



RESPONSIBLE CARE[®] Verification Report

Solvay (Cytec Canada Inc.)

October 31 & November 1, 2017

Disclaimer

This report has been produced by a team, convened by the Chemistry Industry Association of Canada (CIAC), to provide advice to the member-company and assist it in meeting its Responsible Care[®] commitments. The material in this report 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 that is the subject of this report to interpret and act on the report's findings and recommendations 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 Solvay (Cytec Canada Inc., Welland Plant). Cytec Canada Inc. (from here on out referenced in this report as Solvay) is wholly owned by the Solvay Group and is part of their Technology Solutions business. The CIAC RC verification was undertaken on October 31st and November 1, 2017 at their only Canadian production site.

The CIAC verification team followed the verification guidelines as recently agreed by the American Chemistry Council (ACC) and the Chemistry Industry Association of Canada (CIAC). Both associations signed this year an agreement for the harmonization of their RC verification process to foster greater integration of Responsible Care program elements in Canada and the United States. The Solvay (Welland Plant) has undergone a RC-14001;2015 and OHSAS;2007 verification on September 11 to September 13, 2017 and October 4, 2017 with success. Solvay's Global Business Unit (GBU) Technology Solutions headquarter will undergo their RC-14001;2015 verification later this year from November 27 to December 1, 2017.

The CIAC verification team conducted interviews with company personnel located at the site and as required with individuals located in the USA that are responsible to support the Welland personnel on different codes of practice elements related to product sales, technical support and logistics activities (e.i.; transportation, terminals, distributors, tollers). The verification team also met some plant employees and worker representatives of the site joint Health & Safety committee to discuss RC compliance elements. This was the seventh Responsible Care verification completed for Cytec Canada. The last CIAC RC verification was completed in September 2014.

While considering all aspects of the Responsible Care Commitments during this verification and the outcome of the September RC-14001;2015 (ACC)/OHSAS-18001;2007 verification by the registrar SAI Global and scrutiny of their report, the CIAC RC verification team placed an emphasis on conducting an in-depth examination of company aspects related to:

- Product Stewardship
- Carriers selection and management
- Contractors manufacturing (tollers) selection and management
- Contractors selection and management (site)
- Customers approval and relationship
- Distributors selection and approval/management
- Suppliers selection/management
- Site risks identification and management/MOC.
- Site community dialogue and risk communication process, and engagement with other stakeholders.
- Solvay Social responsibility
- Solvay Sustainability program and activities.
- Promote awareness of Responsible Care and inspire other to commit.

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 range of Findings Requiring Action, Work in Progress and Opportunities for

Improvement 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: Marcel Émond
Verification Team Leader

Date: December 5, 2017

For more information on this or a previous CIAC 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. FRA - The site management has to assure themselves that the immediate neighbors living on the site boundaries are aware of the potential site emergency situations, how they will be rapidly informed of such emergencies, and that they know what to do to effectively protect themselves in the case of a potential emergency.
2. FRA - Solvay must have a cross reference document to assure that they are in compliance with the Stewardship code elements (R&D) ST-93 to 99 along with ST-123 & 124 and the Accountability code elements mainly AC-125 to 131.

Works in Progress

1. The site "contractor selection and approval process" is considered a Work in Progress by the CIAC team.
2. The company is working at revamping the "Community Advisory" panel (CAP) to assure timely and focused dialogue with the local residents. The CIAC verification team is considering that as a Work in Progress.
3. Completion of the analysis of the modeling of an alternate scenario for TTPC release from a tote is considered a Work in Progress.

Improvement Opportunities

1. OFI - Solvay should evaluate the benefit of quantifying and publicizing the social and economic impact of their presence in the Niagara region.
2. OFI - The local management should evaluate the benefits of belonging to and attending a local business association in order to promote Responsible Care.
3. OFI - Invite one or two residents living on the site boundaries to become a CAP member.
4. OFI - Invite as a CAP member a representative from a local conservation group in order to facilitate the identification of local environment issues, and consider supporting them through the Solvay Social Action process.
5. OFI. - Document the process of assessing customers for handling hazardous products.

Successful Practices

1. The AIT process (Area Improvement team), and its ongoing regular application is considered an industry best practice.
2. The corporate " Sustainable Portfolio Management "program (SPM) is considered an industry best practice.
3. The Solvay "Social Responsibility" approach, including locally encouraging their employees to participate in local non-profit activities for the benefit of City residents is considered an industry best practice.

4. The "Solvay Way" initiatives approach and implementation guidelines is an industry best practice.

5. The comprehensive Solvay tracking process of key Xs activities, MOS, "Road map/Smart" sheet is considered an industry best practice as compared to the usual monitoring of Key Performance Indicator (KPI) by industry.

6. The Technical Group's approach for continuous improvement by developing projects for water and raw material conservation is a best 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 Solvay (Cytac Canada Inc, from here on out known as Solvay in this report) 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*.

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.**

** Activity not covered by RC-14001 verification

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

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 either the RC-14001;2015 (ACC) or the CIAC common protocol, developed by the Canadian 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). Solvay (Cytec Canada) 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 CIAC Responsible Care Manager at glaurin@canadianchemistry.ca or (613) 227-6215 extension 233.

1.2 About Solvay (Cytec Canada Inc.)

Solvay bought Cytec Canada Inc. in 2015 and integrated Cytec Canada Inc. operations within their "Technology Solutions" business with other Solvay phosphines /phosphine derivatives production sites. Solvay Worldwide headquarter is in Brussels, Belgium and they have some 27000 employees and 140 industrial sites in 58 countries. The Solvay Technology Solutions worldwide business employs some 1500 employees. Solvay has only one Canadian production site (Welland site) and it is in Niagara Falls ON. It employs some 150 employees and its operation is on a 24/7 basis.

The site was owned by the Canadian government and managed by American Cyanamid when it was built in 1940. It was producing flashless shell propellants for naval guns. After the war, American Cyanamid bought the plant to produce ammonia based fertilizers. In 1993, The site ownership was switched to Cytec. In 2014, the site has added a second production unit to become the largest phosphine and phosphine derivatives production plant in the world and was acquired by Solvay in 2015. The site products are used in fumigation, pharmaceuticals, chemicals, electronics, mining and the water treatment sectors.

1.3 About This Verification

The verification of Solvay was conducted on October 31 and November 1, 2017. The CIAC verification team conducted interviews with company personnel located at the site and as required with personnel located in the USA that are responsible to support the Welland site personnel on different codes of practice elements related to product sales, technical support and logistics activities (e.i.; transportation, terminals, distributors, tollers). The verification team also met some plant employees and representatives of the joint Health & Safety committee to discuss RC compliance elements. Attachment 2 contains a list of those individuals interviewed and their affiliations.

This is the seventh CIAC RC verification exercise completed for Solvay. The last verification was completed on September 23, 2014. This RC verification is the first one performed after the agreed US and Canada Chemistry associations partnership to enhance safe chemicals handling in North America (08/17/2017). The CIAC verification team took into account the outcome of the site verification performed by the registrar SAI Global using the RC-14001;2015 and OHSAS 18001;2007 protocol. The SAI Global registrar site visit was from September 11 to 13, 2017 and a report was issued on October 4, 2017.

The CIAC RC verification team was comprised of the following individuals.

Name	Affiliation	Representing
Marcel Émond	GMEE	<i>Team Leader</i>
David Powell	University of Toronto	<i>Public-At-Large Verifier</i>
Mabel Biggar	Niagara Falls resident	<i>Community Representative- Niagara Falls</i>

2. TEAM OBSERVATIONS CONCERNING THE RESPONSIBLE CARE COMMITMENTS (CODES AND BENCHMARK AND COLLECTIVE EXPECTATIONS)

During the verification of Solvay, 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, the team placed an emphasis on conducting a more in-depth examination of certain company aspects identified by the company or the team.

The site operations and activities were scrutinized but not verified by the CIAC verification team using the recent RC-14001;2015 technical specification manual. The CIAC verification team examined more in depth the company activities that are under the responsibility of other Solvay personnel not located at the site that could affect the Canadian RC codes elements compliance and that were not covered or were partly scrutinized by the site SAI Global registrar personnel on behalf of ACC during the site RC-14001;2015 and OHSAS 18001;2007 verification in September 2017. These were amongst other;

- Carriers selection and management
- Contractors manufacturing selection and management
- Customers approval and relationship
- Distributors selection and approval/management
- Suppliers selection/management
- Promote awareness of Responsible Care and inspire other to commit.
- Site community dialogue process
- Solvay Social responsibility
- Solvay Sustainability program and activities.
- Etc.

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 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 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 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

The CIAC verification team reviewed the 2017 SAI Global Re-Assessment Audit and 12 Month Surveillance Audit report from the ACC RC verification that was conducted at the Welland facility prior to this CIAC RC verification. The team also scrutinized the documentation requested in the CIAC verification preliminary information package. Upon review of the above-mentioned documentation, the team highlighted some activities for further scrutiny.

The team examined the site operations and products risk identification and mitigation process, the management of change process (MOC), the identification of operations and safety key performance indicators (KPI) and the continuous improvement management process. The team also scrutinized the site Emergency response process and the involvement of the City First Responders. It was noted that the site Emergency Response team has a quarterly training plan that includes some site emergency situation simulations. Solvay is an active member and participant in the local CAER group which involves other chemical industries in the Niagara Falls region. The last joint CAER Group emergency simulation involving the external stakeholders was performed in 2014 and the next one is scheduled for 2019. The Niagara Falls Fire Department completed a site tour in 2017 and a "table top" emergency simulation exercise is planned in 2018. The site management made presentations, and supplied additional documentation to confirm compliance to the above-mentioned activities and practices.

Completion of the analysis of the modeling of an alternate scenario for TTPC release from a tote is considered a Work in Progress.

They have documented "Business Continuity" and "Critical Infrastructure" programs. They have identified their vulnerabilities and have a corrective/ specific issues management plan.

The site's Technical Group's identifies projects (5 to 10 projects per year) to reduce energy consumption, create raw material savings and identify opportunities for water usage reductions as they have a once-through cooling water system.

The Technical Group's approach for continuous improvement by developing projects for water and raw material conservation is a best practice.

In 2016, the Site implemented an "Area Improvement Team" concept (AIT) that involves site personnel (operations, maintenance, engineering, technical and supervisory personnel) to be proactive in finding solutions and setting priorities for improvement suggestions.

The AIT process (Area Improvement team), and its ongoing regular application is considered an industry best practice.

The site suppliers' selection and approval process were scrutinized. The supplier selection process is managed by using the MOC process.

The site contractor selection process was scrutinized. The contractor selection procedure is currently under review to assure full contractor competence to perform a job on site.

The site "contractor selection and approval process" is considered a Work in Progress by the CIAC team.

Upon review and scrutiny of the RC-14001;2015 and the OHSAS 18001;2007 report coupled by the site management presentations with back up documentation on the above-mentioned topics at the CIAC verification team request, it is the team consensus that the RC Operations code expectations are being met.

2.2 Team Observations Concerning Stewardship Code

The CIAC verification team reviewed the 2017 SAI Global Re-Assessment Audit and 12 Month Surveillance Audit report from the ACC RC verification that was conducted at the Welland facility prior to this CIAC RC verification. The CIAC verification team put emphasis on discussions with the Technology Solutions GBU (global corporate office) that are responsible for the selection of third party service providers to handle activities that support the business on the compliance of the following CIAC RC code elements; carriers selection and management, contract manufacturers (tollers) selection and management, distributors selection and approval/management, chemical suppliers selection/management. There is a very thorough carrier selection process in place.

A similar approach was followed with the Sales department (US) to confirm the customers approval process and relationship for handling safely all phosphine and phosphine derivatives products. The Sales department is supported by the "Application Technology" and the "Product Stewardship" Groups to provide product documentation, product specific training and ongoing technical support to customers as required. Solvay has in its supplier and customer contracts a "Responsible Care" clause to highlight the RC guiding principles and their mutual responsibility to adhere to these principles concerning the handling of Solvay products.

OFl. - Document the process of assessing customers for handling hazardous products.

Presentations were made of ongoing practices supplemented by proper documentation; procedures and activities check sheet and customer safety training topics.

The R&DI activities were scrutinized in light of a Sustainable Development approach. Solvay through their "Sustainable Portfolio Management" approach is evaluating all its present and future products to ensure a minimum environmental impact through all its products life cycle. They measured the environmental impacts either through 19 questions or measured indicators. They adhere to a 2016-2020 time frame to reduce or replace "high environmental impact" existing raw materials or products whenever it is technically possible to do so and not to produce a new product with a high environmental impact. These activities are managed by the corporate " Sustainable Portfolio Management "program (SPM). The program outcome is submitted to a third-party auditor and checked for transparency and effectiveness.

The corporate " Sustainable Portfolio Management "program (SPM) is considered an industry best practice.

2.3 Team Observations Concerning Accountability Code

The CIAC verification team reviewed the 2017 SAI Global Re-Assessment Audit and 12 Month Surveillance Audit report from the ACC RC verification that was conducted at the Welland facility prior to this CIAC RC verification. Upon review, the CIAC team realized that several elements of the CIAC "Accountability " code were either not covered or minimally addressed in their September 2017 verification. It mainly pertains to the CIAC RC code elements AC-125 to AC-132. The team also scrutinized the documentation requested in the CIAC verification preliminary information package.

The team focused on the following activities; Community Dialogue including risks communication to the community residents, Social Responsibility including company/site personnel involvement and finally Sustainable Development activities.

The "Welland" site management team are active supporters of most CIAC RC activities (e.i.; CIAC subcommittees; SHARE, TRANSCAER, etc) and locally they are an active participant in the Niagara Falls CAER group. The management team personnel have regular contacts with the Municipal authorities and are supporting and/or participating in several CIAC driven meetings/events with the Provincial or Federal government.

Solvay at the Group level (Worldwide) wants to reduce its CO2 emissions by 40% in the 2015-2025 time frame.

The site has a "dedicated person" and phone numbers that can be reached in case of an emergency or a complaint. That information was publicized in a pamphlet mailed to the local residents within a 2-km radius. Only 2 complaints were received in last 2 years due to a flaring event and those industrial residents were contacted for follow up.

Solvay has a comprehensive "Social Responsibility" initiative favoring the involvement of all its employees in supporting local societal activities. Such activities include sponsorship, donations, offers of sweat equity (free employee time) to non-profit organization, and support of local health and education projects. Some 80% of the site employees are involved in giving their own time in these activities for the benefit of the City residents. In the last 2 years, the company and its employees were involved in 15 projects.

The Solvay "Social Responsibility" approach, including locally encouraging their employees to participate in local non-profit activities for the benefit of City residents is considered an industry best practice.

OFI - Solvay should evaluate the benefit of quantifying and publicizing the social and economic impact of their presence in the Niagara region.

OFI - The local management should evaluate the benefits of belonging to and attending a local business association in order to promote Responsible Care.

The CIAC team has scrutinized the site community dialogue process and activities. Prior to the 2014 CIAC RC verification, it appears that the community dialogue process was done through a formal CAP where the selected community members were meeting the company representatives 2 to 3 times /year. Since the last verification, the Health, Safety & Environmental Department underwent an entire organizational change. During this period, the formal CAP was effectively disbanded. Meetings are scheduled annually with invites sent out but the site has received limited response. In 2016, the local management has sent annual information letter and invitation to residents within 2 km of the site to attend an information session but very few attended. In 2017, they mailed a Solvay general information pamphlet with an additional pamphlet highlighting the site activities, explaining what to do in case of an emergency situation and the promotion of Responsible Care. They had a questionnaire to request the comment of their nearby residents but received very few feedback and only 5 residents attended the scheduled information session (less than 3 % of the contacted people). Despite the effort and action of the site management team, the undergone activities do not fully comply with the Accountability code elements, AC-125-AC- 132, especially AC-129 to 131.

The company is working at revamping the "Community Advisory" panel (CAP) to assure timely and focused dialogue with the local residents. The CIAC verification team is considering that as a Work in Progress.

FRA - The site management has to assure themselves that the immediate neighbors living on the site boundaries are aware of the site emergency situations, how they will be rapidly informed of such emergencies, and that they know what to do to effectively protect themselves in the case of an emergency.

OFI -Invite one or two residents living on the site boundaries to become a CAP member.

OFI - Invite as a CAP member a representative from a local conservation group in order to facilitate the identification of local environment issues, and consider supporting them through the Solvay Social Action process.

Similar observations (OFI) and related findings on the site community dialogue process and practices were also noted by the 2011 & 2014 CIAC RC verification team.

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 Solvay (Cytec Canada) 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:

They utilize the ISO Technical Management system standards for all their business activities. These standards are well documented in the RC-14001;2015 Technical specification (58 pages).

They no longer used the CIAC suggested "cross reference" document to assure compliance with the CIAC 3 codes of practice and 152 elements.

The ACC/CIAC memorandum of understanding (MOU) highlights in the appendix A.3 activities included in the 3 CIAC C code elements which are partly or not covered by the RC-14001 verification process.

FRA - Solvay (Cytex Canada) must have a cross reference document to assure that they are in compliance with the Stewardship code elements (R&D) ST-93 to 99 along with ST-123 & 124 and the Accountability code elements mainly AC-125 to 131.

For their safety and security activities they comply with the legal regulatory requirements and the RC-14001;2015 & OHSAS-18001;2007 technical specification requirements. All their management process, procedures and practices are audited by third party auditors for the benefit and requirement of both associations (ACC/CIAC).

Since 2016, above and beyond the above-mentioned management system compliance, the Solvay Group has required the site management to verify if they comply with the Worldwide "Solvay Way" initiatives management approach. The "Solvay Way" is highlighting the 22 company commitments toward all their stakeholders; customers, planet, suppliers, employees, investors and communities. The "Solvay Way" documentation covers in details what each site and businesses must do to be in compliance with the "Solvay Way" initiatives. It includes the elements of Social responsibility and Sustainability. The "Solvay Way" has 4 level for requirements description; fundamental, improvement, maturity and performance.

The "Solvay Way" initiatives approach and implementation guidelines are an industry best practice.

3.1 Observations on the PLAN Step

During the PLAN Step of the management system, the Solvay Group (Worldwide) decides what the "high level" 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 Solvay management system, the verification team observed the following:

The Technology Solutions GBU develop Business Plan Commitments divided in four categories; Health Safety & Environment, Customer Focus, Manufacturing & Supply Chain Excellence and Organizational Health & Employee Engagement. The site develops its specific goals called "Key X's". Specific actions are identified for each goal along with measurable metrics for each action. The outcome of the "Solvay Way" studies can be incorporated in the "Key X's". In 2017, more than 45 goals were identified in the four categories.

Real time tracking and management of this process is performed through the use of the Site's Manufacturing Operating Scorecard (MOS).

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.

In considering the DO Step of the Solvay management system, the team observed the following:

The Plan step annual activities become the area of focus of the management team and subsequently all the employees. A manufacturing operating score card (MOS) is elaborated and all key activities are tracked on a monthly basis. The Solvay Way initiatives are tracked throughout the year and reported to the GBU Group annually. The site also had a 5-year road map that tracks improvement activities in a variety of areas. The Site's management team meets quarterly to review the progress on these activities.

The comprehensive Solvay tracking process for Key Xs activities, MOS, and the Road map/Smart sheet are considered an industry best practice as far the industry usual monitoring of Key Performance Indicator (KPI).

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.

In considering the Check Step of Solvay management system, the team observed the following:

Solvay has a comprehensive internal audits program to confirm ongoing compliance with the RC-14001;2015 & OHSAS-18001;2007 technical specifications. Eventually the Solvay Corporate management will perform an audit on the site "Solvay Way" initiatives to confirm its effectiveness. This audit will be conducted by external Solvay personnel. The Site's external audits are performed by third party consultants. The CIAC verification team performs every three years a RC verification to confirm its compliance to the 3 codes of practice and 152 elements.

As an example, the site management has supplied to the CIAC RC verification team a corrective action plan to address the 2014 RC verification findings; (one FRA and 10 OFI). The team reviewed the submitted local management team work and how they addressed the corrective actions plan.

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 needed 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 or corrected, etc.

In considering the Act Step of Solvay management system, the verification team observed the following:

The site has a comprehensive Intranet based management system (Gensuite) for logging all audits findings and resulting improvement opportunities through identified corrective action plans. Each corrective action plan has a set target completion date and progress on work is tracked by a responsible individual either at the plant level, or as required at the corporate level.

There are several other tracking mechanisms that were highlighted in the DO Step. The "Solvay Way" improvement initiatives are tracked by the Solvay Group. "Solvay Way" initiatives are tracked through the use of a "Smart Sheet".

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 is 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 the Solvay 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 and Principles For Sustainability as discussed in the Responsible Care Commitments (Appendix E). The verification team's related observations on the company's application of the *Responsible Care Ethic and Principles for Sustainability* are as follows:

The scrutiny of the "Solvay Way" initiatives and ongoing practices has initiated numerous activities to confirm that they act daily in support of the Responsible Care Ethic and fully adhere to the Principles for Sustainability, with some weaknesses in community communications as noted elsewhere in this report.

Amongst these are;

- The Research and Innovation activities and their Sustainable Portfolio Management activities (SPM).
- The ongoing customer support through their Product Stewardship, Technical Support, an R&I personnel on how to handle safely their products.
- The high percentage involvement of plant personnel in local non-profit organization to improve the local resident quality of life.
- Their resource conservation program to reduce their manufacturing foot print and ongoing effort from year to year (raw materials and energy).
- The inclusion of a Responsible Care clause in the customer and supplier contract highlighting how they should adhere to identified or specific Responsible Care clauses.
- Their implication at all level of governments to foster effective regulations and promote chemicals safe handling and usage.
- Solvay Societal initiatives for the planet such as reduction of the Solvay's Group CO2 footprint by 40 % for 2015.
- The "Solvay Way" initiatives to develop and steer relationships with local stakeholders.
- etc.

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 range of Findings Requiring Action, Work in Progress, Opportunities for Improvement identified during the verification, as summarized in the Executive Summary and discussed in detail in the report. The verification is completed, and no further involvement is required by the verification team.

Marcel Émond
CIAC Verification
Team Leader

December 5, 2017

COMPANY RESPONSE TO VERIFICATION TEAM REPORT

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

Solvay 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.

Amy Mather
Industrial Director, Phosphorus Specialties
Solvay (Cyttec Canada Inc.)
November 30, 2017

INTERVIEW LISTS

A: Company Personnel

Name	Position	Location
Amy Mather	Industrial Director Phosphorus Specialties	Niagara Falls, ON
Christine Mariotti	HSE Manager	Niagara Falls, ON
Nicole Willits	HSE Specialist (RC Coordinator)	Niagara Falls, ON
Lori Collins	Buyer (local supplier selection)	Niagara Falls, ON
Carolyn Goodwin	Operations Engineer	Niagara Falls, ON
Melodie Allen	HR Manager	Niagara Falls, ON
Jeff Dyck	Technology Director, Phosphorus Specialties	Niagara Falls, ON
Clayton Fowler	Instrument Technician, JHSC	Niagara Falls, ON
Bryan Sebben	PH3 Operator, JHSC	Niagara Falls, ON
Frank Valendro	Manager of Transportation NA	Woodland Park, NJ
Terry McColl	Senior Regulatory Compliance Specialist	Woodland Park, NJ
Bill Lombardi	Toller & Distribution Mgr	Woodland Park, NJ
Jenny TSO	Distribution Raw Material & Industrial Gas buyer	Woodland Park, NJ
Bryant Ries	Product Mgr, Phosphine Derivatives	Woodland Park, NJ

B: External Stakeholders

Name	Company / Organization	Position	Location
None to report			



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