Responsible Care® Verification Report

Imperial Oil Chemicals

November 15 - 25, 2021

CHEMISTRY INDUSTRY ASSOCIATION OF CANADA

Responsible Care®
Our commitment to sustainability.

Disclaimer

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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 Imperial Oil Chemicals (IOC). The verification was undertaken between Nov 15 and Nov 25, 2021, utilizing a virtual verification format. This was the eighth Responsible Care verification completed for IOC. The last verification was completed in January, 2019.

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. As the result of our investigations there were no Findings Requiring Action or Opportunities for Improvement, and a single Work in Progress. The verification is complete, and no further involvement is required by the verification team.

Gerry Whitcombe   Feb 22, 2022
Verification Team Leader

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Summary of Verification Team Observations

The team reviewed many Responsible Care areas and found that the company's Operations Integrity Management System (OIMS) represents a gold standard in achieving the concept of self-healing in all areas where it has been implemented.

 A successful verification requires that the team can conclude that the company satisfies the following criteria:

> 1. Is the company sufficiently meeting the expectations communicated in the Responsible Care Commitments (Codes and Benchmark and Collective Expectations)?

> 2. Is an effective and self-healing management system sufficiently in place for setting and meeting all company goals and is it driving continual improvement?

> 3. Is the commitment to the Responsible Care Ethic and Principles for Sustainability tangible and does it sufficiently guide the company's judgement, decisions and actions, internally and externally?

Given the breadth and depth of OIMS and a team dedicated to the Responsible Care commitment we believe the 'sufficiently' criteria has been met.

However, not all areas of Responsible Care have been included within existing OIMS sections and these are the areas requiring additional investigation to determine if the requirements of the company's commitment to Responsible Care are or (importantly) continue to be satisfied.

Our concern with these items relates to the ad-hoc or project type effort used to achieve an appropriate Responsible Care outcome. The commitment to Responsible Care requires a management system approach to all included components.

The team acknowledges the effort undertaken in response to the findings from the 2016 verification and is particularly encouraged by the underway rebuilding of its Responsible Care Management System (RCMS) within its Responsible Care Steering Committee (RCSC).

Work in Progress
It is a work in progress that the Responsible Care Steering Committee is reviewing and building its management systems in order to address all aspects of IOCs commitment to Responsible Care.

Introduction

1.1   About Responsible Care Verification

As a member of the Chemistry Industry Association of Canada (CIAC), the most senior executive responsible for IOC'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.

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.

As an element of this commitment to Responsible Care, IOC 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 a common protocol, developed by the association's members and others, including several critics of the chemical industry. The verification is generally 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](#). IOC 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](#), or by CIAC at jstevens@canadianchemistry.ca or (613) 237-6215 extension 227.

1.2   About Imperial Oil Chemicals

Imperial Oil Chemicals (IOC), headquartered in Calgary AB, is a major producer and seller of petrochemicals, ranging from primary petrochemicals, plastic resins, aliphatic and aromatic solvents. Imperial Oil Limited (also headquartered in Calgary) is one of Canada's largest corporations and has been a leading member of the country's petroleum industry for more than a century. The company's mission is to create value for its shareholders through the development and sale of hydrocarbon energy and related products. Imperial is one of the country's largest producers of crude oil and a major producer of natural gas. It is the largest refiner and has a leading market share in petroleum products, sold primarily under the Esso brand, through a coast-to-coast supply network. Exxon Mobil Corporation is the major shareholder of the company with an equity position of 69.6 %. The balance of the ownership is widely dispersed and held by minority shareholders. Imperial Oil is self-financing and governance is provided by a Canadian board of directors, consisting of six non-employee directors and two employee directors.

Imperial is also an affiliate of Exxon Mobil Corporation. Through a standard research agreement (SRA), Imperial has access to Exxon Mobil research and development for both processes and products. Imperial and Exxon Mobil also operate an employee interchange program to provide relevant technical and management development opportunities.

IOC produces products but does not provide any services as defined in the new codes. The chemical production units are located at one large, multi-unit manufacturing site at Sarnia that produces chemical and fuel products. Feedstocks are obtained from externally purchased sources and from intermediate (petroleum) refinery streams at the site, principally light hydrocarbons (ethane, propane, butane, propylene, butylene and naphtha).

The main chemical manufacturing units include:
- A gas-cracking complex (GCIS - 6 cracking furnaces and a light-ends recovery (LER) unit) to crack ethane, propane and butanes to produce ethylene.
- A solvent extraction unit (ARIS) to extract and recover aromatics - benzene, toluene and mixed xylenes from refinery-supplied naphthas.
- A polymerization unit (SPEP) to polymerize both purchased and own-produced ethylene in a fluid-bed catalytic reactor to produce polyethylene resin.
- A higher-olefins unit (HOIS) to convert mixed propylenes/butylenes to higher olefin intermediate products (in the C9 - C15 boiling range, such as nonene).
- A naphtha specialties (NSIS - distillation & treating) plant to extract, hydrofine and/or hydrogenate narrow cut fluids from crude oil derived naphthas, distillates and other refinery streams, and to convert a purchased feedstock (dicyclopentadiene) to produce cyclopentane.

These Sarnia-produced chemical products are sold both domestically in all parts of Canada and internationally (primarily USA) using rail, truck and marine modes of transportation, with rail and truck the dominant modes. All chemicals business functions (sales, product and process technology, etc.) are resident in Imperial's Calgary corporate head office or the Sarnia Site.

Additionally, the direct chemicals sales organization manages the sale of some ExxonMobil chemical product lines to Canadian customers. It also manages the direct sales function of domestically produced chemicals to customers in the United States through its CIOL subsidiary (Canada Imperial Oil Limited).

The management model for chemicals is full accountability for all aspects of the chemicals business by the Plant Manager reporting directly to the Chairman, President and Chief Executive Officer, who, in turn is a member of the Board of Directors of Imperial. The Polymers Business Manager reports directly to the Plant Manager. Additionally, the Plant Manager and the Polymers Business Manager has a direct functional reporting relationship with the ExxonMobil Chemical Company. The ExxonMobil Chemical Company is also committed to Responsible Care® for all of its operations in the USA and internationally. IOC is expected to fully meet the Responsible Care® ethic and all Responsible Care® code elements, as defined by the CIAC. The main mode for compliance is the OIMS (Imperial's managing framework & managing system). For those services provided to chemicals by other functional groups within the company (i.e. transportation), it is expected that these functions are also fully compliant with all relevant Responsible Care® codes and ISO 14001 expectations through compliance to OIMS.

Since the last re-verification, some major change(s) include:
- E2 Regulation
- Enhanced Process Safety (EPS) -helping our focus on process safety
- Reg 419 benzene monitoring
- Covid-19 outbreak, additional safety precautions implemented

1.3   About This Verification

The verification was undertaken on between Nov 15 and Nov 25 2021, utilizing the recently released CIAC Virtual Verification format.

Our theme or focus was generally related to examining the company's Responsible Care commitment and performance for each area investigated.

Specifically:
- Is the company sufficiently meeting the expectations communicated in the Responsible Care Commitments (Codes and Benchmark and Collective Expectations)?
- Is an effective and self-healing management system sufficiently in place for setting and meeting all company goals and is it driving continual improvement?
- Is the commitment to the Responsible Care Ethic and Principles for Sustainability tangible and does it sufficiently guide the company's judgement, decisions and actions, internally and externally?

During the course of the verification, the team had the opportunity to interact virtually with a wide range of company personnel, as well as stakeholders external to the company. Attachment 2 contains a list of those individuals interviewed and their affiliations.

This was the 8th Responsible Care verification completed for IOC. The last was completed in January 2019.

The verification team was comprised of the following individuals.

Name	Affiliation	Representing
Gerry Whitcombe	CIAC Verifier	Industry (team leader)
David Powell	CIAC Verifier	Public-At-Large
James Anger	Community Verifier	Sarnia Community
Jeff Stevens	CIAC Observer	CIAC

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

During the verification of IOC, the verification team looked for evidence that the company was addressing the expectations documented in the Responsible Care Commitments (157 code elements plus 28 benchmark and collective expectations).

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 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

The Operations Integrity Management System (OIMS) is a set of requirements applied to all activities undertaken at the site. Procedures, practices, standards, manuals, programs, etc. are all developed and implemented only in conformance to OIMS requirements.

The eleven elements of OIMS are annually reviewed by site management to ensure the intent of the OIMS system is capable of being achieved and that the system is being continually improved. Each of the sections has an owner who is responsible for determining the performance of her section, developing KPIs for the section and developing and implementing improvements.

It's key to understand that certain of CIAC's Code areas are OIMS requirements and certain Code areas are the procedures, practices etc. that must conform to OIMS.

The "OIMS to RC Mapping" document does an excellent job of making these distinctions, with respect to the Operations Code.

The approach taken for the Operations Code was to generally explore safety, health and environmental performance and any continuous improvement activities.

In addition, we explored general understanding and uptake of CIAC's broader industry approach to Responsible Care. Here we found that employees generally understood about Responsible Care, about the need to engage and dialogue with the community, the concept of license to operate and perhaps to a lesser degree about the broader industry nature of the initiative. Awareness was not particularly differentiated by whether an employee called Chemicals or the Refinery home.

2.1.1 Design and Construction of Facilities and Equipment

This Code area aligns with an OIMS section (OIMS 3.1) and even though this is a separate OIMS section it is also addressed by various other OIMS sections. This section was not reviewed for this verification.

2.1.2 Operations Activities

This area can be defined as an activities area that is subject to the full suite of OIMS requirements. For instance, the handling of laboratory wastes (OP9, OP10) is specifically referenced in OIMS 6.5 Environmental Protection.

a. General Considerations

b. Laboratory Practice

In addition to OIMS requirements, general lab practices are governed by Exxon Mobile quality standards and the lab is ISO certified. IOC can refuse to test a chemical product that they judge to be of too high risk to the surrounding community, from the Sarnia facility.

There is a full suite of safety, quality and loss prevention performance indicators which are reviewed frequently and revisited annually.

A current focus is to achieve 100% traceability of lab analyses. As well, there is a continual effort to ensure there is no slippage in safety.

The lab is a procedure/standard driven operation, and IOC feels (and the team agrees) they excel here.

c. Transportation and Physical Distribution

Transportation activities are directed by the Method of Transportation Operations (MOTO), Hauler Screening Checklist and various other procedures and checklists.

Pipelines servicing the plant are operated by a mid-stream company and are covered by OIMS section 6.4. A new program (Pipeline Integrity And Risk Management Assessment) dealing with pipelines in the public domain has been put into effect. IOC reviewed the line and its risk to the public, and one issue they identified was corrosion under insulation (CUI) which resulted in relocating some underground pipe into an existing pipe rack.

d. Maintenance

Site maintenance staffing consists of a core permanent group augmented by (normally) 50 contractors. Practices and procedures are driven by OIMS sections 6.1 (procedures), 6.3 (Critical Equipment), 6.4 (Mechanical Integrity) and (6.7) Interface management.

There has not been a contractor injury in three plus years.

Current emphasis on improvement involves the effectiveness of processes.

2.1.3 Safety and Security

The team notes that Section f. Incident Reporting and Investigation is an OIMS element (Section 9), and all other Code components listed below are programs, practices, procedures etc.

a. Occupational Health and Safety

OH&S is well managed under OIMS, resulting in an excellent health and safety record over the years.

The major event affecting plant operations since the previous verification has been the COVID pandemic. The company began planning early on when it appeared likely that the virus would be hitting the Americas. The crisis management plan was used and was modified to handle the ever-changing environment the virus spawned. Table top exercises were used to map out various possibilities, personal protective equipment (PPE) was obtained frequently, and isolation procedures, including lockdown, put in place. The essential worker list was reworked several times.

Tactical meetings were held up to twice a day reviewing manpower, implementation effectiveness and the protection of assets to continue operation while protecting people. Plans were changing every day, but the net result was everyone was protected and there were no outbreaks.

The company did not notice any particular mental health effects as a result of isolation but it was a topic of concern throughout.

b. Process Safety Management

Process safety management is an integral part of company systems. OIMS element 2 (Risk Assessment and Management) sets the foundation for virtually all company operational activities.

Current activity involves the implementation of programs supporting changing the culture related to Process Safety. Enhanced Process Safety focuses on five OIMS elements to bring about a step change in how employees perceive and respond to all situations with a stated goal of achieving a reduction initially in the frequency of high consequence Process Safety Events, and then eventually, in low-consequence Process Safety Events.

The team was asked to observe and comment on the roll out of this initiative and can report that (among our interviewees) general awareness of the program is very good, that it is understood that the roll-out is phased and that everyone will not be up to speed at the same time. It was also understood that a focus on enhanced process safety is a good thing, it is a long-term effort, it is integral to continuous improvement and a that it does require a cultural shift.

c. Emergency Management

There are two contexts here – internal and external emergency planning, communication and response. The company satisfies Code requirements in both contexts.

Some, if not most, of the external requirements are covered by the company's participation in CAER (Community Awareness Emergency Response), in particular the mutual aid agreement.

Responsible Care external requirements are clear and specific, but the conformance effort involves others (CAER (communications and mutual aid), City of Sarnia, Provincial Police, industrial peers, service industries, etc.).

The determination of external conformance to Responsible Care requirements should be the purview of the RCSC. Any subsequent need to manage non-conformances separately or to influence others to manage differently is also the purview of the RCSC.

For instance, if it is CAER's job to make sure people know shelter in place, then it is IOC's job (and from a Responsible Care perspective, the RCSC) to make sure that CAER is doing its job.

One area where there have been differences in understanding between companies and verifiers (including the writer) has been in the dissemination of hazard information between companies. The following describes the situation.

Many CIAC member companies operate in an isolated or stand-alone situation. To ensure that immediate neighbours are prepared to respond to an emergency from the facility (OP39) and to ensure the facility is capable or responding to a nearby event (OP31) the member must understand what specific hazards exist external to the facility and must communicate to immediate neighbours the specific hazards the facility presents. In Sarnia the situation is a bit different. Emergency response involving the petrochemical industry is sophisticated and complicated (and not perfect out of the box (which is why it is annually tested and evaluated to ensure familiarity, to determine weaknesses and to repair)). Compared with a stand-alone CIAC member, where two-way hazard communication informs the facility's emergency response plan, in Sarnia the mutual aid agreement plan ensures a coordinated member-wide notification, member internal response and on-going communication between all parties. When an event with possible off-site impact occurs, the system will notify all CAER members and nearby facilities and they will respond internally depending on the likelihood of impact and the type of hazard involved, and if needed they can be, and routinely are, in direct communication with the facility that has the emergency. Thus, the specific requirements to be able to prepare for and respond to in-house or nearby emergencies are satisfied by the mutual aid agreement. It is the nature and the detail of the plan that ensures affected parties have the information they need to ensure the safety of employees, contractors, the public, facilities and infrastructure.

Further background is available by visiting the Sarnia BASES website (Home - BASES Website (lambtonbases.ca)) and navigating to Emergency Preparedness.

The 'OIMS to RC mapping' document should expand on this. The RCSC's responsibility here is to ensure that the mutual aid plan meets code requirements, and if not, influence a change or independently meet the requirements.

There is further discussion on this topic in the Management System section of this report.

d. Malicious Intent
Topic was not specifically covered.

e. Critical Infrastructure/Business Continuity
Topic was not specifically covered.

f. Incident Reporting and Investigation
Topic was not specifically covered.

2.1.4   Environmental Protection
Since the last verification the company has rolled out its processes to comply with the 2nd Amendment to the Environmental Emergency (E2) Regulation, 2019.

> The regulations "require that facilities using or storing regulated substances communicate with members of the public who may be affected by an environmental emergency. This includes communicating before an incident to create awareness of the potential effects to human health and the environment, providing notification of an emergency, as well as giving updates during and after the emergency. Members of the

public could include but are not limited to community associations, public safety authorities (i.e., firefighters and police) and local residents"

The team was asked to comment on the roll out of compliance implementation measures and observed that the company's regulatory compliance process provided the necessary tools to ensure complete and proper compliance.

The potential community impact area is largely industrial and the company went door-to-door to provide the information required by the regulation.

The procedures necessary to comply with the regulation are subject to audit and the most recently completed one discovered no issues.

We have used the requirement for community outreach from E2 in the management system discussions later in this report.

a. Emissions and Waste Reduction
IOC has benzene emissions and has made a commitment to meet stringent ambient levels lower than regulated. They are moving forward on that commitment.

b. Handling, Treatment and Disposal of Wastes
Recent media coverage of the on-going movement and surfacing of historical liquid wastes in a local park, near to residential housing prompted a question about potential IOC involvement. It was noted that the company started operation in Sarnia in the late 1950s and it has not been involved in the use of these sites for disposing wastes.

2.1.5   Resource Conservation
Topic was not specifically covered.

2.1.6   Promotion of Responsible Care by Name
Discussion on this topic is covered in the management system section of this report.

2.2   Team Observations Concerning Stewardship Code
The requirements of the Stewardship Code are addressed by OIMS 2.1, 6.1, 6.4, 6.5 and 5.2, and procedures that operationalize OIMS requirements – such as TAS (Technology Advancement System) and ICAPM (Intermediates Canada Administrative Procedures Manual).

2.2.1   Expectations beyond R&D (93-114)
Through OIMS and procedures under OIMS, IOC meets the expectations of the Stewardship code with respect to the handling and sales of chemical products, and communication of hazard and risk information to second parties (customers, distributors, etc.).

2.2.2   Expectations of Companies with Respect To Other Parties (115 – 124)
Through OIMS and procedures under OIMs, IOC meets the expectations of the Stewardship code with respect to the selection and ongoing assessment of other parties with which it does business (e.g., customers, suppliers, distributors, terminals, tollers).

2.3 Team Observations Concerning Accountability Code

2.3.1 Operating Site Communities
Efforts to improve addressing the requirements of the Accountability Code since 2018 include a Roadmap for community engagement, and the creation of a Public & Government Affairs Manager, based in Sarnia, who reports to the Calgary P&GA department, which provides her with support. A Stakeholder Map is comprehensive and ranks community and business interest by degree of importance. Action Plans under OIMS 10.2 require the Plant Manager and others on the leadership team to regularly meet and be involved in external relations. Social media is the primary communications tool. The P&GA Manager dialogues regularly with members of the local Indigenous community including activists. KPI's include community engagement with social media and the number of and follow up on complaints.

The team lauds IOC for its adoption and rehabilitation of Rainbow Park, and the opportunity that it provides for dialogue with community members during clean-up events and Earth Day.

The Bluewater Community Advisory Panel (BCAP) also provides the company with an opportunity to routinely satisfy some of its requirements for dialogue as well as a venue for discussing the Verification and presenting the report. However, there are no immediate neighbours on BCAP.

BASES is an extremely valuable tool for dissemination of information about environment, health and safety and emergency response in Sarnia-Lambton. IOL was instrumental in getting it together.

The team had the opportunity to have conversations with several community stakeholders.

They consisted of the plant manager of a nearby chemical plant, a City of Sarnia Councillor, a City of Sarnia employee in charge of Emergency Management and the general manager of CAER, IEC (Industrial Education Cooperative) and SLEA (Sarnia-Lambton Environmental Association) and with the general responsibility for Lambton BASES.

Generally, IOC is not differentiated from IOL and is viewed as a good corporate citizen. The importance of CAER performing its mandated actions was emphasized particularly in relation to mutual aid.

IOL/C is viewed as a significant/important part of the community fabric and their recent use of Facebook was lauded and has had good uptake as was demonstrated during the recent tower collapse.

Emergency management coordination by the city is significantly enhanced by CAER and the Mutual Aid Agreement. Communications about issues via MyCNN has facilitated that process greatly.

The BASES (Bluewater Association for Safety, Environment & Sustainability) web initiative has received positive reviews and was brought to fruition by the very strong leadership of IOL and NOVA.

Sarnia-Lambton collective industry initiatives (CAER, IEC, SLEA, CASA (Clean Air Sarnia & Area, real time air quality data), MyCNN (emergency communication tool) are strongly supported by IOL and provide an unprecedented access to support, data, training and information for local residents and anyone else with internet access and an interest.

3. Team Observations on the Company Management System
The company's Operations Integrity Management System (OIMS) is a gold standard for management systems. It covers all aspects of all the types of operation in which the company engages. The system is comprised of 11 sections, each of which has an owner who is responsible for the regular measurement of section performance

and reporting it via Key Performance Indicators (KPIs). Section performance is reviewed annually with senior

management and each section is expected to undertake improvement related to performance as well as systemic issues identified during incident investigation, audits or periodic reviews.

The company's "OIMS to RC Mapping" document is particularly well done. It clearly generally defines (to a very detailed level) which OIMS system or other company program covers Responsible Care requirements as well as providing detailed guidance for Verifiers (and the public) in determining the company's conformance to these requirements.

Given the breadth and depth of OIMS and a team dedicated to the Responsible Care commitment we believe the 'sufficiently' criteria has been met.

> "Is an effective and self-healing management system sufficiently in place for setting and meeting all company goals and is it driving continual improvement?"

However, not everything in the Responsible Care commitment has been put into OIMS nor should it necessarily be included. But these tend to be the areas requiring a more in-depth investigation to determine if the requirements of the company's commitment to Responsible Care are or (importantly) continue to be satisfied.

Our concern with these items relates to a not-necessarily-sustainable ad-hoc or project type effort used to achieve an appropriate Responsible Care outcome. This concern informs our decision to strongly support the rebuilding of the RCMS, described later.

We believe, illustrated by two following examples, that there is a case to be made for the RCSC to develop management systems to cover components of Responsible Care not included in or not easily accommodated by OIMS. When developed it is expected that these systems will follow similar Plan/Do/Check/Act structures as is set out in OIMS. To be clear, IOC minimum requirements are the codes of practice. If a particular item is covered by an OIMS section, it must be equal to or exceed the Responsible Care requirement. If it is identified that that is not the case, then it is expected that an OIMS system will be modified to include the requirement or the RCSC will manage it separately.

Two candidate management system examples are given below (detailed code references are provided in Appendix 3).

Example One:

Operations Code, Safety and Security, Emergency Management

A company must have an emergency response plan that (among many other things):
1. Is based on a risk assessment (OP31)
2. Provides hazard and risk information to ....those in the community who have an interest (OP32)
3. Is regularly communicated to the community (OP36)

Accountability Code, Operating Site Communities

A company must have a plan to:
1. Develop information for responsive and proactive dialogue with the community (including hazard and risk information) (AC129)
2. Regularly dialogue with the community (AC130)

These two sets of requirements, although in two separate areas of Responsible Care are clearly related and require proactive and regular dialogue with the community about hazards, risks and what to do in the event of an emergency. It is understood that the E2 regulation requires dialogue with the community but, although the result is aligned with CIAC requirements, it does not go far enough in that it narrowly defines community and it does not have a frequency provision to satisfy the requirement for "regular" dialogue. As well, the code requirements contain an implied determination of how much uptake there is (Check), by the community, of the

shelter in place concept. Since it is clearly a function of a management system to determine how well the system is functioning, the above two sets of requirements would be candidates to be addressed by a management system within the RCSC.

Example Two:

Promotion of Responsible Care by Name.

This is a CIAC focus area and an important component of a company's commitment to Responsible Care:

> "**Promoting Responsible Care**
>
> CIAC has been recognized by the International Council of Chemical Association (ICCA) as being the world leader in the implementation of Responsible Care. But we have had mixed success to date in making target audiences more aware of the role and significance of our Responsible Care initiative. As an industry we are doing the right things—but we need to do more to ensure we are being seen to do the right things by our target audiences. In other words, some of our central challenges are perception and visibility.
>
> **Achieving brand recognition**
>
> During our review and revision of Responsible Care in 2010, we explicitly emphasized the need to strengthen its visibility. In the new Responsible Care Commitments there is now an overarching principle that obligates member- and partner-companies to promote Responsible Care by name within their companies, value chains, communities and stakeholder networks. Improving the visibility of Responsible Care was also identified as a priority in CIAC's 2012-2015 Triennial Plan. And, in its most recent Challenge Letter (2012) to the industry, CIAC's National Advisory Panel (NAP) urged the association and its membership to be more aggressive in increasing visibility and awareness of Responsible Care."
>
> Promoting Responsible Care®: Implementation and Guidance – CIAC 2013
>
> Also:
> "Promote awareness of Responsible Care, and inspire others to commit to these principles."
>
> Item 8: The Responsible Care® Ethic and Principles for Sustainability

This requirement is present multiple times in all three code areas and it is acknowledged by the team that effective implementation across an entire organization can be a challenge. Nevertheless, it is a requirement with a special CIAC imperative and it is an obvious candidate for a management system under the control of the RCSC. (Note: The "Promoting Responsible Care" document quoted above contains many ideas for strategies and tactics for implementing and improving.)

In Summary

The team acknowledges the effort undertaken in response to the findings from the 2016 verification and is particularly encouraged by the rebuilding of its Responsible Care Management System (RCMS), which is underway within its Responsible Care Steering Committee (RCSC). Given our opinion of OIMS and the rebuilding effort we choose to provide a single Work in Progress for this verification which will be reviewed with great interest at the next verification.

The team has provided a separate document ("Suggestions for RC Steering Committee (RCSC) Management System") containing specific suggestions on various components of this management system.

Work in Progress

It is a work in progress that the Responsible Care Steering Committee is reviewing and building its management systems in order to address all aspects of IOCs commitment to Responsible Care.

4. Team Observations on the Responsible Care Ethic and Principles for Sustainability

The verification team must answer the following question:

> Is the commitment to the Responsible Care Ethic and Principles for Sustainability tangible and does it sufficiently guide the company's judgment, decisions and actions, internally and externally?

It is our opinion that the answer to both parts of the question is yes. Based on our interviews and the comprehensive Imperial Oil Corporate Sustainability report, we believe that IOC is guided by a comprehensive suite of sustainability aspirations.

The company's sustainability report is available here: Corporate sustainability report | Imperial (imperialoil.ca)

Below we've used examples from the Sustainability Report to demonstrate alignment with CIAC's Principles for Sustainability.

One weakness here is "promoting awareness of Responsible Care" which is covered in our suggestions for management system changes above.

Bolded text is from CIAC's Ethic and Principles for Sustainability requirements
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;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- "Community collaboration and engagement" board committee.
- Corporate "Lower-Carbon Energy Future" initiative.
- Supports the Canadian Net-Zero Emissions Accountability Act (net-zero emissions by 2050).
- Imperial's new-to-site worker program helps ensure contractors and employees with less site experience are identified, adequately supervised, trained and mentored to prevent safety incidents.
- We recently rolled out enhanced process safety guidelines and expectations including scenario management, human performance principles and precise execution, to help achieve a step change in process safety performance.
- We are also rolling out key process safety actions to address common exposures and potentially higher-risk activities related to process safety, with particular focus on verifying and rigorously maintaining safeguard health.

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;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- Communicate with the public on environmental matters and share our experience with others to facilitate improvements in industry performance.

Take preventative action to protect health and the environment;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- Our combined employee and contractor total recordable incident rate (TRIR) and lost time incident rate (LTIR) are industry leading. In 2019, Imperial had a TRIR of 0.25 and a LTIR of 0.04.
- Wellness personal spending account (WPSA) to financially support employee focus on well-being as it suits their personal needs and goals.
- Employee and family assistance program (EFAP) for employees and their families with immediate and

confidential support to help resolve work, health and life challenges.

- Workplace flexibility programs in support of work-life balance.
- Encourage respect for the environment, emphasize every employee's responsibility in environmental performance and foster appropriate operating practices and training.
- Conduct and support research to improve understanding of the impacts of our business on the environment, to improve methods of environmental protection and to enhance our capability to make operations and products compatible with the environment.
- The company implements a waste strategy that focuses on (from highest to lowest priority): avoid, reduce, reuse, recover, recycle, treat and dispose. All process waste generated by Imperial must be managed at Imperial-audited facilities to ensure waste is handled responsibly and to minimize potential safety, health and environmental concerns associated with disposal.

Innovate for safer products and processes that conserve resources and provide enhanced value;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- Sustained investment in R&D as technology critical to enable production growth and emissions reduction.
- Advancing digital and AI technologies across the value chain.
- We work to achieve our water management principles by considering local needs and alternatives when sourcing water for our operations, including first identifying and managing risks related to water availability and quality.
- All of Imperial's sites collect information to better understand and minimize our water footprint. Water data is used to facilitate benchmarking and stewardship, to prepare for risk assessment and management reviews and to identify and evaluate continuous improvement opportunities.

Engage with our business partners to ensure the stewardship and security of our products, services and raw materials throughout their life-cycles;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- We identify and evaluate risks associated with new and modified products and their manufacture, use, delivery and disposal. Product safety and health hazard information are also monitored, and any risks requiring specific management processes are communicated to customers, third parties and the public.
- Imperial participates in Responsible Care®, an initiative of the Chemistry Industry Association of Canada (CIAC) that requires CIAC members to dedicate themselves, their technology and their business practices to sustainability — the ongoing betterment of society, the environment and the economy. Many of these strict codes of practice govern the safe and environmentally responsible handling of chemicals throughout their life cycle. At Imperial, these codes are met through OIMS.

Understand and meet expectations for social responsibility;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- $32M invested in Canadian communities in 2019
- 14000 employee volunteer hours

Innovation and Sustainability
- Support Canada's energy transition to a lower-carbon economy
- Solve energy challenges by addressing risks of climate change and make environmental improvements in water, land and air
- Inspire creative thinking and drive innovation in trades, technology and workforce development

Strong Operating Communities
- Provide innovative experiences to youth
- Improve access to education in STEM
- Foster environmental conservation and protection
- Improve quality of life

Indigenous Leadership and Capacity Building
- Supporting women and youth leadership
- Building workforce and business capacity
- Expanding access to traditional learning

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;
From Imperial Oil Corporate Sustainability Report (not specific to Chemicals)
- "Public policy and corporate responsibility" board committee
- "Effective public policy should minimize overall societal costs and allow markets to determine the technologies that will be most successful, while aligning with differing national priorities as well as adapting to new global realities. Sound policy could accelerate the deployment of technologies in support of Canada's NDC* at the lowest cost to society if it:
  - Is sufficiently broad to capture a wide range of technologies;
  - Is technology-neutral;
  - Uses a common approach to assess and quantify benefits;
  - Supports a level playing field for quantification of emissions reductions and associated credit generation; and
  - Facilitates efficient review and approval of projects. Imperial supports an economy-wide price on carbon dioxide emissions as an efficient policy mechanism to address GHG emissions."
(*NDC is Canada's Nationally Determined Contribution to achieve our national greenhouse gas (GHG) reduction target for 2030)

- "Work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs and benefits, including effects on energy and product supply;"

Promote awareness of Responsible Care, and inspire others to commit to these principles.

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 applying that Responsible Care Ethic to the Work in Progress identified during the verification - summarized in "Summary of Verification Team Observations" at the beginning of this report and discussed in detail within the report. The verification is complete and no further involvement is required by the verification team.

Company Response to Verification Team Report

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

IOC was very impressed with the level of engagement by all members of the verification team. IOC was appreciative of the collaborative and transparent approach the verification team took during the preparation, execution and report writing process of this verification.

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

Peter Noble
Polymers Business Manager
Imperial Oil Chemicals
March 7th, 2022

Interview Lists

A: Company Personnel

Name	Position	Location
Peter Nobel	Polymers Business Manager	Calgary
Kristina Zimmer	Public & Government Affairs Manager	Sarnia
Matt Balog	Safety Advisor	Sarnia
Jim Sollen	Environmental and EPS Leader	Sarnia
Carl Macmillan	Capability and Development Leader	Sarnia
Craig Anderson	Fire and Security Leader	Sarnia
Brandon Williams	Safety Advisor	Sarnia
Jeff Eakins	Account Executive	Calgary
Ron Cooke	Rotomolding and Injection Molding Contact	Calgary
Steve White	Operations rep, JHSC member	Sarnia
Jeff Nelson	Operations rep, JHSC member	Sarnia
Doug Wellington	Operations rep, JHSC member	Sarnia
Tom De Jourdan	Laboratory Supervisor	Sarnia
Ed Kelly	Mechanical Second Line Supervisor	Sarnia
David Shimoda	Fleet Supervisor	Toronto

B: External Stakeholders

Name	Position	Location
Peter West	Plant Manager, ARLANXEO	Sarnia
Brian White	City of Sarnia Councilor	Sarnia
Ron Realsmith	City of Sarnia Emergency Manger	Sarnia
Vince Gagner	CAER, IEC and SLEA General Manager	Sarnia

OIMS Sections

1. Management leadership, commitment and accountability

2. Risk assessment and management

3. Facilities design and construction

4. Information/documentation

5. Personnel and training

6. Operations and maintenance

7. Management of change

8. Third-party services

9. Incident investigation and analysis

10. Community awareness and emergency preparedness

11. Operations integrity assessment and improvement

Code of References

OP 31 a. is based on a site-specific risk assessment, which identifies and evaluates on a regular basis those situations where, in the event of an emergency:

• company materials, processes or equipment could have an impact on site and/or on the community;
• external events from technological, natural or other causes could impact site operations;

OP 32 b. provides information from this assessment on hazards and associated risks to employees, other people on site and those in the community who have an interest;

OP 36 f. is communicated regularly, in its key elements, to the community in a manner which recognizes its right to know, in order to gain its co-operation and support;

OP 39 i. ensures on a regular basis that residential and industrial neighbours that could be seriously affected by a site emergency scenario know what action to take should one of these scenarios occur;

AC 129 e) develop and maintain information for both responsive and proactive communication and dialogue with the community, covering products, processes, services, on-site historical waste sites, social impacts, benefits and hazards and associated risks, up to and including worst case scenarios;

AC 130 f) include a regular process of communication and dialogue with the community and response to questions, concerns, suggestions, etc.;

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