

# ***Chemical Management Services: A Strategic Alliance to Optimize the Enterprise***

## ***Workshop Overview***

Hyatt Regency O'Hare – Chicago, Illinois  
June 7, 2001

### ***Summary***

The workshop brought together representatives from a variety of organizations to hear presentations and engage in discussions about the chemical management services (CMS) model and, more broadly, the CMS industry and its trends. A total of 56 people from 34 different organizations attended the workshop, making this the largest audience at a CSP workshop to date. CMS is a market-based approach to reduce chemical use and costs through improved chemical management. It is a strategic, long-term relationship in which a customer contracts with a service provider to supply and manage the customer's chemicals and related services.

Speakers presented information about the CMS model, case studies of successful CMS programs, projections for the future of the CMS industry, and details on how to initiate a program.

### ***Companies and Organizations in Attendance***

Air Products and Chemicals, Ashland, Inc., Baker Petrolite, Bethlehem Steel, BetzDearborn, BF Goodrich, The Boeing Company, Castrol, Caterpillar, Chemical Safety Software, Defense Logistics Agency, Dopaco, Dow Corning Corporation, Ecolink, Fuchs Lubricants, Gage Products, General Chemical Corporation, General Motors, GKN Corporation, Haas Corporation, Henkel Chemical Management, Illinois State University, Illinois Waste Management and Research Center, Joyce Foundation, Lubrizol Corporation, Milacron, NTN USA Corporation, Ondeo Nalco Chemical Management and Service, Pratt & Whitney, Quaker Chemical Corporation, Raytheon Company, United Technologies Corporation, URS Corporation/Radian International, Waste Management, Inc.

### ***Workshop Sponsors***

The workshop was hosted by Chemical Strategies Partnership (CSP) with funding provided by the CMS Forum (a project of CSP). Members of the CMS Forum include the following companies:

**Founding Members** : Ashland, Inc., GW International, Haas Corporation, and URS Corporation/Radian

**Other Members** : Baker Petrolite, Ecolink, Rockwood Electronic Materials, and University of California Labs Administration

### ***Welcome and Introductory Remarks***

***Jill Kauffman Johnson, Executive Director, CSP***

Jill Kauffman Johnson opened the day by asking the participants what their motivation was for attending the workshop. The participants listed a variety of reasons, but they were most interested in learning more about

the CMS model, understanding the trends of the CMS industry, learning best practices from both customers and CMS providers that are already engaged in a CMS program, and networking with other participants.

Following the welcome and introductions, Jill gave a presentation about CSP whose mission is to reduce chemical use, waste, risks, and cost through the transformation of the chemical supply chain by redefining the way chemicals are used and sold. CSP believes that CMS is a valid model for achieving this mission. CSP promotes the CMS model through research, public education, and demonstration pilot programs.

CSP believes that aligning the financial incentives of the chemical user and supplier to reduce lifecycle chemical costs and environmental impacts is the lynchpin to success. So why isn't everyone using this great model of efficiency and environmental gain? The answer is well understood to all people with good ideas in big organizations. Change -- even positive change -- is difficult. CSP's objective is to work with the agents of change, like those in the room, to empower them to sell the concept internally and to help companies understand how their relationship with their chemical suppliers can be a partnership toward improving environmental performance and the bottom line.

### ***Case Studies: CMS Partnerships***

This portion of the workshop showcased case studies from two CMS partnerships with speakers representing both customer and CMS provider perspectives. Brief summaries of the presentations are provided below.

#### ***Lynne Mueller, Corporate Strategic Agreements Manager, Raytheon Company*** ***Leigh Hayes, Senior VP, URS Corporation/Radian International***

Raytheon's Chemical & Gas Management Program (CGMP) began in May 1999 and is a corporate-wide program with over 30 sites participating representing 80% of the chemical spend dollars. Raytheon was a pilot program of CSP, and after seeing good results at one of the facilities, Raytheon decided to roll out a CMS program corporate-wide. Raytheon contracts with CMS provider URS/Radian for the full scope of chemical management services. To date, the CGMP has resulted in improved service and quality, and a six-month payback on the first year of implementation costs -- savings have already begun to accrue. Raytheon's primary drivers for initiating a CMS program were cost cutting and the need to become one company (after several mergers) despite multiple cultures, procedures, and systems. They also had a strong desire to outsource their information management system and centralize and standardize their diverse and large supplier base (1000+ vendors).

Leigh Hayes, representing URS/Radian, jumped in to give perspective from the CMS provider. The CGMP includes six areas of services: procurement, inventory management, distribution, hazardous waste management, database management, and technical support. The centerpiece of the program is tcmIS®, a web based chemical lifecycle management and information system that enables the users to order and track chemicals. The CGMP is truly a partnership between Raytheon and URS/Radian. New goals are established every year based on the previous year's baseline, and ten metrics are tracked to measure performance.

For more information on the Raytheon CGMP, see the case study at <http://www.chemicalstrategies.org/Raytheon.htm>

### ***Q & A Highlights***

**Q - Can you estimate how much time Raytheon's management puts into the program?**

A - Raytheon established regional, cross-functional teams that were responsible for the programs. The implementation phase required 100% of the time of team members, but now that we are well into

maintenance, team members only spend 1/10 or 1/20 of their time on the program. However, level of involvement can change depending on need or focus.

**Q - What have you done to achieve reductions in toxics and overall hazardous chemical usage?**

A - From the start, the CGMP has focused on toxics. We have developed an information mining application that identifies pre-approved chemicals and specific EH&S attributes (e.g., VOCs, carcinogens). It allows chemicals to be selected on the basis of environmental preference, if desired. One piece of the CGMP that Raytheon is focusing on now is reducing our ecological footprint.

**Q - Regarding job loss--how do you re-designate these employees?**

A - Ultimately, Radian [URS] hired several Raytheon personnel while others were rededicated to other more strategic areas.

**Mark Opachak, Program Manager for Chemicals Management, General Motors**  
**Thad Fortin, CEO, Haas Corporation**

General Motors was one of the first companies to implement CMS and currently 98% of GM plants in North America have implemented a CMS program. Chemical Management is the cornerstone of the environmental strategy at General Motors, and the cornerstone of chemical management is process optimization. GM plants are staffed with 2-15 personnel (per site) from their CMS providers and the CMS providers are responsible for major process chemicals and the entire chemical system. It is this close involvement and responsibility that allows the CMS provider to optimize the manufacturing processes and reduce chemical use. GM's fundamental theory behind its programs is that "they [CMS providers] are making automobiles with us." Allowing a CMS provider to control the chemical system means that GM plant personnel are now able to focus on the core business of building automobiles.

Thad Fortin was on hand to represent Haas Corporation, one of GM's CMS providers. In its relationships with customers, Haas uses a fixed pricing program that rewards Haas for reducing chemical usage and finding other cost savings. To start, Haas focuses on the back end of the process--waste, and moves upstream from there, finding ways to optimize the lifecycle along the way. Customers expect a payback in the first year, so work needs to be done quickly and cheaply. In working with several of GM's manufacturing plants, the CMS programs have resulted in significant usage reductions across several types of manufacturing.

**Q & A Highlights**

**Q - Were there differences in environmental reporting from plant to plant?**

A - We brought all of the chemical managers in and gave them a standard format and they have all complied with that format.

**Q - What is the value from the information system?**

A - Before CMS, we didn't have a grip on information systems. Our initial estimates were low, and costs of \$1 million grew to \$3-4 million. The information system identified what our plants were using, where it was being used, the basic process, consumption amounts, VOCs, etc. Ultimately, it reduced the environmental function and added value to the process by serving as the gatekeeper for screening out material, summarizing billing, tracking usage, etc.

**Case Study: CMS in Action**

### **Bill Michael, Research Engineer, Caterpillar**

Bill Michael presented case studies from three different manufacturing plants at Caterpillar (CAT): Mossville, IL; Sumter, SC; and Tech Center (Peoria, IL). Each business unit is autonomous at CAT, and therefore each plant decides whether or not to implement a CMS program. The Mossville plant is a large facility that manufactures diesel engines. Mossville was losing expertise to retirement and using hourly personnel for chemical management, and so decided to pursue a CMS program to alleviate these problems. Castrol is the CMS provider at Mossville, and they provide management of the purchasing and inventory of all water-based fluids, chemical testing, and 20+ staff. The CMS program has resulted in several benefits including improved tool life, maintenance, and health and safety issues.

The Sumter plant is a much smaller facility that was opened in 1998 and designed from the beginning as a 100% recycling, no landfill facility. This facility has no drains, nearly 100% water reuse, \$500,000 savings in the first year, and 365 tons of waste "saved" from landfill. Quaker Chemical is the CMS provider and is responsible for receiving, maintaining, and disposing of the chemicals--CAT owns none of them. What was found at Sumter is that CMS can't/won't do everything and each plant has to design the scope of what it can do, then place a lot of trust in the CMS program and provider.

In the case of the Technical Center, a research facility, CAT's research engineers implemented the principals of a CMS program. Initiated in December 2000, CAT assumed CMS duties from their maintenance contractor. Through May of 2001, the Tech Center has seen a 73% decrease in gallons of concentrate used and an 86% reduction in disposal resulting in significant cost savings. Some of the primary barriers to the program have been operator habits and communication. To overcome these kinds of barriers, it is important to build a good team consisting of operators, technicians, and engineers.

### **Q & A Highlights**

#### **Q - How long is the bidding process?**

A - The selection process is 2-4 months, then once the CMS provider is selected, putting the contract in place takes a bit more time. The total process for developing a CMS program is close to a year.

### **Highlights from the Roundtable Discussion**

#### **Moderated by Jeff Rosenblum, Program Associate, CSP**

This portion of the workshop featured a question and answer discussion involving all the participants of the workshop.

#### **Q - CMS is a new way of doing business. What are some strategies for working with a union?**

##### **How do you make trade-offs and compromises?**

A - Get with the human resources union representatives at the site and explain the program to them.

A - In the auto sector, the CMS providers worked on the floor with the union. Where they had made the effort to include the union, they had more control over chemicals. Get the union in on the ground floor.

A - Get a union representative involved in the chemical management negotiations and in the selection process. This person will see the advantages of CMS and will communicate this back through the union hierarchy. Once there is trust, union employees will give up job functions because they will see it is in their interest to do so.

#### **Q - How do you establish metrics for measuring performance of your program?**

A - It is possible to have a good CMS program that is not based on price per unit--a chemical pass-through option is possible. You need to determine what each stakeholder wants as an indicator. Even with pass-through you can still measure attainment.

**Q - What types of mechanisms can be used to convince upper management to initiate a CMS program?**

A - Make the business case and use metrics to show it works. Overcoming resistance to change is the biggest factor beyond this.

A - Ask yourself if anyone would be willing to pay you to manage their chemicals. If you don't think you do it well enough to make a business out of it, then you should outsource. This is a litmus test to determine what is core and non-core.

***Trends and Challenges for the Future of CMS***

***Tom Bierma, MBA, Ph.D., Professor of Environmental Health, Illinois State University***

Tom Bierma has been conducting research on CMS for over six years. He spoke about the trends and challenges for the future of CMS. At the heart of matter are the barriers and the benefits to CMS; in other words, will it work and why should I do it? Beyond reduced chemical costs and usage, CMS programs result in higher quality, lower downtime, more chemical control and better EH&S performance. However there are many barriers that all point at three primary issues: understanding CMS, selling it internally, and trying it. For CMS suppliers there are several ways to overcome these barriers. The top five are to differentiate CMS from its inferior substitutes (i.e., integrated supply), pre-sell CMS, develop internal marketing materials, demonstrate total cost of ownership of chemicals, and develop low-risk pilot programs.

***Q & A Highlights***

**Q - Within our organizations, who is the biggest barrier?**

A - Users. They are at the floor level and feel trapped into CMS. They have issues with their job functions.

A - Engineering. They have egos and refuse to believe that someone else can do it better.

A - EH&S is the least likely to present a barrier.

***Getting Started with CMS: What to do on Monday Morning***

***John Claussen, CMS Forum Director, CSP***

Chemical management sounds good, but is CMS right for my company? The CSP approach to initiating a CMS program has four phases: planning, baselining chemical costs, developing the scope of your program, and engaging a CMS provider. Baseline cost data is the foundation of a CMS program. You cannot determine what is best for your facility until you understand how much your facility spends managing chemicals, how the chemical process functions, and where your inefficiencies are. From this chemical baseline data, you can identify the primary cost drivers at your facility and ultimately design the scope of your CMS program.

***Building CMS as a Best Practice***

***Tom Votta, Deputy Director, CSP***

To date, CSP has been effective in its efforts to work with customers and suppliers on promoting the CMS model. In 2000, CSP launched the CMS Forum, published articles, presented at multiple conferences, and launched the Silicon Valley Pilot Project, which included working with three Silicon Valley companies on initiating a CMS program. Looking to the future, CSP intends to work with additional stakeholders including government organizations, management consultants, trade associations, the financial community, and organizations with an international focus. Ultimately, CSP hopes to accelerate the adoption of CMS in currently penetrated industries, introduce CMS to new industries, continue to develop tools that will encourage proliferation of the CMS model, test the viability of CMS certification, and expand the membership base of the CMS Forum.

***For More Information...***

To learn more about the CMS Forum and how to become a member, check out our website at <http://www.cmsforum.org>, or contact John Claussen at 415-421-3405 or [john@chemicalstrategies.org](mailto:john@chemicalstrategies.org).

To learn more about the Chemical Strategies Partnership, go to <http://www.chemicalstrategies.org>, or contact Darcy Whaley at 415-421-3405 or [dwhaley@chemicalstrategies.org](mailto:dwhaley@chemicalstrategies.org).