor  
4015 Jonestown Road  
Harrisburg, PA 17109-2212  
(717) 541-9109  
fax (717) 541-9823

47) Pharmacy Times  
PO Box 911  
Port Washington, NY 11050-0241  
(516) 883-6350  
fax (516) 883-6609

48) Plant Engineering  
1350 E. Touhy Avenue  
Des Plaines, IL 60018-3303  
(708) 635-8800  
fax (708) 390-2636

49) Plant Services  
301 E. Erie Street  
Chicago, IL 60611-3037  
(312) 644-2020  
fax (312) 644-1131

50) Plastics News  
1725 Merriman Road  
Akron, OH 44313-5283  
(216) 836-9180  
fax (216) 836-2322

51) Plastics World  
275 Washington Street  
Newton, MA 02158-1611  
(617) 558-4232  
fax (617) 558-4417

52) Plastics World (NY)  
249 W. 17th Street  
New York, NY 10011-5300  
(212) 645-0067  
fax (212) 463-6404

53) Processing  
301 E. Erie Street  
Chicago, IL 60611-3037  
(312) 644-2020  
fax (312) 644-1131

54) Production  
6600 Clough Pike  
Cincinnati, OH 45244-4028  
(513) 231-8020  
fax (513) 231-2818

55) Quality  
191 Gary Avenue South  
Carol Stream, IL 60188-2095  
(708) 665-1000  
fax (708) 462-2225

56) Quality Progress  
310 W. Wisconsin Avenue  
Milwaukee, WI 53203-2205  
(414) 272-8575  
fax (414) 272-1734

57) Reuters Limited  
1700 Broadway  
New York, NY 10019  
(212) 603-3300  
fax (212) 603-3446

58) Reuters Limited  
1333 H Street, NW, Suite 410  
Washington, DC 20005  
(202) 898-8300  
fax (202) 898-8383

59) Surplus Record  
20 N. Wacker Drive  
Chicago, IL 60606-3181  
(312) 372-9077  
fax (312) 372-6537

60) Tire Business  
814 National Press Building  
Washington, DC 20045  
(202) 662-7200  
fax (202) 638-3155

61) Today's Chemist  
500 Post Road East  
Westport, CT 06880-4431  
(203) 226-7131  
fax (203) 454-9939

62) U.A. Journal  
P.O. Box 37800  
Washington, DC 20013-7800  
(202) 628-5823  
fax (202) 628-5024



63) United Press  
1400 Eye Street, NW, Suite 800  
Washington, DC 20005  
(202) 898-8000  
fax (202) 789-2362

64) U.S. Pharmacist  
352 Park Avenue South  
New York, NY 10010-1709  
(212) 685-4848  
fax (212) 696-5318

65) U.S. Oil Week  
1101 King Street, #444  
Alexandria, VA 22314-2944  
(703) 683-4100  
fax (703) 739-6517

66) Washington Post, The  
1150 15 St., NW  
Washington, DC 20071  
(202) 334-6000  
fax nat'l (202) 334-5547  
fax local (202) 334-5661

67) Washington Times  
3600 New York Avenue, NE  
Washington, DC 20002  
(202) 636-3000  
fax (202) 269-3419

**To Receive West Virginia Press Release:**

68) Associated Press  
1001 Virginia St. E., Suite 206  
Charleston, WV 25301  
(304) 346-0897  
fax (304) 345-5282

69) Huntington Herald Dispatch  
P.O. Box 2017, 946 Fifth Avenue  
Huntington, WV 25720  
(304) 526-4000

70) Martinsburg Journal  
P.O. Box 807  
207 W. King Street  
Martinsburg, WV 25401  
(304) 263-8931  
fax (304) 263-8058

71) Spirit of Jefferson  
P.O. Box 966  
Charles Town, WV 25414  
(304) 725-2046

72) Wheeling Intelligencer/News Register  
1500 Main Street  
Wheeling, WV 26003  
(304) 233-0100  
fax (304) 233-0100 x287

**To Receive Virginia Press Release:**

73) Associated Press  
700 E. Main, Suite 1300  
Richmond, VA 23219  
(804) 643-6646  
fax (804) 643-6223

74) Bedford Bulletin  
P.O. Box 331  
Bedford, VA 24523  
(703) 586-8612  
fax (703) 586-0834

75) Danville Register & Bee  
700 Monument Street  
Danville, VA 24541  
(804) 793-2311  
fax (804) 797-2299

76) Lynchburg News and Advance  
P.O. Box 10129  
101 Wyndale Drive  
Lynchburg, VA 24506  
(804) 385-5941

77) New Era-Progress  
P.O. Box 90  
Amherst, VA 24521  
(804) 946-7195

78) Richmond News Leader  
Box C-32333  
333 E. Grace Street  
Richmond, VA 23293  
(804) 649-6000

79) Richmond Times Dispatch  
Box C-32333  
333 E. Grace Street  
Richmond, VA 23293  
(804) 649-6000

80) Times-Virginian  
P.O.Box 2097  
Appomattox, VA 24522  
(804) 352-8215  
fax (804) 352-2216

**To Receive Pennsylvania Press Release:**

81) Associated Press  
One Franklin Plaza, Suite 250  
Philadelphia, PA 19102  
(215) 561-1133  
fax (215) 561-3544

82) Bucks-Mont Courier  
P.O. Box 204  
Harleysville, PA 19438  
(215) 721-9100

83) Lansdale Reporter, The  
P.O. Box 390  
307 Derstine Avenue  
Lansdale, PA 19446  
(215) 855-8440  
fax (215) 368-5367

84) Montgomery Co. Observer  
1050 Route 202  
Blue Bell, PA 19422  
(215) 277-6342

85) Norristown Times - Herald  
P.O. Box 591  
410 Markley Street  
Norristown, PA 19404  
(215) 272-2500  
fax (215) 272-4003

86) Philadelphia Inquirer  
P.O. Box 8263  
400 N. Broad Street  
Philadelphia, PA 19101  
(215) 854-2000  
fax (215) 854-4794

87) Philadelphia News  
P.O. Box 7788  
400 N. Broad Street  
Philadelphia, PA 19101  
(215) 854-5900  
fax (215) 854-5524

88) Phoenixville Phoenix  
225 Bridge Street  
Phoenixville, PA 19460  
(215) 933-8926  
fax (215) 933-1181

89) Reporter, The  
P.O. Box 28  
Royersford, PA 19468  
(215) 948-4850  
fax (215) 948-5914

90) Schwenksville Item  
P.O. Box 38  
Schwenksville, PA 19473  
(215) 287-8131  
fax (215) 489-4252

91) United Press  
1819 JFK Boulevard, Suite 301  
Philadelphia, PA 19103  
(215) 563-6008  
fax (215) 563-3778

APPENDIX D:

SURVEY INSTRUMENT AND DATA CONTROL LOG

## SURVEY INSTRUMENT FOR EPCRA PROJECT

Can I speak with someone who handles environmental laws and regulations at your company?

Hello, my name is Christine Eustis. I am a graduate student at Penn State University. This summer I received a fellowship from the federal Environmental Protection Agency's Region III Office of External Affairs to study communication techniques at government environmental agencies. I'm mainly interested in finding out what you think about the government's current environmental outreach strategies and how they can be improved to better inform companies like yours about environmental policies.

Your company has been selected at random to be included in the telephone survey.

Do you have 10-15 minutes to answer the questions on the survey? We can do the survey now, if you have time, or set up a time that I can call back; whichever is most convenient for you.

(If they say YES, we can do it now, read below)

Before we begin, let me assure you that all your responses are completely confidential and are not linked in any way to you, your company or your telephone number. I am only interested in general statistics, not specific characteristics about your company.

(If they say NO, emphasize the importance of their responses in helping the government better assist companies through public relations campaigns. Also, reiterate that their responses will be anonymously entered into a database without any link to their name, company name or phone number. The data from 100 companies will be entered and analyzed for general statistics only.)

SET UP TIME TO CALL BACK

OR

CONTINUE WITH SURVEY

First, I am going to ask you general questions about the government's present communication techniques.

1) How do you feel about the amount of publicity the EPA uses to announce environmental laws. Do you feel the EPA publicizes too much, about the right amount, or too little on environmental regulations?

NOT ENOUGH	1
ABOUT RIGHT	2
TOO MUCH	3
DON'T KNOW	8
REFUSAL	9

2) From what media or other information source do you receive news about federal environmental laws and regulations? I'm going to read the choices once. Please select all choices that apply. (READ RESPONSES. CHECK ALL THAT APPLY.)

_____ FEDERAL REGISTER	1	_____ DIRECT MAILERS	7
_____ TELEVISION	2	_____ OTHER COMPANIES	10
_____ NEWSPAPERS	3	_____ RADIO	11
_____ TRADE PUBLICATIONS	4	_____ ANOTHER ____	12
_____ ATTORNEYS	5	_____ DON'T KNOW	8
_____ OUTREACH WORKSHOPS	6	_____ REFUSAL	9

2a) Which one source keeps you best informed?

3) What trade publication(s), if any, does your company (or division) subscribe to? \_\_\_\_\_

4) What agency or organization do you most rely on for information and advice on environmental regulations? Again, I'm going to read all the choices. Please choose the best one. (READ ALL RESPONSES.)

LOCAL ENVIRONMENTAL AGENCY	1
STATE ENVIRONMENTAL AGENCY	2
FEDERAL ENVIRONMENTAL PROTECTION AGENCY	3
NONPROFIT ORGANIZATION	4
ATTORNEYS (LEGAL COUNSEL)	5
INTERNAL SOURCE (PLEASE SPECIFY _____)	6
ANOTHER _____	7
DON'T KNOW	8
REFUSAL	9

ALL THREE GOVERNMENT AGENCIES	10
ENVIRONMENTAL CONSULTANT	11
NONE	12

5) In your opinion, what agency or organization should be primarily responsible for keeping companies like yours informed about environmental laws and regulations? The choices are the same: (READ ALL RESPONSES.)

LOCAL ENVIRONMENTAL AGENCY	1
STATE ENVIRONMENTAL AGENCY	2
FEDERAL ENVIRONMENTAL PROTECTION AGENCY	3
NONPROFIT ORGANIZATION	4
ATTORNEYS (LEGAL COUNSEL)	5
INTERNAL SOURCE (PLEASE SPECIFY _____)	6
OTHER _____	7
DON'T KNOW	8
REFUSAL	9
ALL THREE GOVERNMENT AGENCIES	10
ENVIRONMENTAL CONSULTANT	11
NONE	12

(ASK IF THEY ANSWERED 1, 2, OR 3 TO ABOVE QUESTION:)

\*6) Since you believe it is the government's responsibility, what methods do you feel would be most effective in educating companies like yours about environmental laws and regulations, given limited resources? \_\_\_\_\_

7) Are you in contact at all with your Local Emergency Planning Committee and/or State Emergency Response Commission?

NO	1
YES	2
DON'T KNOW	8
REFUSAL	9



Now I am going to ask you more specific questions about the Emergency Planning and Community Right-to-Know Act (commonly referred to as EPCRA or SARA TITLE III).

8) Are you familiar with the regulations under EPCRA (often referred to as the Right-to-Know Act)?

- NO 1 (IF NO, GO TO QUES. 15)
- SOMEWHAT 2
- YES 3
- DON'T KNOW 8
- REFUSAL 9

\*9) (IF SOMEWHAT OR YES) How did you become aware of this statute? (READ RESPONSES. CHECK ALL THAT APPLY.)

- |       |                    |   |       |                  |    |
|-------|--------------------|---|-------|------------------|----|
| _____ | FEDERAL REGISTER   | 1 | _____ | DIRECT MAILERS   | 7  |
| _____ | TELEVISION         | 2 | _____ | CO. WHO VIOLATED | 10 |
| _____ | NEWSPAPERS         | 3 | _____ | RADIO            | 11 |
| _____ | TRADE PUBLICATIONS | 4 | _____ | OTHER _____      | 12 |
| _____ | ATTORNEYS          | 5 | _____ | DON'T KNOW       | 8  |
| _____ | OUTREACH WORKSHOP  | 6 | _____ | REFUSAL          | 9  |

\*9a) Which one source keeps you best informed about EPCRA?

\*10) As you might know, there are four major sections under EPCRA. I'm interested to know if you're familiar with Section 313, which pertains to release reporting requirements for certain toxic chemicals?

- NO 1 (IF NO, GO TO QUES. 15)
- SOMEWHAT 2
- YES 3
- DON'T KNOW 8
- REFUSAL 9

\*11) (IF SOMEWHAT OR YES) How did you become aware of Section 313? (READ RESPONSES. CHECK ALL THAT APPLY.)

_____	FEDERAL REGISTER	1	_____	DIRECT MAILERS	7
_____	TELEVISION	2	_____	CO. WHO VIOLATED	10
_____	NEWSPAPERS	3	_____	RADIO	11
_____	TRADE PUBLICATIONS	4	_____	OTHER _____	12
_____	ATTORNEYS	5	_____	DON'T KNOW	8
_____	OUTREACH WORKSHOP	6	_____	REFUSAL	9

\*11a) Which one source keeps you best informed?

\*12) More specifically, are you familiar with the threshold requirements for the toxic chemicals subject to Section 313?

NO	1
SOMEWHAT	2
YES	3
DON'T KNOW	8
REFUSAL	9

\*13) Do you know when the reporting deadline is for filing toxic chemical release inventory forms with the EPA and designated state agencies which is stated under Section 313?

NO	1
YES	2
DON'T KNOW	8
REFUSAL	9



\*17a) Which one source kept you best informed about the TRI data?

18) Did you hear any publicity about the EPCRA National Initiative that was announced in early June and names companies who have recently had actions filed against them for violating the Act?

NO	1 (IF NO, GO TO QUES. 20)
YES	2
DON'T KNOW	8
REFUSAL	9

\*19) (IF YES) Where did you hear about it?  
(READ RESPONSES. CHECK ALL THAT APPLY.)

_____		_____	DIRECT MAILERS	7	
_____	TELEVISION	2	_____	CO. WHO VIOLATED	10
_____	NEWSPAPERS	3	_____	RADIO	11
_____	TRADE PUBLICATIONS	4	_____	OTHER _____	12
_____	ATTORNEYS	5	_____	DON'T KNOW	8
_____	OUTREACH WORKSHOP	6	_____	REFUSAL	9

\*19a) Which one source kept you best informed about the National Initiative?

20) In your opinion, does publicizing enforcement actions against companies deter other companies from violating the regulations?

NO	1
YES	2
DON'T KNOW	8
REFUSAL	9

21) Are you aware that the EPA has an EPCRA NATIONAL HOTLINE which companies can call for regulatory and technical assistance?

NO	1
YES	2
DON'T KNOW	8
REFUSAL	9

22) What would you recommend to the EPA and state environmental agencies to help them better publicize EPCRA and other environmental regulations?\_\_\_\_\_

Thank you for your time, the survey is almost completed. I just want to ask you some general questions about your company so that I can gather a cross-section of data from different types of companies.

23) How many full-time employees are at your company? \_\_\_\_\_

24) What were your estimated gross sales for the last fiscal year? I'm going to read a series of categories. Which one does your company fall into?

LESS THAN 2 MILLION DOLLARS	1
2 TO 5 MILLION DOLLARS	2
5 TO 10 MILLION DOLLARS	3
10 TO 50 MILLION DOLLARS	4
50 TO 100 MILLION DOLLARS	5
OVER 100 MILLION DOLLARS	6
DON'T KNOW	8
REFUSAL	9

25) How much money do you estimate that your company spends annually to comply with environmental regulations? Again, I'm going to read categories.

UNDER 50,000 DOLLARS	1
BETWEEN 50,000 AND 100,000 DOLLARS	2
BETWEEN 100,000 AND 250,000 DOLLARS	3
BETWEEN 250,000 AND 500,000 DOLLARS	4
BETWEEN 500,000 AND 1 MILLION DOLLARS	5
OVER 1 MILLION DOLLARS	6
DON'T KNOW	8
REFUSAL	9

26) How many other locations does your company have?

27) What is your primary Standard Industrial Classification code?

(This last question is optional)

\*28) What types of products does your company manufacture?

Thank you so much for your time. That's the end of the survey. Do you have any questions?

DATA CONTROL LOG FOR EPCRA SURVEY

Code Number: \_\_\_\_\_

1 \_\_\_\_\_

2 \_\_\_\_\_

2a \_\_\_\_\_

3 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

\*6 \_\_\_\_\_

\_\_\_\_\_

7 \_\_\_\_\_

8 \_\_\_\_\_

\*9 \_\_\_\_\_

\*9a \_\_\_\_\_

\*10 \_\_\_\_\_

\*11 \_\_\_\_\_

\*11a \_\_\_\_\_

\*12 \_\_\_\_\_

\*13 \_\_\_\_\_

14 a \_\_\_\_\_ b \_\_\_\_\_

c \_\_\_\_\_ d \_\_\_\_\_

15 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

16 \_\_\_\_\_

\*17 \_\_\_\_\_

\*17a \_\_\_\_\_

18 \_\_\_\_\_

\*19 \_\_\_\_\_

\*19a \_\_\_\_\_

20 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

21 \_\_\_\_\_

22 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23 \_\_\_\_\_

24 \_\_\_\_\_

25 \_\_\_\_\_

26 \_\_\_\_\_

27 \_\_\_\_\_

\*28 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Area code: \_\_\_\_\_

Corresponding State: \_\_\_\_\_

APPENDIX E:

CODEBOOK

CODEBOOK FOR ECPRA SURVEY  
CHRISTINE EUSTIS  
JULY 1993

NUMBER	NAME	TYPE	VARIABLE DESCRIPTION	
1	ID Number	Numeric	Case number in chrono. order	#1
2	Q1	Numeric	Amount of EPA Publicity	Q1
3	Q2	Numeric	Sources of EPA info	Q2
4	Q2a	Numeric	Number one source	Q2a
5	Q3	Character	Trade Publications	Q3
	Q3.1	Numeric	Number of pubs index	Q3.1
6	Q4	Numeric	Agency most rely on	Q4
7	Q5	Numeric	Agency should be respon.	Q5



VARIABLE VALUES	VAR. TYPE	TYPE DESCRIPTOR
1-100	Data Mgmt	Primary key identifier
1=Not enough 2=About right 3=Too much 8=Don't know 9=Refusal .=Missing	ind. var.	Ordinal/discrete
1=Federal Register 2=TV 3=Newspapers 4=Trade Publications 5=Attorneys 6=Outreach workshops 7=Direct mailers 8=Don't know 9=Refusal 10=Other companies 11=Radio 12=Another .=Missing	ind. var.	Nominal/discrete
Same codes as above	ind. var.	Nominal/discrete
25 characters	ind. var.	Categorical variable
0=0 1=1 2=more than 1	ind. var.	Nominal/discrete
1=Local env. agency 2=State env. agency 3=Federal EPA 4=Nonprofit org. 5=Attorneys 6=Internal Source 7=Another 8=Don't know 9=Refusal 10=local,state&fed 11=env.consultant 12=None	ind. var.	Nominal/discrete
Same codes as above	ind. var.	Nominal/discrete

8 Q6	Character	Most effective method to inform	Q6
9 Q7	Numeric	Contact with LEPC or SERC	Q7
10 Q8	Numeric	Familiar with EPCRA	Q8
11 Q9	Numeric	Sources of EPCRA info	Q9
12 Q9a	Numeric	Number one source	Q9a
13 Q10	Numeric	Section 313 specs	Q10
14 Q11	Numeric	Sources of EPCRA info	Q11
15 Q11a	Numeric	Number of source	Q11a

25 characters	ind. var.	Categorical variable
1=No 2=Yes 8=Don't know 9=Refusal .=Missing	indep. var.	Ordinal/discrete
1=No 2=Somewhat 3=Yes 8=Don't know 9=Refusal .=Missing	dep. var.	Ordinal/discrete
1=Federal Register 2=TV 3=Newspapers 4=Trade Publications 5=Attorneys 6=Outreach workshops 7=Direct mailers 8=Don't know 9=Refusal 10=Other companies 11=Radio 12=Another .=Missing	ind. var.	Nominal/discrete
Same codes as above	ind. var.	Nominal/discrete
1=No 2=Somewhat 3=Yes 8=Don't know 9=Refusal .=Missing	dep. var.	Ordinal/discrete
1=Federal Register 2=TV 3=Newspapers 4=Trade Publications 5=Attorneys 6=Outreach workshops 7=Direct mailers 8=Don't know 9=Refusal 10=Other companies 11=Radio 12=Another .=Missing	ind. var.	Nominal/discrete
Same codes as above	ind. var.	Nominal/discrete

16 Q12	Numeric	Threshold requ. Section 313	Q12
17 Q13	Numeric	Reporting deadline	Q13
18 Q14A	Numeric	LACK OF AWARENESS	Q14
19 Q14B	Numeric	RECEIVE ADEQUATE INFO	
20 Q14C	Numeric	BETTER AWARENESS=COMPLIANCE	
21 Q14D	Numeric	PENALIZING COMPANIES	
22 Q15	Character	Why co. don't comply	Q15
23 Q16	Numeric	Publicity re: TRI data	Q16
24 Q17	Numeric	Sources of EPA info	Q17
25 Q17a	Numeric	Number one source	Q17a
26 Q18	Numeric	Publicity on national init.	Q18
27 Q19	Numeric	Sources of info	Q19

1=No 2=Somewhat 3=Yes 8=Don't know 9=Refusal .=Missing	dep. var.	Ordinal/discrete
Same codes as above	dep. var.	Ordinal/discrete
1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree 8=Don't know 9=Refusal .=Missing	dep. var. or ind. var.	Ordinal/discrete
25 characters	ind. var.	Categorical variable
1=No 2=Yes 8=Don't know 9=Refusal .=Missing	ind. var.	Ordinal/discrete
2=TV 3=Newspapers 4=Trade Publications 5=Attorneys 6=Outreach workshops 7=Direct mailers 8=Don't know 9=Refusal 10=Other companies 11=Radio 12=Another .=Missing	ind. var.	Nominal/discrete
Same codes as above	ind. var.	Nominal/discrete
1=No 2=Yes 8=Don't know 9=Refusal .=Missing	ind. var.	Ordinal/discrete
2=TV 3=Newspapers 4=Trade Publications 5=Attorneys 6=Outreach workshops 7=Direct mailers 8=Don't know	ind. var.	Nominal/discrete

28	Q19a	Numeric	Number one source	Q19a
29	Q20	Numeric	Publicizing enforc. actions	Q20
30	Q21	Numeric	EPCRA National Hotline	Q21
31	Q22	Character	Further recommends	Q22
32	Q23	Numeric	Number of employees	Q23
33	EMP	Numeric	Actual employee count	EMP
33	Q24	Numeric	Gross sales for last FY	Q24
34	Q25	Numeric	Amount to comply with regs.	Q25
35	Q26	Numeric	Number of other locations	Q26
36	Q27	Numeric	Primary SIC code	Q27
37	Q28	Numeric	Products manufactured	Q28

9=Refusal  
 10=Other companies  
 11=Radio  
 12=Another  
 .=Missing

Same codes as above      ind. var.      Nominal/discrete

1=No  
 2=Yes  
 8=Don't know  
 9=Refusal  
 .=Missing      dep. var.      Ordinal/discrete

1=No  
 2=Yes  
 8=Don't know  
 9=Refusal  
 .=Missing      ind. var.      Ordinal/discrete

25 characters      ind. var.      Categorical variable

1 = under 50  
 2 = 51-300  
 3 = 301 and over  
 8=Don't know  
 9=Refusal  
 .=Missing      ind. var.      Ordinal/discrete

Numeric      ind. var.      Interval/discrete

1=less than 2 million  
 2=2-5 million  
 3=5-10 million  
 4=10-50 million  
 5=50-100 million  
 6=over 100 million  
 8=Don't know  
 9=Refusal      ind. var.      Ordinal/discrete

1=Under \$50K  
 2=\$50-\$100K  
 3=\$100-\$250K  
 4=\$250-500K  
 5=\$500K-1 million  
 6=Over 1 million  
 8=Don't know  
 9=Refusal      ind. var.      Ordinal/discrete

5 characters      ind. var.      Categorical variable

5 characters      ind. var.      Ordinal/discrete

20=Food      ind. var.      Ordinal/discrete

38 Area code	Numeric	Area code of # called
39 State	Character	Cooresponding state



21=Tobacco  
22=Textiles  
23=Apparel  
24=Lumber, wood  
25=Furniture  
26=Paper  
27=Printing, publishing  
28=Chemicals  
29=Petroleum and coal  
30=Rubber, plastics  
31=Leather  
32=Stone, clay, glass  
33=Primary metals  
34=Fabricated metals  
35=Machinery(not electrical)  
36=Electrical, electronic  
37=Transportation Equip  
38=Instruments  
39=Misc. manufacturing

3 characters                    ind. var.                    Categorical variable

2 characters                    ind. var.                    Categorical variable

**APPENDIX F:**

**QUESTIONS AND ANSWERS USED FOR SURVEY**

## QUESTION AND ANSWER SHEET FOR EPCRA SURVEY

I will be interviewing 100 companies.

### WHO IS SPONSORING (PAYING FOR) THE SURVEY?

The survey is sponsored by the United States Environmental Protection Agency's Region III Office of External Affairs. The funding for this survey is provided by a National Network for Environmental Management Studies fellowship program which gives funding to undergraduate and graduate students to conduct research on environmental issues.

### WHAT IS THE PURPOSE OF THIS SURVEY?

There are three main goals of this survey:

- 1) To determine how manufacturing companies in Region III are learning about environmental regulations.
- 2) To assess if increased awareness of environmental regulations increases compliance by regulated industries.
- 3) To discover how the EPA can better educate these companies about environmental regulations.
- 4) To determine if publicizing enforcement actions against companies deters other companies from violating the regulations.

### WHO IS THE PERSON RESPONSIBLE FOR THIS SURVEY?

I am responsible for this survey. I am a graduate student at Penn State University and am solely responsible for collecting the data, analyzing the results and writing the final report. This report will summarize my findings and provide the Office of External Affairs at the U.S. EPA in Region III with my recommendations for how they can better communicate environmental regulations to affected companies.

### HOW DID YOU GET MY COMPANY NAME, MY NAME AND TELEPHONE NUMBER?

Your company's telephone number has been randomly selected from a computer database compiled by Dun & Bradstreet Information Systems. The database is called FINDS or Facility Index Systems which collects data on more than 10 million companies. In order to generate a sampling frame, I had D&B select all companies who are covered under Section 313 of the Emergency Planning and Community Right-to-Know Act. As it is stated in the Act, the companies who must comply have primary Standard Industrial Classification codes between 2000 and 3999 and more than 10 employees. I further narrowed the list to include only those companies in Region III, which includes Pennsylvania, Delaware, Maryland, Virginia, West Virginia and Washington, DC. This process generated a list of 14,305 companies. D&B then randomly selected 1,000 companies who all had an equal chance of being included in the final sampling frame. I am going down this list

and calling these companies.

**IS THIS SURVEY CONFIDENTIAL?**

I can assure you that this survey is completely confidential! I have your company name and phone number on an index card. After you agree to respond to the survey, I will code your responses on a separate code sheet and assign it a code number that is separate and distinct from your company name or phone number. There is no way for anyone, including myself, to link your responses to your phone number or company name.

**CAN I GET A COPY OF THE RESULTS?**

Yes. The results will be available after August 31, 1993. I can take your name and current address over the phone, or if you prefer, you can call, Janet Viniski, Head of the Education and Outreach Branch of the U.S. Environmental Protection Agency Region III at (215) 597-6554.

**WHO CAN I TALK TO ABOUT TECHNICAL QUESTIONS REGARDING EPCRA?**

If you have any technical questions regarding the Emergency Planning and Community Right-to-Know Act, you can contact Kurt Elsner, Acting Chief, TSCA Enforcement and TRI Section, Region III at (215) 597-9937.

**HOW CAN I RECEIVE ADDITIONAL INFORMATION ABOUT EPCRA?**

The EPA has established an EPCRA Information Hotline which you can call between 8:30 am and 7:30 pm Eastern Time to get information or copies of the toxic chemical release inventory forms. The number is (800) 535-0202 or (703) 412-9877. Or you can write to: Emergency Planning and Community Right-to-Know Information Hotline 401 M St. SW (OS-120) Washington, DC 20460. Or the Emergency Planning and Community Right-to-Know Document Distribution Center, P.O. Box 12505, Cincinnati, OH 45212.

**WHAT IS THE PURPOSE OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT?**

EPCRA is intended to increase public's knowledge and access to information on the presence of hazardous chemicals in their communities and releases of these chemicals into their environment. It is also intended to help communities better meet their responsibilities in regard to potential chemical emergencies. This is a broad summary. The EPA has many brochures and handouts that will better explain EPCRA. You can receive them by calling or writing to the EPCRA Information Hotline.

**APPENDIX G:**

**TOP TRADE PUBLICATIONS COMPANIES NAMED**

## **TOP TRADE PUBLICATIONS COMPANIES NAMED**

### **PRINTING & PUBLISHING**

Printing Impressions (4)  
Graphic Arts Monthly (2)  
American Lithographer  
Print Graphics  
Printers Inc.  
Graphic Reproductions  
Quick Printing  
Instant Printing  
Paintware  
Graphic Arts Association Publication  
Business Forms and Labels

### **FOOD**

National Association for Food Packagers and Producers  
Packer  
Produce News  
Food Business  
Beverage World  
Brewers News  
Bakery Products  
Bakery Industry News  
Snack Food Association Publication  
Soft Drink World

### **MACHINERY**

Modern Machine Shop (2)  
American Machinist  
Welding  
Manufacturer Engineering  
Metalworking and Machining  
Wire Journal  
Machine Tools

### **LUMBER & WOOD**

Modern Woodworking (2)  
Custom Woodworking  
Cabinets  
Woodworkers  
Kitchen Business News  
Remodeling

### **FABRICATED & PRIMARY METALS**

Metal Facts (2)  
Metal Digging

STONE, CLAY & GLASS

Stained Glass Magazine  
Cement Industry News  
Rock Production  
Concrete Construction

INSTRUMENTS

Computer World  
Macweek  
Kodak  
Appliance Magazine  
Industry Week  
Vending Machine Times  
Printed Circuit Design  
Sensors  
Tubing and Piping Utilities  
Optical News

CHEMICALS

ChemWeek (2)  
Chemical Engineering  
Chemical Manufacturing  
American Chemical Association Publication  
Chemical Engineering News  
American Cancer Society Publications

ELECTRICAL, ELECTRONIC

Air Conditioning and Refrigeration News  
Microwave Journal  
Refrigeration and Microwaves

MISC. MANUFACTURING

Hazmat World  
Industrial Equipment News  
Signage Publications  
Snips  
Filtration News  
Pollution Equipment News  
Pollution Engineering  
Waterworks  
Giftware News

APPAREL

Apparel Industry  
Footwear News

RUBBER & PLASTICS

Modern Plastics  
Plastic Design  
Plastics Industry

TRANSPORTATION EQUIPMENT

Maryland Motor Truck

NTEA (National Truck Equipment Association)

ENVIRONMENTAL PUBLICATIONS

Environmental Reporter (2)

Occupational Health and Safety Report (2)

Community Right-to-Know Magazine

EPA Journal

Environment & Ocean Compliance

Industrial Hygiene

Environmental Protection

Inside the EPA

DER pamphlets

Clean Air News

Clean Monthly Newsletter

Safety

OTHER PUBLICATIONS

The Wall Street Journal (2)

Keller's News Report (2)

Human Resource and Personnel

Thompson Reports

Business Legal Report

Licensing

Business Inc.



**APPENDIX H:**

**LIST OF ABBREVIATIONS**

## ABBREVIATIONS

<u>Abbreviation</u>	<u>Full name</u>
D&B	Dun and Bradstreet Information Systems
EPA	The United States Environmental Protection Agency
EPCRA	The Emergency Planning and Community Right-to-Know Act
FINDS	Facility Index System
Form R	Toxic Chemical Release Inventory Form
GAO	United States General Accounting Office
Ha	Alternate or research hypothesis of a significant difference between the two groups
Ho	Null Hypothesis of no difference between the two groups
SARA	Superfund Ammendments and Reauthorization Act of 1986
SIC	Standard Industrial Classification Code
TRI	Toxic Release Inventory Data