

# Recycling and Reuse Technology Transfer Center

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**John Deere Engine Works- Environmental Services Department:  
Intern report for the RRTTC, Fall 1996**

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Student authors: M. Ripple, University of Northern Iowa

John Deere Engine Works:  
Environmental Services Department



Mark Ripple  
Internship/Field Experience  
2 Cr. Hrs  
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## Internship Summary

Working in the Environmental Services Department at John Deere Engine Works as an Intern for the past year has been a great learning experience. I have been involved in numerous projects that have related directly to both my major (Biology-Env. Emphasis) and minor (Chemistry).

While continuing my internship at John Deere, I am still learning many key policies dealing directly with the environment and John Deere Engine Works. These include many Federal and State regulatory requirements such as the OSHA Right-To-Know, EPA Tier II report, EPA SARA emissions report, Toxic Substances Control Act, and OSHA Standards on Hazardous Communication. OSHA Standards on Hazardous Communication (29 CFR 1910.1200) and EPA regulations of Title III of the Superfund Amendments and Re-authorization Act of 1986 (SARA - 40 CFR 370 and 372), along with Deere & Company policy, requires that all employees are advised about chemicals or other materials they use. These requirements also state that a Material Safety Data Sheet (MSDS) be supplied to the Emergency Planning Commission if they receive a request for information from anyone in the community.

Material Safety Data Sheets play a very important role in many of these regulatory requirements along with many daily functions of the Engine Works. Some of the regulatory requirements which depend on the accuracy of John Deere Engine Works (JDEW) MSDS files are the Tier II report - Community Right to Know; Form R emissions; Toxic Substance Control Act (TSCA); and Clean Air Act (CAA) for air toxins. JDEW may be subject to regulatory fines of up to \$10,000 for not having a MSDS available and up to \$25,000 for not including the product on the Inventory Report Form. My main task as part of the Environmental Services Department was to continue auditing the stockroom chemical listing and update the MSDS files in preparation for a new MSDS computer management system known as CHEMTOX.

The CHEMTOX program is widely recognized as the ultimate source for information on hazardous and regulated chemicals. It is considered the most practical environmental management information system available. The CHEMTOX software includes a toxic and hazardous substance database, chemical inventory and process management, compliance reporting, MSDS authoring and management, employee record keeping, waste tracking, manifesting,

and label preparation capabilities. Each CHEMTOX System module can be used alone or integrate with other CHEMTOX modules. The CHEMTOX System that will be used at the Engine Works will include the CHEMTOX Data Base, MSDS Management software, Inventory Management/SARA 312 Tier II Reporting software, and SARA 313 Form R Reporting software.

The CHEMTOX database is an electronic library of more than 10,000 regulated chemical linked by formula, CAS #, DOT ID, EPA ID, RCRA ID, etc. Each chemical record in the CHEMTOX database is comprised of more than 250 data fields including information on physical properties, reactivity, exposure limits, regulatory summaries, personnel protection, toxicology, DOT and HM-181 information, radioisotopes, spill/disposal data, symptoms of exposure, and emergency response instructions.

Along with the MSDS database, JDEW will also be purchasing an MSDS management software system from CHEMTOX. This software allows you to immediately take control of a chemicals path the instant it enters the facility. This system can be used for collecting, organizing, and managing MSDS information. This information is then used to fulfill two primary compliance reporting function,

Provide hazardous communication information for worker right-to-know requirements and provide data on the chemicals in inventory for regulatory reporting purposes.

MSDS management allows the ability to perform purchasing reviews, develop a cross reference of where material is stored and used and removed records. The system also allows the user to group MSDS by hazard codes to streamline and simplify training as well as supply material exposure reports to HR. MSDS Management is the most comprehensive software tool available for managing chemical hazards in the work place.

While I continued work on preparing for the new CHEMTOX program, I also was in charge of editing the Department Chemical List. The Department Chemical List is a detailed list of products used at the Engine Works as related to the department they are used in. This list includes the Department the product is used in, the machine number, the stock room code number, the disposal method, waste code, and quantity of the product. This list serves as a very important reference for many of the employees of the engine works when dealing with questions about where the product is used or how to dispose of excess material.

While working on this project, one of the big problems I discovered is that it is next to impossible to control the actions of other people. When dealing with any chemical product or item that may constitute a threat to an employees health or safety, employees are suppose to buy chemicals items through the stockroom and notify Environmental Services of what is coming on site. The process of ordering item through the stockroom can often take a few days. Employees sometimes find it easier to make a trip to a hardware store to buy the items they need. This presents a major problem for Environmental Services with various chemicals sneaking into the building. Often we find items in the building that are not approved and do not have the required MSDS on file. When this happens, we hold the item until an MSDS has arrived and the item has been approved for use.

On March 19 and 20, I attended a two day Diesel Engine Basics Training class. This class was part of the Continuous Quality Improvement Program with an aim at improving John Deere employees knowledge and understanding of John Deere engines and the production processes. This class began with a general engine overview and an explanation of the different systems of the engine.

After leaning the basics of the engine, we took apart an 8.1 Liter Diesel engine to gain hands-on experience. We were given instructions on how the engine functions and the different parts of the engine, and then reassembled the engine. During the class, we learned many of the different applications of John Deere Diesel Engines, and how the employees of John Deere are continuously working to improve their product to stay ahead of the competition. At the end of the class we were given a complete tour of the Engine Works to expose us to the different aspects of the production process. Overall, I found this to be a very interesting and worth while class. I am more confident of my understanding of John Deere Engines and the production process.

While working at the Engine Works I have been exposed to many different computer software programs. I have become very familiar with Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Office Mail, and Netscape through daily use. I have also become accustomed to the John Deere network system linking the different factories together. I believe that being exposed to these different computer programs will be very beneficial when it comes to marketing my skills while looking for a job.



During my Internship at John Deere Engine Works I have gained vast amounts of knowledge and experience in a wide range of areas. I have become more familiar with how a large company functions daily on the business level and how each individual department plays a key role in the overall operation. Working for a large company I have been able to experience first hand the manufacturing of a product and how all the employees must be working together to make the process efficient and profitable.