Waste Reduction Works for Business and Iowa

THE Closed Loop

Summer 1998

# Form R Due July 1; Metal Accounting Questions Answered for Toxic Release Inventory Reporting

Form R for Toxic Release Inventory (TRI) reporting must be submitted to the Department of Natural Resources (DNR) and the Environmental Protection Agency (EPA) by July 1. Some confusion has been identified as to whether metal working manufacturers must include toxic chemicals contained in metals in the facility's threshold determinations.

No special exemption exists for metal working. (See box to determine TRI applicability.) Metal raw materials that meet the criteria of the article exemption during normal processing and otherwise use, are exempt from threshold determinations, release and other waste management estimates required by TRI.

An ***article*** is defined as a manufactured item that:

- Is formed to a specific shape or design during manufacture,
- Has end use functions dependent (in whole or in part) upon its shape or design during end use, ***AND***
- Does not release a toxic chemical under normal conditions of processing or otherwise use of the item at the facility.

If an item, such as metal, retains its initial thickness or diameter, in whole or in part, as a result of normal processing or otherwise use, then it meets the first two parts of the definition. For example, sheet metal stamped to form a bracket, copper wire bent and wound around a motor part, or metal cylinders machined to specific shape but retaining a portion of its original shape, meet the exemption. The sheet metal and copper wire change shape, however, the original thickness stays the same as when it was manufactured.

If small amounts of TRI reportable metal fines and/or fumes are generated and the entire amount from like operations contains less than 0.5 pounds per year of a reportable chemical, a facility can interpret that as no release.

If the listed toxic chemical released exceeds 0.5 pounds per year but is completely recycled/reused, on or off site, then the item can still maintain its

**See Metal Accounting, page 2**

**Facilities are subject to TRI Reporting IF ALL of the following apply:**

- Manufacturing Standard Industrial Classification codes of 20-39.
- Employ the equivalent of 10 full-time employees.
- Manufacture or process 25,000 pounds of a toxic chemical or otherwise use 10,000 pounds.

**Reviewing specific definitions may help make this determination.**

**A full time employee** is defined as 2000 work hours per year. The number of employees is calculated by the total number of hours worked by all employees for the facility during the calendar year divided by 2000. All employees include contract employees, sales, and support staff.

**Manufacture** means produce, prepare, compound, or import a listed toxic chemical. Produce includes toxic chemicals formed as by-products or impurities.

**Process** means preparation of a listed toxic chemical, after its manufacture, for distribution in commerce. Process includes operations in which the toxic chemical remains in the same physical state or chemical form as that received by your facility and operations that produce a physical state or chemical change.

**Otherwise use** is a term that encompasses any activity involving the listed toxic chemical that does not fall under manufacture or process. Otherwise use includes operations where the listed toxic chemical is not intentionally incorporated into a product distributed in commerce.

**A toxic chemical** is one of the 640 listed toxic chemicals and chemical classes in the Consolidated Chemical List in the column headed Section 313. This document is available from the IWRC upon request.

**A release** is any spilling, leaking, pumping, pouring, emitting, emptying, discharge, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any toxic chemicals.

*By Lisa Hurban, Waste Reduction Specialist*

Iowa Waste Reduction Center,
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**Metal Accounting, cont.**

status as an article. For example, grinding dust, metal shavings, or filings collected and recycled as scrap metal would not be considered a release when making an article exemption determination.

When reviewing operations to determine if this exemption applies, remember that the article exemption does not apply to manufacturing operations (See page 1 for definition.)

> It is critical that all grindings, shavings, metal dust and fumes are totaled and included when determining if the article exemption applies.

Some processes, such as heat treating or extruding, change the designed qualities of the manufactured piece. If the raw material's shape or form is changed, it does not meet the exemption. For example, when extruding copper bars into wire, the end use of the item is no longer dependent on the shape of the bar but the thickness of the wire and therefore must be considered in determining reporting applicability.

## Following are some examples of how to determine applicability.

### Example 1

An automotive engine mount and parts manufacturer processes 2 million pounds of galvanized sheet carbon steel and 3 million pounds of hot or cold rolled carbon steel pipe. The sheet metal is cut, punched, and formed to the shape of the desired engine mount or engine part. The sheet metal and tubing is selected based on the physical strengths and properties of the metal. Pieces of the carbon steel pipe are turned to the desired shapes and welded to previously-formed sheet metal parts. At this point, both the steel pipe and sheet, have taken the desired form of the engine part. All scrap metal is recycled. Friction weld is used to join the parts. No other metal is used to form the weld. The only uncontrolled release is the residual oil that is combusted during the welding process and less than 0.5 pounds of any toxic chemical is released per year. Does this process meet the definition of an article?

Technically, if no releases occur, the metal, both sheet and pipe, are articles and the toxic chemicals contained in the metal do not need to be included in TRI reporting. However, the EPA does not believe this is possible. They will observe floors and dumpsters for metal shavings and grinding wastes that are swept and discarded with debris. If traditional welding is used, particulate exhausted needs to be estimated to determine if the release exceeds 0.5 pounds of a TRI reportable chemical.

### Example 2

Is bar stock that is used to make parts an article and exempt from TRI reporting?

The bar stock is an article if its basic dimensional characteristics are maintained, in whole or in part, in the finished product and if processing the bar stock does not result in releases. If the end product is different in diameter or thickness, the bar stock would not be an article.

### Example 3

Does the exemption apply to flat rolled sheet metals if they are used in operations that produce scrap but no release?

If the scrap metal pieces are recognizable as the original piece, the article exemption does apply if:

a. The metal retains the sheet metal's thickness in whole or part and

b. the forming process released is less than 0.5 pounds per year of a TRI reportable chemical from all like items.

If a metal is processed in a manner that causes a release that is not recycled and exceeds 0.5 pounds, such as heating, grinding, and welding; the article exemption no longer applies and releases must be reported when chemicals in a sheet metal are processed in quantities greater than 25,000 pounds.

### Calculating Toxic Chemicals in a Metal

A company uses 3 million pounds of hot and cold rolled steel tubing. This tubing contains a range of 0.01-2.0 percent (by weight) chromium and 0.15 percent (by weight) lead. If this material is processed in such a manner that it does not meet the article exemption and must be included on the Form R, the amount of chromium and lead from this source would be calculated as follows:

A range of 0.01-2.0 percent is provided for the concentration of chromium. The midpoint can be assumed for calculations. (0.01+2.0)/2=1.005 percent
3,000,000 x 1.005/100 = 30,150 pounds chromium.

The value of .15 percent is provided for the concentration of lead
3,000,000 x .15/100 = 4,500 pounds lead.

The chromium, without any other source from the facility, exceeds the 25,000 pounds threshold for TRI reporting while the lead does not. If these materials meet the criteria established for the article exemption, these values would not be included on the TRI reporting form or in any other waste management estimates.

### August 31, ISO/SME Workshop

Dave Kirkpatrick, REM, will discuss the activities of the ISO TC207 International Committee on ISO 14000 and the Small and Medium Sized Enterprise (SME) Workshop. Mr. Kirkpatrick is the U.S. expert to the ISO TC207 on SME issues and has presented activities related to the U.S. and other countries, including Environmental Performance Evaluation and Eco-labeling. The briefing will last one hour, with time for questions and discussion following. Please RSVP to Marci Carter at IWRC by July 17.

Dave Kirkpatrick is a Registered Environmental Manager and president of Strategic Management Systems International, Inc. (SMSI). SMSI is a business performance and management systems consulting firm based in Minneapolis, MN.

# Governor Signs Iowa's Audit Law

On April 16, 1998, Governor Terry E. Branstad signed the Environmental Audit Privilege and Immunity Act. The bill, introduced into the legislature by the Environmental Protection Committee, provides environmental audit privilege and immunity for companies that conduct self-audits, creates an environmental audit or training program, and provides for penalties.

Privilege and immunity under this bill apply only to those individuals that notify the Department of Natural Resources (DNR) of a scheduled environmental audit. Once notification has been given to the DNR, the environmental audit must be completed within six months, unless the DNR grants an extension.

The audit bill defines "environmental audit" as a voluntary evaluation of an activity, facility or operation when it is regulated under state or federal environmental laws, rules, or permit conditions. The audit may be conducted by an owner or operator, an employee, or an independent contractor. It is designed to identify historical or current noncompliance with environmental laws, rules, ordinances or permit conditions, discover environmental contamination or hazards, remedy noncompliance or improve compliance with environmental laws, or improve an environmental management system.

A report prepared based on an environmental audit as described above is considered privileged information. The report should be titled "ENVIRONMENTAL AUDIT REPORT: PRIVILEGED DOCUMENT," but failure to do so does not imply a waiver of privilege. Privilege does not apply to criminal investigations or proceedings, materials required to be collected, retained, or reported by law (i.e. waste water monitoring results or emergency evacuation plans), or information obtained from a source not involved in the preparation of the environmental audit report.

Immunity is provided for those that immediately disclose environmental violations discovered as a result of the audit and make a good faith effort to correct them.

Immunity is not granted when the violation was intentional or if it resulted in substantial actual injury or imminent and substantial risk of injury to persons, property, or the environment. Immunity is also not provided if the owner or operator is a habitual violator or if there was a clear economic advantage gained as a result of the violation.

This bill established an environmental self auditor training program to be developed jointly by the Iowa Waste Reduction Center and the DNR. The program will be made available to small and large business, consulting engineers, regulatory personnel, and citizens through the community colleges. For more information call Marci Carter at (319) 273-8905.

*By Marci Carter, Waste Reduction Specialist*

# Aerospace Compliance Set for Sept. 1

The compliance date for Aerospace Manufacturing and Rework Facilities under the National Emission Standards for Hazardous Air Pollutants (NESHAP) is Sept. 1, 1998. This NESHAP deadline will impact only facilities that do any work involving the aerospace industry and are classified as Major sources under the 1990 Clean Air Act Amendments. This would include:

- ❒ Aircraft manufactures,
- ❒ Facilities that manufacture aircraft parts and
- ❒ Facilities that paint or depaint aircraft.

For more information on compliance call Dan Nickey at (319) 273-8905.

# Applications Available for the 1998 Governor's Waste Reduction Award

Applications are now being accepted for The 1998 Governor's Waste Reduction Award. The award honors Iowa businesses, industries, and organizations that have implemented a waste reduction or recycling program within the past three years.

Award categories include:

- Waste reduction by large manufacturers (200+ employees)
- Waste reduction by small manufacturers (<200 employees)
- Waste reduction by non-manufacturing industries or organizations
- Recycling projects by industries or organizations

The combined efforts of last year's four award-winning companies benefited the environment by diverting more than 45 tons of waste from the landfill, eliminating over 8,000 gallons of hazardous and non-hazardous chemicals, and reducing toxic air emissions by 45 tons. The companies themselves experienced a combined annual savings of nearly $1.5 million through avoided waste management and emission control costs.

The 1997 award winners included Lennox Industries of Marshalltown, Bowe Machine Company of Bettendorf, National Veterinary Services Laboratories/Center for Veterinary Biologies Laboratory of Ames, and John Deere Waterloo Works.

Application materials for the 1998 Governor's Waste Reduction Awards may be obtained from Patricia Kehoe, Department of Natural Resources, Waste Management Assistance Division, 515-281-8308, or the IWRC, 800-422-3109. Applications must be postmarked by August 3, 1998.

# Mercury Thermostats Target of New Recycling Program

Iowa is one of the nine states participating in the Thermostat Recycling Corporation (TRC) program that started in November 1997. The new program was started by the three largest thermostat manufacturers: Honeywell, General Electric and White-Rodgers.

The volunteer program encourages contractors and wholesalers to recycle mercury-switch thermostats (batteries, fluorescent light bulbs or other mercury-containing devices are not accepted by this program). Contractors can do this by putting the thermostats in a bin located at wholesaler outlets that are participating in the program. The bins are provided to the wholesalers by TRC for a $15 deposit. When the bin is full, the wholesaler ships the bin prepaid through United Postal Service (UPS) to the TRC recycling center where the switches are removed and sent to a mercury recycler.

The program has been designed so the contractors and wholesalers do virtually nothing but place the thermostats in a bin. There is no paperwork. Shipping instructions are included with the bin and the postage is prepaid.

Iowa and the other states were chosen for the program because they have adopted the Federal Universal Waste Rule, which removes regulatory barriers to the safe and efficient management of certain products, including thermostats.

"Most of Iowa is covered with bins. There are 32 wholesaler outlets located around the state in areas such as Des Moines, Waterloo, Mason City, Sioux City, Council Bluffs, Dubuque, Bettendorf and Cedar Rapids," Ric Erdheim, TRC acting director said.

To receive a recycling bin for your wholesale outlet, call Erdheim at 703-841-3200.

*by Donna Popp, Public Relations Assistant*

## Iowa Waste Reduction Center—

*Creating Tools for Small Business*

- Small Business Pollution Prevention Center
- Painting and Coating Compliance Enhancement
- Spray Technique Analysis and Research Program
- Iowa Air Emissions Assistance Program
- Iowa Waste Exchange
- Mobile Outreach for Pollution Prevention

**Articles in**
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**may be reprinted.**

As a courtesy, please contact the IWRC.
Kathleen Gordon, Editor (800) 422-3109

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1005 Technology Parkway
Cedar Falls, IA 50613-6951

# Iowa Waste Exchange


## Managed by the Iowa Waste Reduction Center / University of Northern Iowa

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712/792-9914,
FAX: 712/792-1751

C:
Patti Tornquist or Kathy Showalter,
North Iowa Area Community College,
515/422-4352,
FAX: 515/422-4129

D:
Jeff Beneke, Iowa Northland Regional Council of Governments,
319/235-0311,
FAX: 319/235-2891

E:
Michelle Mihalakis, Northeast Iowa Community College,
319/556-5110, ext. 327,
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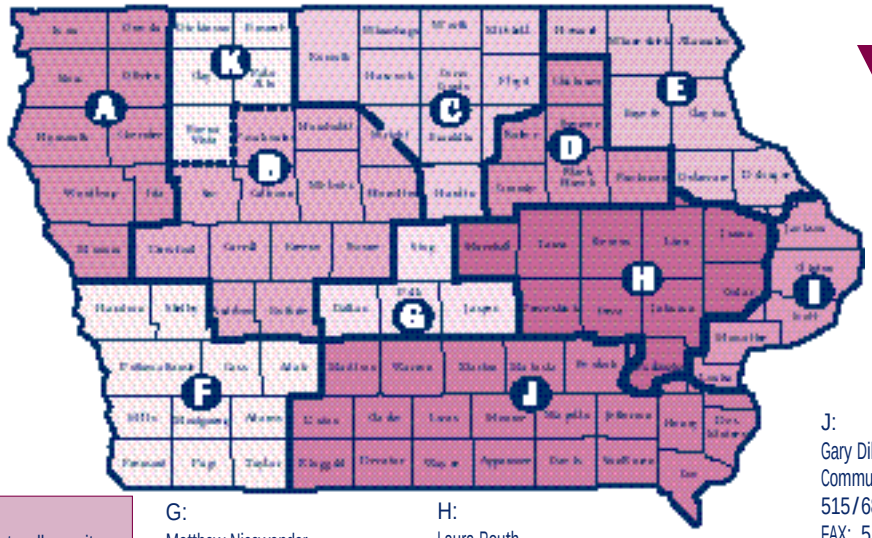


Want help finding markets for your wastes and by-products?

Contact your area representative for assistance.

K:
Mark Warren
NW Iowa Planning and Development Commission
712/262-7225
FAX: 712/262-7665

F:
Angi Hanson, Iowa Western Community College,
712/325-3310,
FAX: 712/325-3408

J:
Gary Dill, Indian Hills Community College,
515/683-5269,
FAX: 515/683-5263

**General Information:**
If you are not sure who to contact, call or write the Iowa Waste Exchange office:
Iowa Waste Reduction Center
1005 Technology Parkway
Cedar Falls, IA 50613-6951
800/422-3109 or 319/273-8905

G:
Matthew Nieswender
DMACC
Economic Development Center
515/964-6346,
FAX: 515/964-6206

H:
Laura Routh,
(Linn county only) and
Brenda Tjaden,
(all but Linn county)
Kirkwood Community College,
319/398-5665, 319/398-4904
FAX: 319/398-5432

I:
Michelle Javornik, Eastern Iowa Community College District,
319/336-3319,
FAX: 319/336-3350

Helping Iowa Business and Industry Reuse and Recycle

The Iowa Waste Exchange is a free and confidential service that actively promotes the reuse and recycling of Iowa's business and industry waste. This saves resources and landfill space and is economically beneficial to businesses and taxpayers. Since inception in its pilot phase in 1990, the exchange has saved businesses over $5.4 million in disposal costs by transferring more than 263,530 tons of material to other companies and non-profit organizations for reuse and recycling. A total of 2,388 generators have listed more than 6,090 materials with the exchange.

The exchange deals with a wide variety of industrial wastes. Common matches include pallets, paper, and textile scraps. However, many unique and hard to place items have also been matched. Recent matches include 1,540 pounds of muriatic acid, 12.48 million pounds of juice, 5,300 pounds of plastic sprockets, and 54,600 pounds of uniforms.

# Iowa Waste Exchange

## How to use the Iowa Waste Exchange

The materials listed on this insert are available for reuse or recycling. By using the Iowa Waste Exchange, you may be able to save your company money. At the same time, you can help reduce waste and save natural resources. Listing is free-of-charge. Solid waste fees fund the service.

For more information about listed materials, see the column marked "Contact" and call the representative(s) listed on the front page of this insert. For a listing of materials listed in the last quarter, contact Heidi Bunger at the Iowa Waste Reduction Center at 319/273-8905. A searchable list of materials available through the Iowa Waste Exchange can be found at www.recycleiowa.org/tech/bawss.html

| Item | Description / Amount | ID # | Contact |
|---|---|---|---|
| **Chemicals** | | | |
| Percol 728 | One-time, 36 55-pound bags. | A-040224 | D - Jeff |
| Miscellaneous lab chemicals | On-going, amounts vary. | A-130034 | K - Mark |
| **Fiberglass** | | | |
| Cloth with fiberglass resin | On-going, 100 pounds per day. | A-001353 | A - Bob |
| Fiberglass | On-going, 5 tons per month, variety of thicknesses and lengths. | A-150455 | E - Michelle M. |
| Fiberglass | On-going, 200 pounds per week. | A-070392 | G - Matt |
| Fiberglass screen scrap | On-going, 2 tons per month. | A-080206 | J - Gary |
| **Food** | | | |
| Kaolinite | One-time, 80 tons. | A-150578 | E - Michelle M. |
| Syrup-laden wastewater | On-going, 150 gallons per day. | A-110269 | H - Laura |
| **Metals & Metal Sludges** | | | |
| Nails | On-going, 200-300 semi-loads of wood chips embedded with $20-30,000 worth of nails. | A-160358 | B - Fred |
| Metal pails | On-going, 50 gallons per month. 2.5, 5 gallon sizes. | A-090270 | F - Angi |
| Steel oxidized powder | On-going, 3 drums per day. | A-050440 | H - Brenda |
| Molecular sieve | On-going, 10 tons per year. | A-060248 | I - Michelle J. |
| **Minerals** | | | |
| Arc furnace dust | On-going, 40,000 pounds per month. | A-060245 | I - Michelle J. |
| **Other** | | | |
| Computer monitors | On-going, 20-30 monitors. | A-110191 | H - Laura |
| Film inspection equipment | One-time, 300 film racks (A-030499), film washer (A-030501), 2 inspection machines (A-030500). | Ask Patti | C - Patti |
| **Paints & Solvents** | | | |
| Paints | On-going, 5-gallon buckets, various types and colors. Over 300 gallons available. | A-090284 | F - Angi |
| Latex paint | On-going, 250 gallons. | A-100116 | G - Matt |

Helping Iowa Business and Industry Reuse and Recycle

| Item | Description / Amount | ID # | Contact |
|---|---|---|---|
| **Paper** | | | |
| Boxes | On-going, hundreds per week. | A-030444 | C - Patti |
| Sanding belts | On-going, 8 80-grit belts per week. | A-030523 | C - Patti |
| Fibrous casings | On-going, 10,000 pounds per week. | A-090258 | F - Angi |
| Cardboard cores | On-going, 5 tons per week. 3/4" x 5" sizes. | A-080192 | J - Gary |
| Silicon-coated paper sheets | On-going, large volume, 12" x 20". | A-080193 | J - Gary |
| Poly-lined seed bags | On-going, 2,000 bags per year. | A-050438 | H - Brenda |
| **Plastics & Rubber** | | | |
| PVC canopy scrap | On-going, 50 pounds per month, trimmings. | A-000235 | A - Bob |
| Plastic laminate | On-going, 5 tons per month. | A-020037 | A - Bob |
| Polystyrene stacking blocks | On-going, 5000 pounds per year. | A-020040 | A - Bob |
| Composite plastic | On-going, 2 tons per day. | A-001651 | C - Patti |
| Rubber gasket sheets | On-going, 1-2 gaylords per month. | A-040255 | D - Jeff |
| Polystyrene trays | One-time, 900 pounds. | A-040265 | D - Jeff |
| Plastics and rubber NBR and BR | On-going, 40 tons per year, with 9.2% nylon. | A-150567 | E - Michelle M. |
| LDPE agriculture plastic | On-going, 20 tons per year. | A-150577 | E - Michelle M. |
| Raw scrap blanket rubber | On-going, 30 tons per year. | A-090280 | F - Angi |
| HDPE shavings | On-going, 1,500 pounds per month. | A-001496 | H - Brenda |
| Polypropylene appliance handles | On-going, 200 per day. | A-050432 | H - Brenda |
| Cardboard totes | On-going, 4,500 totes per year. 1,100-1,300 pound capacity. | A-110229 | H - Laura |
| Polystyrene cups | On-going, 30 tons per year. | A-060094 | I - Michelle J. |
| **Textiles & Leather** | | | |
| 100% cotton denim | On-going, 13,203 pounds per year. | A-010002 | A - Bob |
| Canvas roll ends | On-going, 5,000 per year, 60" of all colors. | A-080197 | J - Gary |
| Venetian blind fabric | On-going, 13 tons per year. All weights and sizes. | A-080204 | J - Gary |
| **Wood** | | | |
| Oak and pine wood chips | On-going, 20 tons per day. | A-160359 | B - Fred |
| Pine wood locks | One-time, 2,000 cubic yards, 6"x4"x3" blocks, coated with creosote. | A-090277 | F - Angi |
| Pine and oak slabs | On-going, 1000 pieces. | A-040313 | D - Jeff |
| Ponderosa pine | On-going,10 55-gallon drums per day. | A-110176 | H - Brenda |
| Ground wood waste | On-going, Large volume. | A-080199 | J - Gary |
| Wood pallets | On-going, 25 pallets per month. | A-080215 | J - Gary |
| Soft wood dunnage | On-going, 130 tons per year. | A-080214 | J - Gary |
| Wood pallets | On-going, 50 pallets per month. | A-150595 | E - Michelle M. |
| Wood crates | On-going, 192 crates per week. | A-070394 | G - Matt |
| Pressed wood pallets | On-going, 20 pallets per week. | A-090299 | F - Angi |
| Hardwood wood waste | On-going, large volume. | A-060274 | I - Michelle J. |

Iowa Waste Exchange

*By Angi Hanson, IWE Representative*

# Matching Pallets in Southwest Iowa

In September of 1996, I conducted an on-site visit to Bond Equipment Corporation in Logan, Iowa. Bond is a manufacturer of conveyors, switches and specialty equipment used in meat processing.

As a result of the visit, it was concluded that Bond generates very little waste. However, I noticed that they use a lot of pallets. In fact, everything they shipped out was on a pallet and the pallets did not need to be a standard size. Through the Iowa Waste Exchange, they were matched up with two companies. Bond now gets their pallets for a small fee to free; this exchange is saving Bond around $7,000 a year. "That savings is just for doing nothing and getting hooked up with someone else's junk," said Jerry Pinter, General Manager of Bond.

Savings can be seen on the other end as well. Advanced Tool and Plastics Engineering, a plastic manufacturer in Glenwood, Iowa has a landfill and hauling cost savings of at least $300 a year. Traco, a window manufacturer in Red Oak, Iowa will save over $600 a year in fees for giving away their used pallets.

# Market Teams with the Iowa Waste Exchange to Expand Markets and Divert Materials

In July 1997, Top-Notch Enterprises, a pallet rebuilder from Ackley, Iowa contacted me at the Iowa Waste Exchange office at North Iowa Area Community College in Mason City regarding recycling pallets. Top Notch has been building and recycling pallets in Hardin County for three years. Their business had increased; therefore, they wanted to expand their service territory to include Mason City. Several small pallet recyclers already serviced the Mason City area; however, they were selective in the pallets they would accept, leaving many manufacturers choosing to landfill instead of recycle.

I set up a "pallet tour" for Dave Kenninger, an owner of Top-Notch Enterprises. We visited five companies, and Dave explained the services Top-Notch could offer. Through this tour, Top-Notch began to pick up pallets on a weekly basis and helped two of the initial five contracts to divert an annual amount of 197.6 tons of pallets and wool waste from the landfill. Since then, I have referred three other manufacturers selling rebuilt pallets to two companies in my region.

The total volume of material diverted to Top-Notch is currently 241.2 tons annually. This represents a cost savings to North Iowa companies of $7,236.00. By working as a team with Top-Notch to build their business, I have been able to help seven businesses with waste reduction or purchased materials cost savings, and helped to develop a reliable, manufacturer friendly pallet recycler in Mason City and the surrounding area.

*By Patti Tornquist, IWE Representative*