



Chemistry Industry Association of Canada Association canadienne de l'industrie de la chimie



RESPONSIBLE CARE®

VERIFICATION REPORT

MEGlobal Canada Inc.

October 23-31, 2013

Disclaimer

This report has been produced by a team, convened by the Chemistry Industry Association of Canada (CIAC) to provide advice to the above company and assist it in meeting its Responsible Care commitments as a member of the Association. The material in it reflects the team's best judgment in light of the information available to it at the time of preparation. It is the responsibility of the CIAC member company which is the subject of this report to interpret and act on the findings and recommendations in this guidance document as it sees fit. Any use which a third party makes of this document, or any reliance on the document or decisions made based upon it, are the responsibility of such third parties. Although CIAC members are expected to share the results of this guidance document with interested parties, the association, its member companies, their employees, consultants and other participants involved in preparing the document accept no responsibility whatsoever for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

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EXECUTIVE SUMMARY

This report documents the observations and conclusions of the independent verification team tasked with conducting a Responsible Care Verification of MEGlobal Canada Inc. The verification was undertaken on October 23-25, 2013 and included team visits to the company's Prentiss and Fort Saskatchewan, Alberta Petrochemical facilities. With Dow Chemical Canada undergoing a Responsible Care verification during the first week of November, 2013, including a visit to the same Fort Saskatchewan location and the companies having integrated management systems in the areas of Emergency Response/communication and Community Outreach, joint coverage of these subject areas at Fort Saskatchewan was provided by the Dow verification team. The Dow team's conclusions applicable to MEGlobal in these areas are included in this report. The verification team also conducted interviews with external stakeholders. This was the third Responsible Care verification completed for MEGlobal Canada. The last verification was carried out from November 29 to December 2nd, 2010.

While considering all aspects of the Responsible Care Commitments during this verification, the team placed an emphasis on conducting an in-depth examination of company aspects related to:

- Process Safety Improvements
- Contractor Safety Management
- Sustainability Goals
- Promotion of Responsible Care by name
- Community outreach and communications

As a result of the examination conducted, the verification team is of the opinion that the Responsible Care Ethic and Principles for Sustainability are guiding company decisions and actions, and that a self-healing management system is in place to drive continual improvement. The team believes that the company is capable of responding to the Finding Requiring Action identified during the verification - summarized below and discussed in detail in the report. The verification is complete and no further involvement is required by the verification team.

Signed: 
Alec Robertson
Verification Team Leader

Date: December 9th, 2013

For more information on this or a previous Responsible Care Verification Report, please contact your local company site or the company's overall Responsible Care coordinator:

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Summary of Verification Team Observations

Findings Requiring Action

1. That the Prentiss site support their sponsored Ellis Bird Farm in the development and implementation of a management system for responding to Prentiss plant site emergency scenarios by which they could be potentially impacted. Specific aspects to be considered include:

- Emergency notification systems and processes from plant to Bird Farm and Bird Farm to employees and others on site during an emergency.
- Identification of Shelter in Place locations.
- Educating employees and visitors about how they will be notified and how they are to respond.
- Periodic drills with debriefs to ensure the ongoing effectiveness of the notification and response processes.

Works in Progress

1. Continue to pursue through to a successful conclusion with Alberta Environment, directly and/or through CIAC's Western Leadership Group member companies with operations in Alberta, the need for improved auditing processes for environmental testing laboratories on their approved list

2. Continue to pursue through to a successful conclusion with other CIAC member companies to have improved safety management systems in place for short line railways with the objective of reducing derailment frequencies and consequences.

3. MEGlobal is encouraged to continue its current focus on reducing injury rates for contract employees to levels achieved by company personnel.

4. Finalize and implement plans to:

- Move the company to the highest "Excellent" level of process safety vs. CIAC's November 2013 assessment tool.
- Have an internal PSM audit process to augment the current 3 year external audit program.

5. Complete, in the company's crisis management system, the formal documentation of the process for ensuring that various aspects of codes OP 38 through OP 46 which were identified as gaps during the company's analysis of systems in place versus new code expectations.

6. The development of a process to mitigate the effects of Critical Infrastructure/Business Continuity events (ref OP 49 through OP 55).

7. Develop and disseminate information about the sustainability and contribution to the betterment of society that the company raw materials, products and services provide (ref ST 109).

8. Complete the development and implementation of formal processes to:

- Consistently ensure that other parties with whom the company does business are aware of and understand the expectations of Responsible Care and its ethic, "Principles of Sustainability, and the codes and to
- Establish application of the codes as a contractual obligation whenever practical.

Improvement Opportunities

1. At Fort Saskatchewan and Prentiss, establish a schedule to test the community emergency call out system on a regular basis, which not only checks the communications technology but also actively exercises the process for contacting potentially impacted individuals who did not respond to the call.
2. An opportunity for improvement in the promotion of Responsible Care® by name has been listed by the verification team by:
 - Having a documented management system for the promotion of Responsible Care® by name.
 - Broadening employees' awareness of the scope of Responsible Care and how Responsible Care principles and codes are applied elsewhere in the company.
3. An opportunity for improvement is for the CAP's at both the Prentiss and Fort Saskatchewan locations to have a follow up process in place for community related items from Responsible Care verification reports to ensure that action plans to address these are understood, accepted and effectively implemented.
4. There is an opportunity for improvement to assess MEGlobal's process for proactively engaging and dialoging with local elected and appointed officials verses the expectations of Accountability Codes AC 138 through AC 140.

Successful Practices

1. The team considers the initiative taken by MEGlobal to audit the outside lab performing fish toxicity testing of the Prentiss site's effluent, and follow up with Alberta Environment to prevent similar testing deficiencies from occurring at this and other Alberta Government effluent testing labs, warrants recognition as a successful practice.
2. The team concluded that the comprehensive and effective processes in place for the upgrading and ongoing maintenance of physical assets warrant recognition as a successful practice.
3. The team considers MEGlobal's comprehensive Health and Safety Program as a successful practice as evidenced by their excellent performance over the past five years.
4. The inclusion of winter storm scenarios in emergency exercises.
5. The team concluded that the company's focus on and commitment towards improving the operational efficiency of process units, combined with the implementation of various projects to reduce site emissions, which have resulted in a significant reduction in MEGlobal's environmental footprint, warrants recognition as a successful practice.
6. The team concluded that MEGlobal's non product use management system deserves recognition as a successful practice

1. Introduction

1.1 About Responsible Care Verification

As a member of the Chemistry Industry Association of Canada (CIAC), the most senior executive responsible for MEGlobal's operations in Canada attests annually to CIAC and its peers that the company's operations conform to the expectations contained in the Responsible Care Commitments and are guided by *Responsible Care Ethic and Principles for Sustainability*.

As an element of this commitment to Responsible Care, MEGlobal must, every three years, participate in an external verification intended to:

The Responsible Care® Ethic and Principles for Sustainability

We are committed to do the right thing, and be seen to do the right thing.

We dedicate ourselves, our technology and our business practices to sustainability - the betterment of society, the environment and the economy. The principles of Responsible Care® are key to our business success, and compel us to:

- work for the improvement of people's lives and the environment, while striving to do no harm;
- be accountable and responsive to the public, especially our local communities, who have the right to understand the risks and benefits of what we do;
- take preventative action to protect health and the environment;
- innovate for safer products and processes that conserve resources and provide enhanced value;
- engage with our business partners to ensure the stewardship and security of our products, services and raw materials throughout their life-cycles;
- understand and meet expectations for social responsibility;
- work with all stakeholders for public policy and standards that enhance sustainability, act to advance legal requirements and meet or exceed their letter and spirit;
- promote awareness of Responsible Care, and inspire others to commit to these principles.

1. Provide the Executive Contact with an external perspective when assessing if the company is indeed meeting the intent of the Responsible Care Commitments, along with advice on areas that may require attention;
2. Identify opportunities for assisting the company when benchmarking its own practices and performance against those of its peers, thus supporting continual improvement;
3. Contribute to the credibility of Responsible Care amongst company personnel and stakeholders, as well as the stakeholders of the broader industry;
4. Identify successful company practices that can be promoted to peers in the CIAC membership; and
5. Support the identification of areas of common weakness so that collective tools and guidance can be developed to improve performance in those areas across the CIAC membership.

Verification is conducted according to a common protocol, developed by the association's members and others, including several critics of the chemical industry. The verification is conducted by a team consisting of:

- Knowledgeable industry experts with experience in Responsible Care;

- A representative of the public at large (usually with a public interest background and with experience in Responsible Care gained from serving on the CIAC's National Advisory Panel) and;
- One or more representatives of the local communities where the company's facilities are located.

Once completed, the Verification Report is made publicly available through the CIAC website (www.canadianchemistry.ca). ME Global is also expected to share the report with interested persons in its communities and other stakeholders as part of its ongoing dialogue processes.

Additional information on Responsible Care and / or the verification process can be found at the CIAC website www.canadianchemistry.ca, or by contacting the Responsible Care staff at CIAC at glaurin@canadianchemistry.ca or (613) 237-6215 extension 233.

1.2 About MEGlobal Canada Inc.

MEGlobal is a world leader in the manufacture and marketing of merchant monoethylene glycol (MEG) and diethylene glycol (DEG), collectively known as ethylene glycol (EG). Established in July 2004, the company is a joint venture between The Dow Chemical Company and Petrochemical Industries Company of Kuwait (PIC), and is headquartered in Dubai, U.A.E. MEGlobal produces about 1.0 million and markets 3.5 million metric tons of EG per year. With approximately 150 employees in Canada and 240 worldwide, the company serves customers around the world, and has two world scale EG production facilities in Prentiss and one in Fort Saskatchewan, Alberta, Canada.

The Company is part of joint venture, Alberta & Orient Glycol Company Limited ("A&O") which owns one of the aforementioned plants. The Company owns 75% of A&O, with the remaining ownership belonging to Waldorf Services B.V. Substantially all of the customer sales of the Company are with MEGlobal B.V. and Waldorf Services B.V.

MEGlobal Canada receives the following services from other MEGlobal companies: Corporate Leadership, Human Resources, Finance, Legal, Supply Chain, Commercial and Public Affairs. Also, as a joint venture, MEGlobal Canada continues to receive numerous services from Dow Chemical through various contractual agreements. These include services such as; maintenance, site security, emergency response, product storage and loading.

For more information on MEGlobal please see <http://www.meglobal.biz>

1.3 About This Verification

The verification of MEGlobal was conducted on October, 23, 24 and 25th, 2013 and included team visits to the company's production facilities in Prentiss and Fort Saskatchewan, Alberta. During the course of the verification, the team had the opportunity to interact with a wide range of company personnel, as well as stakeholders external to the company. With Dow Chemical Canada undergoing Responsible Care verification during the last week of October, 2013, including a visit to the same Fort Saskatchewan location and the companies having integrated or overlapping management systems in the areas of Emergency Response/communication and Community Outreach, joint coverage of these subject areas at Fort Saskatchewan was provided by the Dow verification team with the Public-At-Large member of the MEGlobal verification team participating. The Dow team's conclusions applicable to MEGlobal in these areas are included in this report. The verification team also conducted interviews with external stakeholders. Attachment 2 contains a list of those individuals interviewed and their affiliations.

This was the third verification exercise completed for MEGlobal. The last verification was completed between November 29 and December 2, 2010.

The verification team was comprised of the following individuals.

Name	Affiliation	Representing
Alec Robertson	C.I.A.C.	<i>Team Leader/ Industry verifier</i>
Keith Purves	C.I.A.C.	<i>Public-At-Large Verifier</i>
Ron Biel	Prentiss Area Resident	<i>Community Representative</i>
Jim Nelson	Fort Saskatchewan Area Resident	<i>Community Representative</i>

2. Team Observations Concerning the Responsible Care Commitments (Codes and benchmark and Collective Expectations)

During the verification of **MEGlobal** the verification team looked for evidence that the company was addressing the expectations documented in the Responsible Care Commitments (152 code elements plus 28 benchmark and collective expectations). While considering all aspects of the Responsible Care Commitments during the verification, the team placed an emphasis on conducting a more in-depth examination of certain company aspects identified by the company or the team. These were related to:

- **Process Safety Improvements**
- **Contractor Safety Management**
- **Sustainability Goals**
- **Promotion of Responsible Care by name**
- **Community outreach and communications**

In communicating its observations, the verification team will make repeated reference to the following categories of observations:

1. **Findings Requiring Action** document instances where the verification team observes specific company actions (or the absence of company actions) which are inconsistent with the detailed codes and benchmark and collective expectations contained in the Responsible Care Commitments. Where possible, the verification team will communicate, based on their experience and judgment, why it is inconsistent and how the observation relates back to a possible gap in the expected management system and / or the ethic and principles underpinning company actions. The team may also provide advice on how the situation might be responded to.
2. **Works in Progress** document instances where the verification team has observed the company self-initiating actions in response to identified gaps and deficiency arising from other internal or external audit and review activities, or where the company has self-initiated important improvement opportunities.
3. **Successful Practices** document instances where the team believes the company has taken actions that strongly support sustained excellence in performance, and which should be communicated throughout the CIAC membership.
4. **Improvement Opportunities** identify instances where the verification team has observed company actions and decision making as being largely consistent with the expectations detailed in the Responsible Care Commitments, but for which the team is of the opinion that the company could support further improvement by considering alternate or additional benchmarks when undertaking its planning and decision making.

The verification team's observations of how the company has addressed the Responsible Care Commitments are as follows:

2.1 Team Observations Concerning Operations Code

As described in section 3 of this report, the Operating Discipline Management System (ODMS) is the company's comprehensive corporate management system that integrates the management systems for Manufacturing, Quality, Environmental and Health and Safety. A comprehensive, structured, process for the identification, analysis and mitigation of risks associated with new projects and facility modifications, referred to as Layers of

Protection Analysis (LOPA), is detailed in ODMS sections 5.03 and 6.03. Other expectations of code elements OP1 through OP7 are also addressed in ODMS sections 5, 6 and 8.

2.1.1 Design and Construction of Facilities and Equipment

See 2.1 above

2.1.2 Operations Activities

Specific team comments for Operations Activities in addition to those detailed in section 2.1 above are:

Laboratory Practices

MEGlobal recently formalized and implemented an external lab assessment process requiring contracted labs to be assessed at two year intervals and more frequently when issues arise. The company subsequently assessed the Alberta Environment approved outside laboratory contracted by ME Global to perform fish toxicity testing of the Prentiss site's effluent per operating permit requirements. The assessment identified deficiencies in the handling and processing of effluent samples which resulted in inconsistent and inaccurate test results. MEGlobal followed up with the lab to correct the identified deficiencies and are following up with Alberta Environment regarding the need for improved governmental auditing processes for laboratories on their approved list.

Transportation and Physical Distribution

All but a small percentage of produced glycol is transported by rail directly from the Prentiss and Fort Saskatchewan sites to the company's sole distributor's Terminal facilities in the US by established routes or to their major customer's terminal in China by product transfer from rail to ship in the Vancouver area. The distributor's terminals are included in a very extensive auditing program administered by Dow on MEGlobal's behalf with an ME Global representative's participation. No distributors are used for product delivery to China with their customer's huge terminal there being included in the MEGlobal /Dow terminal audit program. The only underground product pipeline is for the transfer of product from the Prentiss site to MEGlobal's rail loading terminal in Blackfalds. The integrity of this pipeline is maintained via a formal inspection process.

Maintenance

The Company has a comprehensive mechanical integrity program in place with various continuous improvement initiatives having been implemented in recent years. Included in the program are critical services piping systems as well as mechanical equipment and control systems. A recent program upgrade is the implementation of a criticality assessment process for rotating equipment which has been a significant contributor to the continuously improving and excellent on stream time of process units at the Prentiss and Fort Saskatchewan sites.

Successful Practices:

The team considers the initiative taken by MEGlobal to audit the outside lab performing fish toxicity testing of the Prentiss site's effluent, and follow up with Alberta Environment to prevent similar testing deficiencies from occurring at this and other Alberta Government effluent testing labs, warrants recognition as a successful practice.

The team concluded that the comprehensive and effective processes in place for the upgrading and ongoing maintenance of physical assets warrant recognition as a successful practice.

Works in Progress:

Continue to pursue through to a successful conclusion with:

- Alberta Environment, directly and/or through CIAC's Western Leadership Group member companies with operations in Alberta, the need for improved auditing processes for environmental testing laboratories on their approved list.
- Other CIAC member companies to have improved safety management systems in place for short line railways with the objective of reducing derailment frequencies and consequences.
-

2.1.3 Safety and Security

a. Occupational Health & Safety

The company has a comprehensive program for company employees, the effectiveness of which is evidenced by their most recent recordable injury having occurred in 2009. MEGlobal, for the year 2012, and the fifth consecutive time, received a CIAC award for excellent safety performance over the past five years. Noteworthy initiatives in their program include:

- A job/project hazard analysis for each job step including a listing of hazards and controls for each.
- SHEL assessments for turnarounds to identify the most risky jobs being performed.
- Differing levels of scrutiny for various work procedures being implemented.
- A formal safety equipment inspection process which includes pre use checks for a variety of safety equipment and tools.
- A Visitor Winter Behavior 9 point checklist, completed by site visitors, signed by the visitor and their host. This agreement process has been in place for two years with a similar check list being used for contractors and employees that includes more points on clothing, use of cleats etc. and complements the pre task checklists.
- Implementation of a variety of projects to reduce noise, enhance fall protection systems and improve access to hard to reach operating devices.

Contractor Safety Management was identified as a focus area for this verification. While the company's contractor recordable injury rate is below the industry group average, MEGlobal have challenged itself to improve in this area. An example of their excellent focus relates to the two most recent contractor recordable injuries, which resulted from slips and falls on the same day in adverse weather conditions. The company subsequently conducted a detailed examination of various types of winter safety footwear, selecting the one with the best grip on ice for site use. Also implemented was a program for the use of cleats on winter footwear. The verification team provided contact information for a member company with "successful practices" in contractor safety for consideration by MEGlobal.

Successful Practice:

The team considers MEGlobal's comprehensive Health and Safety Program as a successful practice as evidenced by their excellent performance over the past five years.

Work in Progress:

MEGlobal is encouraged to continue its current focus on reducing injury rates for contract employees to levels achieved by company personnel.

b. Process Safety Management

As noted in section 2.1 above, the company has a comprehensive Process Safety Management program which also meets or exceeds all expectations of code elements OP28 through OP30

Gaps that existed vs. the highest “Excellent” level of CIAC’s High Inventory Site Assessment Tool (HISAT) at the time of the 2010 verification have been closed and a gap analysis vs. the November 2013 CIAC PSM Survey completed. Identified gaps in the areas of trainer certification and human factors have been entered into the company’s event and action tool for evaluation. Closing these gaps would enable ME Global to achieve the highest “Excellent” Level on PSM vs. this latest standard.

Works in Progress:

Finalize and implement plans to:

- Move the company to the highest “Excellent” level of process safety vs. CIAC’s November 2013 assessment tool.
- Have an internal PSM audit process to augment the current 3 year external audit program.

c. Emergency Management

There is a corporate crisis management plan in place, and both sites have established risk based emergency response plans for potential site and community impact emergencies. Emergency response exercises are performed at prescribed intervals involving trained site and local Mutual Aid emergency responders. Municipal emergency responders participate in site tours and some members participate with company personnel at annual training sessions at Texas A&M University’s highly regarded emergency response training centre. There is a defined process in place for debriefing emergency exercises and incidents, including a follow-up process to ensure that all action items have been addressed. Recent integrated community emergency drills included a train derailment with product spill to the river and a winter storm scenario (i.e. Power outage with blocked roads, limited resources etc.) There is a policy in place to address assistance for persons dislocated by a site emergency.

There are also information update telephone lines to each site allowing residents to call the number if they have questions about site activities such as loud noises, flaring, traffic levels or unusual smells. Call out systems are also in place to advise neighbours of emergency situations that may impact them. The call out is direct from the Prentiss site and through Northeast Region Community Awareness Emergency Response at Fort Saskatchewan.

MEGlobal has an agreement in place with Dow Chemical under which Dow manages MEGlobal’s transportation incidents.

The August Prentiss site’s “Summer CAP Socials”, initiated in 2011, have provided a venue to communicate Responsible Care information, with an emphasis on “Shelter in Place”. Potentially impacted site neighbour locations at both sites are also visited every three years to ensure that their emergency contact telephone numbers are correct. While the company is proactively providing site risk and emergency response information, the team concluded that the process lacks a “check” step to test the effectiveness of the process for notifying individuals potentially impacted by a site emergency when they do not respond to the call. The team also found that the Ellis Bird Farm, located within the Prentiss site’s emergency impact zone, lacked an effective emergency response process to notify and protect on site employees and visitors from a Prentiss site emergency.

Successful Practice:

The inclusion of winter storm scenarios in emergency exercises.

Finding Requiring Action (ref OP 39):

That the Prentiss site support their sponsored Ellis Bird Farm in the development and implementation of a management system for responding to Prentiss plant site emergency scenarios by which they could be potentially impacted. Specific aspects to be considered include:

- Emergency notification systems and processes from plant to Bird Farm and Bird Farm to employees and others on site during an emergency.
- Identification of Shelter in Place locations.
- Educating employees and visitors about how they will be notified and how they are to respond.
- Periodic drills with debriefs to ensure the ongoing effectiveness of the notification and response processes.

Improvement Opportunity:

At Fort Saskatchewan and Prentiss, establish a schedule to test the community emergency call out system on a regular basis, which not only checks the communications technology but also actively exercises the process for contacting potentially impacted individuals who did not respond to the call.

Work in Progress:

Complete, in the company's crisis management system, the formal documentation of the process for ensuring that various aspects of codes OP 38 through OP 46 which were identified as gaps during the company's analysis of systems in place versus new code expectations.

d. Malicious Intent

Security vulnerability assessments have been completed and follow-up actions addressed and documented. Security policies are in place for both sites. Site personnel access is controlled using a card access system, and vehicle access is limited to designated gates. Vehicle and trunk inspections are done at random intervals. Technology security includes a fire wall and process computers are not linked to other systems.

e. Critical Infrastructure/Business Continuity

With ethylene being the major raw material used by both sites, the company has limited alternative source options in the event of a large scale emergency at supplier sites. However, a gap assessment has been performed vs. code expectations in this area and steps are being taken to minimize the adverse consequences.

Work in Progress:

The development of a process to mitigate the effects of Critical Infrastructure/Business Continuity events (ref OP 49 through OP 55).

f. Incident Reporting and Investigation

Incidents include those related to personnel safety, loss of primary containment, process safety, government reportable, motor vehicle, neighbour complaint, transportation safety, customer / terminal / distributor facility, and security.

A comprehensive process, utilizing established investigation methodology, is used by formally trained assessors to analyse incidents, unplanned events, non-conformances, and near misses. Actions aimed at preventing recurrence are identified, with appropriate follow up and communication of lessons learned. A unique aspect of the program is the identification of "what has gone right" for transferable learnings.

An “Event and Action Tool” is used to ensure follow-up actions are tracked to completion. The tracking system also includes a follow up process to ensure that implemented corrective actions have properly addressed root causes.

2.1.4 Environmental Protection

There is a clear focus evident on reducing the impact of company operations on the environment with a documented pollution prevention program in place which addresses wastes and emissions, air quality, water quality, and soil and groundwater.

The company’s focus on and commitment towards improving the operational efficiency of process units, combined with the implementation of various environmental improvement projects since 2005, have resulted in:

- An 84% reduction in priority chemical (ethylene oxide, acetaldehyde and formaldehyde) emissions
- A 59% reduction in CO2 emissions intensity.
- Zero loss of Primary Containment incidents in 2012 vs. 5 in 2005.
- Wastes from the Prentiss sludge pond have been reduced by 400 tonnes/year over the past 5 years.
- Three agency reportable incidents since 2005 with none during the past five years.

The company also in its Focus 2020 commitments vs. 2010 results aims to achieve:

- An additional 50% reduction in chemical and ethylene oxide emissions,
- A 30% reduction in CO2 emissions intensity,
- A 25% reduction in CO2 emissions,
- A 15% reduction in energy intensity,
- A 6% reduction in raw material usage and a
- A 10% reduction in fresh water usage.

Successful Practice:

The team concluded that the company’s focus on and commitment towards improving the operational efficiency of process units, combined with the implementation of various projects to reduce site emissions, which have resulted in a significant reduction in MEGlobal’s environmental footprint, warrants recognition as a successful practice.

2.1.5 Resource Conservation

See 2.14 above

2.1.6 Promotion of Responsible Care by Name

As previously noted, ODMS is the overarching management system with Section 6.0 entitled Responsible Care (EH&S). The overall ODMS ensures the Responsible Care ethic is sustained throughout MEGlobal Canada.

Subsequent to their previous verification, the company has improved the visibility of Responsible Care. Examples include:

- Making it visible in the Prentiss site’s visitor orientation video.
- Enhancing Responsible Care signage at both production sites.
- Including the Responsible Care logo on promotional materials, business cards, and contract documents.
- Educating local community attendees about Responsible Care at company sponsored events such as the Prentiss site’s “Summer CAP Social”

The verification team found that employees interviewed at both sites had a good understanding as to how Responsible Care applied to their work. Interest was also expressed in knowing how Responsible Care principles were applied in the sale of product in distant parts of the world. However, it was found that there is

not a structured management system in place for the promoting Responsible Care® “by name”, without which the team concluded that slippage of current processes could easily occur over time.

Improvement Opportunity:

An opportunity for improvement in the promotion of Responsible Care® by name has been listed by the verification team by:

- Having a documented management system for the promotion of Responsible Care® by name.
- Broadening employees’ awareness of the scope of Responsible Care and how Responsible Care principles and codes are applied elsewhere in the company.

2.2 Team Observations Concerning Stewardship Code

2.2.1 Expectations of Companies

a. R& D Expectations and b. Expectations Beyond R & D

MEGlobal’s ethylene glycol products are basic commodity chemicals that have been minimally changed and extensively assessed over many years for risks, both internally and externally by a number of organizations. In addition, the company participates actively in various industry groups that specifically focus on ethylene glycols such as the American Chemistry Council Ethylene Glycol Panel. The company has completed a life cycle analysis comparison of the various ways for producing ethylene glycol and concluded that the process they utilize is the best current technology. R& D efforts are thus primarily focussed on:

- Improving catalysts involved in the conversion of raw material to the chemical intermediate, ethylene oxide, in the first stage of producing ethylene glycol.
- Facility and equipment design changes to take advantage of improved catalyst technologies.

There is a documented stewardship program in place which addresses product management in the areas of health, safety and environmental information, risk characterization, restricted/unsupported applications, design, employee education and use, contract manufacturers, suppliers, swaps/trades/tolls, distributors, resellers, and customers.

The Responsible Care logo is included on contract documents, business cards, product handling brochures and other promotional materials. The company’s Canadian distributor is a member of the Chemical Distributors Association and thus very aware of and committed to Responsible Care practices applicable to their operations.

MEGlobal, in performing their gap analysis vs. new code elements identified a gap vs. code element ST 109. The team concluded that work processes and management systems in this area meet or exceed the expectations of code elements ST 85 through ST 110 with the exception of the “Work in Progress” listed below.

Successful Practice:

The team concluded that MEGlobal’s non product use management system deserves recognition as a successful practice

Work in Progress:

To develop and disseminate information about the sustainability and contribution to the betterment of society that the company raw materials, products and services provide (ref ST 109).

2.2.2 Expectations with Respect to Other Parties

As noted in section 2.1.2 c of this report, MEGlobal has an intensive auditing process for distributors and customers which generally meets or exceeds the expectations of code elements ST 115 through 124. A rigorous control process is in place to minimize the potential for product misuse. Specific aspects include the tracking of product misuse information across the world, no product sales in drums or small containers, a non product use document detailing unacceptable product applications and a rigorous new customer or product use approval process. The company did, however, in their code gap analysis, identify that a gap existed vs. the expectations of code element ST 115 in their processes for other parties with whom they do business.

Work in Progress:

Complete the development and implementation of formal processes to:

- Consistently ensure that other parties with whom the company does business are aware of and understand the expectations of Responsible Care and its ethic , “Principles of Sustainability, and the codes and
- Establish application of the codes as a contractual obligation whenever practical.

2.3 Team Observations Concerning Accountability Code

2.3.1 Operating Site Communities

ME Global has clearly defined its “communities” with a formal community awareness and dialogue process in place with the objectives being to:

- Inform and maintain ongoing open and transparent dialog with key stakeholders that fosters understanding and a foundation of trust, in a social setting.
- Meet the requirements and intent of their Responsible Care commitment and community outreach/dialogue through a planned approach on a three year cycle.

The Prentiss Summer CAP Social, held at the company sponsored Ellis Bird Farm located across the site access road to the Prentiss site, provides a venue to communicate all information surrounding their Responsible Care codes of practice and commitments. Each year, information made available to guests includes the Responsible Care in Action brochure; the Prentiss Community Line magnet, Shelter in Place information and regular company metric updates.

MEGlobal and Dow collaborate in community outreach at both the Prentiss and Fort Saskatchewan sites. MEGlobal shared their program documentation during the Prentiss site visit. For both sites, there is a professionally facilitated and well represented community advisory panel (CAP) in place (residents, industry, educators, and students). The verification team’s meeting with the Prentiss CAP was quite congenial and the group appeared to have a good working relationship with site management from both companies. There are terms of reference in place for both site CAP’s, and this is clearly documented. While the Prentiss CAP indicated that they had reviewed the previous Responsible Care verification report, they could not recall having had any subsequent dialogue or follow up process in place to help ensure that community related items in the report were satisfactorily addressed.

MEGlobal have defined areas for major community support with the following three facilities having received significant financial contributions historically and/or in recent years:

- Ellis Bird Farm located in the Prentiss site’s buffer zone.
- MEGlobal Athletic Park in Lacombe.
- North West Mounted Police representation project in Fort Saskatchewan.

Improvement Opportunity:

An opportunity for improvement is for the CAP's at both the Prentiss and Fort Saskatchewan locations to have a follow up process in place for community related items from Responsible Care verification reports to ensure that action plans to address these are understood, accepted and effectively implemented.

2.3.2 Other Stakeholders

The company is active in CIAC activities, including representation on the CIAC Management Committee, various technical committees and regional groups. On a corporate level, through its involvement with the Gulf Petrochemicals and Chemicals Association (GPCA), MEGlobal offers resources to promote Responsible Care in the Arabian Gulf region and are active promoters of the implementation of Responsible Care in China. They are also actively involved in several other industry and business associations such as the Fort Saskatchewan Industrial Association and NR CAER. The company's agreement with Dow Chemical includes support in the area of Regulatory Affairs.

The team concluded that the company's processes in place generally meet the management system expectations of section 2.3.2 with the following improvement opportunity having been identified.

Improvement Opportunity:

There is an opportunity for improvement to assess MEGlobal's process for proactively engaging and dialoging with local elected and appointed officials verses the expectations of Accountability Codes AC138 through AC 140.

3. TEAM OBSERVATIONS ON THE COMPANY MANAGEMENT SYSTEM

It is a requirement of Responsible Care that companies have a documented, self-healing management system or systems capable of identifying and responding to deficiencies and otherwise supporting continual improvement across all company business units, functions, and sites and as a framework for implementing the Responsible Care Commitments.

The verification team studied ME Global's management system(s) and compared and contrasted the attributes of that system(s) to those of a self-healing overall management system as discussed in the CIAC Management System Guide. The verification team's related observations to the company management system(s) are as follows:

As a Dow joint venture and licensee, MEGlobal Canada Inc. utilizes an integrated management system called Operating Discipline Management System (ODMS). ODMS is the company's comprehensive corporate management system that integrates the management systems for Manufacturing, Quality, Environmental and Health and Safety. ODMS integrates common management processes within MEGlobal Canada to drive overall performance improvement. ODMS provides access to policies, requirements, processes, best practices and procedures and is based on the plan-do-check-act cycle. Although Section 6.0 of ODMS is titled Responsible Care (EH&S), it is the overall ODMS that ensures the Responsible Care ethic is sustained throughout MEGlobal Canada.

In considering the MEGlobal's overall management system, the verification team concluded that it meets CIAC's expectations as detailed below.

3.1 Observations on the PLAN Step

During the PLAN Step of the management system, the company decides what the goals of the company are and how they will be met. In determining those goals, it is expected the company will look inward, across its operations, but will also look outward, considering the expectations of: stakeholders; regulatory requirements; relevant CIAC Responsible Care Commitments and supporting tools; and other industry benchmarks. In considering the PLAN Step of MEGlobal's management system, the verification team observed the following: In 2006, to elevate performance to the next level, a FOCUS 2012 theme was initiated to concentrate on two key areas where the company could emphasize its commitment to safe and responsible management. Using input from various internal stakeholders and 2005 results as a benchmark, "FOCUS 2012 Goals" were established for two focus areas. One of these was referred to as Target Zero Environment Health and Safety Incidents, including personal injuries / illnesses, loss of primary containment, process safety incidents, agency reportables, and motor vehicle incidents. The other area was referred to as Reduced Environmental Footprint, and included reduction of priority chemical and other emissions, reduction in CO2 emissions intensity, and reduction in fresh water usage. These goals tracked a range of metrics from environmental emissions and impacts, resource productivity measures such as production energy intensity, to monitoring for personnel and process safety performance. With this process having resulted in significant performance improvements in the various areas of focus as detailed elsewhere in this report, a similar process was used during 2013 to establish FOCUS 2020 goals. These new goals were also developed using input from a broad stakeholder base and address CIAC's Responsible Care code, ethics and Principles for Sustainability expectations.

3.2 Observations on the DO Step

During the Do Step in the management system, the company converts the decisions of the PLAN Step into action and ensures awareness and understanding by all involved. It is expected that the company will implement an organizational structure, assign responsibilities to appropriate personnel, supply sufficient

training and resources to execute planned actions and develop and document standards, procedures and programs, as applicable.

The verification team observed that responsibilities for the development and implementation of action plans to achieve established goals and objectives are delegated to specific leadership positions and that processes are established and implemented for their achievement.

3.3 Observations on the CHECK Step

During the CHECK Step in the management system, actions carried out in the DO Step are assessed to determine if they are actually being carried out according to plan, and whether they are achieving the desired outcomes and delivering continual improvement. Here, the overall management system and components will be reviewed along with employee competences for assigned responsibilities, internal and external audits will be undertaken, incidents will be assessed to identify root causes, and performance measurement will be conducted and reviewed.

The verification team observed that an extensive “check” process is in place including:

- Monthly site inspections and checks on items such as Management of Change, work permits etc.
- Regular status reporting and reviews vs. FOCUS goals and action plans.
- Annual self assessments vs. ODMS elements with all elements being covered over a three year period.
- In depth 5 day corporate ODMS audits of manufacturing sites at three year intervals.
- Corporate Product Stewardship audits every five years.

3.4 Observations on the ACT Step

During the ACT Step in the management system, the company translates the results of the CHECK Step into corrective actions for improvement. This includes revisiting the PLAN Step to decide whether changes are need to the company’s stated goals or action plans, policies and procedures for achieving those goals. Considerations when examining the Act Step include whether and how: audit and review findings are responded to; performance is communicated internally and externally; employee and contractor performance is rewarded and corrected, etc.

In considering the Act Step of MEGlobal’s management system, the verification team observed that Items from the management system review are tracked through completion using the company’s Event & Action tool and utilized by the company’s CIAC Executive Contact and senior plant leaders to assess ongoing conformance with Responsible Care.

4. TEAM OBSERVATIONS ON THE RESPONSIBLE CARE ETHIC AND PRINCIPLES FOR SUSTAINABILITY

Each CIAC member company is formally committed to the ethic of “*Doing the right thing, and being seen to do the right thing.*” This ethic, along with the principles for sustainability, are expected to guide the company’s decision making and practices. In conducting the verification, the team is looking to understand how well the ethic is understood and adopted within the company, and the degree to which the principles inform the manner in which the company does its business.

The verification team carefully observed MEGlobal’s decision making processes and actions and compared and contrasted the attributes of those with the attributes of a company guided by the Responsible care Ethic as discussed in the Responsible Care Commitments (Appendix E) and the eight Principles For Sustainability listed on page 5 of this report.

The verification team’s related observations on the company’s application of the *Responsible Care Ethic and Principles for Sustainability* are as follows:

Many aspects of MEGlobal’s application of the Responsible Care ethic and commitment to sustainability are evidenced by the significant improvements achieved versus various related metrics in their FOCUS 2012 initiative as documented elsewhere in this report. Their continued commitment is also evident in their recently finalized FOCUS 2020 document, accessible on the MEGlobal’s website www.meglobal.biz, which details specific stretch targets in the areas of EH&S Performance, Environmental Footprint and Social Performance.

5. VERIFICATION TEAM CONCLUSION

As a result of the examination conducted, and in consideration of the observations communicated within this report, the verification team is of the opinion that the Responsible Care Ethic and Principles for Sustainability are guiding company decisions and actions, and that a self-healing management system is in place to drive continual improvement. The team believes that the company is capable of responding to the Finding Requiring Action identified during the verification, as summarized in the Executive Summary and discussed in detail in the report. The verification is complete and no further involvement is required by the verification team.

ATTACHMENT 1: COMPANY RESPONSE TO VERIFICATION TEAM REPORT

On behalf of MEGlobal I have reviewed this verification report. The observations and conclusions contained in the report have been discussed with the verification team.

MEGlobal will communicate the results of the verification exercise with its CIAC peers at their next meeting, and will discuss the verification results with our stakeholders, including those representing communities near our operating sites.

We will give consideration to the Improvement Opportunities identified by verification team and will assist the CIAC in communicating and sharing the identified Successful Practices to other CIAC members. Plans will be developed and implemented to respond to the Findings Requiring Action identified by the verification team. Our progress in implementing those plans will be discussed when preparing our Annual Statement of Re-Commitment to Responsible Care, and communicated to the verification team at the time of our next verification.

Pravind Ramdial
Global EH&S Leader
MEGlobal
December 22, 2013

ATTACHMENT 2: INTERVIEW LISTS

A: Company Personnel Contacted During Verification Process

Name	Position	Location
Pravind Ramdial	Global EH&S/Quality Leader	Fort Saskatchewan
Rod Boshnick	Dow EH&S Delivery Leader	Prentiss
Sylvia Gueffroy	Senior Administrative Professional	Fort Saskatchewan
Ben Rush	Six Sigma Leader	Fort Saskatchewan
Charlotte Orrell Hoskins	Sr. Improvement Eng.	Prentiss
Gary Breneman	Product Stewardship / EH&S Focal Point Midland	Midland, Michigan
Darrell Lu	Reliability Eng. (CALL IN)	Fort Saskatchewan
Allan Rowley	EH&S Delivery Tech.	Prentiss
Rob Jost	EH&S Delivery Tech.	Prentiss
Dale Sandford	EH&S Delivery Tech.	Fort Saskatchewan
David Miller	Maintenance Leader	Prentiss
Darren Berg	P1 Production Leader	Prentiss
Clarence Stadlweiser	Site Leader & Technology Director	Fort Saskatchewan
Steve Quine	Sr. Technical Advisor	Prentiss
Zane Baxter	Technical Advisor	Prentiss
Emily Carling	Chemist	Prentiss
Jim Lampe	Site Leader/P2 Production leader	Prentiss
Brenda Gheran	Communications Consultant	Fort Saskatchewan/Prentiss
Abey Idicula	ES/EOB Production Leader	Prentiss
Tom Fisher	Dow Security	Prentiss
Cam Kreil	Improvement Leader	Prentiss
Corinne Dueck	ME Global A&O Business Manager	Prentiss
Kim Ng	Production Engineer	Fort Saskatchewan
Mitch Colwell	Process Safety Leader	Prentiss
Rocco Schurink	VP Operations, CIAC Executive Contact (CALL IN)	Prentiss

B: External Stakeholders Contacted During Verification Process

Name	Company / Organization	Position	Location
Karianne Reitsma	High School Student	Youth Rep on CAP	Prentiss
Tonia Sprague	High School Student	Youth Rep on CAP	Prentiss
Audrey Herman	Adult Educator	Prentiss CAP	Lacombe Resident
Steve Schultz	Lacombe H S Teacher/Youth Environmental Leader	Prentiss CAP	Lacombe Resident
Sandra Badry	Economic Development	Prentiss CAP	Lacombe County
Marilyn Sharp	Near Neighbour	Prentiss CAP	Prentiss
Duff Boyd	Praxair, Near Industrial Neighbour	Prentiss CAP	Prentiss
Jim Gendron	LTG Consulting	Facilitator, Prentiss & Fort Saskatchewan CAP's	
Jim Nelson	Retired Educator	Fort Saskatchewan CAP	Fort Saskatchewan Resident
Barb Bigelow	Fort Saskatchewan Family & Social Services	Fort Saskatchewan CAP	Fort Saskatchewan Resident