

# Responsible Care<sup>®</sup> Verification Report

***NOVA Chemicals***

May 9, 10, 12, 16 and 17, 2022



CHEMISTRY INDUSTRY  
ASSOCIATION OF CANADA



Responsible Care<sup>®</sup>  
Our commitment to sustainability.

## 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<sup>®</sup> 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.

**Responsible Care<sup>®</sup> is a registered trademark of the Chemistry Industry Association of Canada.**

## EXECUTIVE SUMMARY

The ninth verification of NOVA Chemicals, a signatory to the United Nations Global Compact, was conducted virtually on May 9<sup>th</sup>, 10<sup>th</sup>, 12<sup>th</sup>, 16<sup>th</sup>, and 17<sup>th</sup> 2022. The team also met virtually with the Joffre Community Advisory Panel on June 8<sup>th</sup>, 2022, and a Joffre site Joint Health & Safety Committee member on July 19<sup>th</sup>, 2022. The team also utilized questionnaires to interface with third-party service providers and a representative from the INEOS site. The verification focus was Manufacturing West (Joffre, Alberta facility) NOVA Chemicals' Innovation facilities (which incorporates the company's research and development functions) Research and Development and the corporate Head Office (NHO) in Calgary head office.

Specific requested management system focus areas were The Life Saving Rules, Risk Assessments & Compliance and Process Safety Management.

If warranted, this report will reference Findings Requiring Action, Works in Progress, Opportunities for Improvement and Successful Practices.

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 has noted one Finding Requiring Action, six Works in Progress, ten Improvement Opportunities and fifteen Successful Practices.

NOVA employees support and embrace the Ethic of Responsible Care and are knowledgeable in methodologies to apply the Ethic in the day-to-day operation of the company. They are also motivated and engaged in continual improvement of the company's Responsible Care management systems. The CEO and Executive Contact is supportive of the Ethic and engaged in promoting leading edge pragmatic sustainability initiatives for NOVA Chemicals and the company's business associates.

It is notable that 2022 is the fortieth anniversary of the Joffre site Community Advisory Panel (JCAP).

Signed:  December 2, 2022.

For more information on this or a previous Responsible Care Verification Report, please contact your local company site or the company's overall Responsible Care Coordinator: Tinisi Cooper, NOVA Responsible Care Practitioner.

[Tinisi.cooper@novachem.com](mailto:Tinisi.cooper@novachem.com) TEL: (1) 878 207 9450

## SUMMARY OF VERIFICATION TEAM OBSERVATIONS

### NOVA Chemicals requested Focus Areas:

Throughout the report the verification team has commented on the NOVA Chemicals corporate Process Safety Management System (PSM), Risk Assessments and a renewed focus on understanding the technical requirements and importance of adherence to the “Life Saving Rules”.

As a general statement, management systems pertaining to these focus areas are well developed and, in some cases, leading edge.

### Findings Requiring Action:

There is one Finding Requiring Action: To develop a management system for assessing marine carriers utilized by NOVA Chemicals.

### Works in Progress:

1. NOVA Chemicals is transitioning their current RCMS management system to align with RC14001 requirements. This management system was developed based on the Plan, Do, Check, Act (PDCA) continual improvement model supported by the CIAC.

In addition to the management system and framework, there are multiple innovative electronic systems for data management that NOVA is in the process of implementing. These systems include ENABLON for data management and real time reporting and IntelliTrans, a company which provides a global transportation visibility platform to provide real time tracing of rail cars.

2. The company has a corporate initiative to further develop a “Duty of Care” management system which includes worker fatigue and travel time management.

3. The company has a corporate initiative to develop a management system to measure, benchmark and reduce site emissions at the facilities comprising Manufacturing West (MW) and Manufacturing East (ME).

4. ME has an initiative to develop and implement a risk communication management system which will include Michigan residents that could be impacted if a release or spill to the St. Clair River occurs.

5. ME has an initiative to continue to work with the Blue Water Community Advisory Panel (BCAP) to add an additional public member representative from the Corunna area.

6. The company is currently reviewing the risk of nonconformance to the Safety, Health, and Environmental management system “Life Saving Rules” and adjusting the frequency of training to be commensurate with any identified risk.

## Improvement Opportunities

### The team has listed as an Improvement Opportunity:

1. Specific to Manufacturing East from the 2018 verification report. Re: potential site pipeline hazards.

NOVA Chemicals to implement a risk assessment process to identify and manage hazards and risks related to the pipelines that traverse, or are in near proximity, to NOVA sites. This risk assessment will identify potential hazards to the site infrastructure, site employees, and contractors. The risk assessment process shall include attempts to get information related to the ownership, maintenance, and pipeline contents for non-NOVA owned pipelines."

2. Specific to Manufacturing East from the 2018 verification report.

Re: Spot-checking (ground proofing) to ensure the concept of shelter-in-place is understood by residential near neighbours. Responsible Care management systems are developed on the Plan, Do, Check, and Act (PDCA) model. Information provided on this topic during open house and emergency preparedness events is an excellent methodology for completing the "Plan" and "Do" functions of the management system. However, member companies have committed as part of the "Check" function to "ensure 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" (OP39). Also reference MW annual outreach Business Plan, ground proofing methodology and visitation schedule to unique potentially transient locations such as mobile home parks.

### Improvement Opportunities specific to the 2022 verification:

1. To include information, in the Environmental, Social and Governance (ESG) report, referencing the excellent working relationship with the Joffre Community Advisory Panel (JCAP). The additional information should also include the initiatives at Manufacturing East to improve the interfacing process with the Blue Water Community Advisory Panel.

2. To develop Corporate Key Performance Indicators (KPIs) for both cultural and gender diversity.

3. To include, in the next revision of the Supplier Code of Conduct, an overarching Responsible Care statement relating to the Responsible Care Ethic and Commitment and how they address the expectations described in the document.

### Improvement Opportunities Specific to JCAP Interaction:

(Developed during JCAP interviews.)

Reference Appendix 3 for long-term JCAP discussion topics.

### The team has listed as an Improvement Opportunity:

1. To develop, in conjunction with the JCAP and other industry participants, a program to include, as regular JCAP members and participants, high school or college students, enrolled in Responsible Care Verification Report for NOVA Chemicals 5

Science, Technology, Engineering and Mathematics (STEM) related programs, members of agriculture related organizations, or other relevant disciplines.

2. To develop, in conjunction with the JCAP, additional policies and procedures to address traffic flow issues in the area around the Joffre site. (E.g., Mandatory bussing, an improved carpooling incentive, potential staggered worker starting times)

3. To share with other JCAP company members a “safe driver” program like the lifesaving rules initiative.

4. To improve access to information concerning Joffre site unplanned events, such as flaring, and general concerns, for those residents outside the current five-kilometer notification zone.

### **Successful Practices:**

#### **The Team has noted as a successful practice**

1. Town hall meetings are held by the NOVA Chemicals CEO and the CIAC. Executive Contact, in person, at all locations. While other member companies do have a process where their sites interface with the CEO; those meetings tend to be IT based as opposed to the NOVA “in person” process that provides personal interaction opportunities.

2. The CIAC Responsible Care Commitments require that each member company have, in-place, an Accountability Management system to address the need for continuous interface with the public and those, in the public domain, that could be affected by company corporate decisions and manufacturing site operations. This management system must be based on the Plan, Do, Check and Act model of continuous improvement. The Regional Public Affairs Business Plan for Manufacturing West exemplifies this Responsible Care commitment.

3. Responsible Care in Canada has been in-place for thirty-seven years. The forty-year anniversary of the JCAP exemplifies the Joffre site’s commitment the principles of accountability and public interface predating the Canadian Chemical industry’s adaptation of these principles. The JCAP, and its value to the community and NOVA Chemicals has been previously noted in CIAC verification reports. The successful management of this resource is a benchmark for other CIAC member companies.

4. MW actively supports the United Way Day of Caring Program by providing two days, annually, where employees can select one day to work on community support and clean-up projects in the Central Alberta community. NOVA’s Regional Public Affairs team recruits employees to fulfill agency requests. This NOVA employee commitment is a dedicated volunteer day. Volunteers receive their regular daily remuneration for this volunteer service

5. The Manufacturing West initiative of offering elementary school visits which can include classroom information sessions when requested, and in addition, providing educational materials and promotional gifts, made from recycled plastics to the participating students.
6. The research project with a focus on combining virgin raw materials, and recycled plastic, in the polyethylene manufacturing process, as a methodology to reduce overall process related emissions and create a circular economy for plastics.
7. Project STOP is an international frontline initiative to create comprehensive, economically sustainable waste management systems in areas of high plastic leakage into the environment. NOVA Chemicals has made a two-million-dollar investment in Project STOP.
8. The implementation and renewal of the Memorandum of Understanding (MOU) with Alberta Health Services (AHS) which provides allowances to NOVA personnel to respond, within a five km radius of the Joffre site, to 911-generated emergency medical calls. When the Joffre Site is in stable operating condition the MOU allows the Joffre Emergency Services Team to respond to emergency medical situations involving their neighbours. The MOU also gives NOVA Chemicals immediate access to all AHS Emergency Management Services (EMS) provincial resources. Resources including, online medical direction, provincial protocols, additional ambulances, mass casualty resources, and EMS curriculum/training aligned to all of EMS providers in Alberta.
9. The Joffre site maintains and operates an automated risk communication system which allows the site to communicate specific risks with immediate neighbours within the site's Worst Case Scenario Impingement zone.  
The messages are preset and can be adjusted to address specific incidents and the required actions by those potentially affected by the incident. The site has included in annual communications about this alert system, specific areas that might have transitional residents.
10. The generation of a Corporate Environmental Financial Obligation Plan for current and legacy sites and past waste management activities or those that may result from acquisitions or divestitures."
11. The long-term relationship and support for the Red Deer Polytechnic institute programs and initiatives including the on-campus Living Lands Program.
12. The systemic improvement in third-party business management systems by the implementation of the IntelliTrans, TransCAER, NOVAAlert, and NAVEX management system.
13. The annual "Safety Days" event which is a company-wide focus on Safety, Health, and Environmental performance improvements. In addition, the Joffre facility includes a "housekeeping blitz" in the Safety Day activities.

14. The implementation of “fit for duty” program which includes such diverse focus areas as fatigue management related to business travel and on-site driver training requirements. At the time of the verification this program was a work in progress.

15. The Responsible Care orientation implemented by the company has been noted as a Successful Practice. This new employee “on-boarding” encompasses the history of Responsible Care, the involvement of NOVA Chemicals as a founding member of Responsible Care, and the Responsible Care Commitments that underpin NOVA Chemicals operations. The related “on-boarding” course identifies employee expectations and accountabilities as a NOVA employee, in support of this Responsible Care Commitment.

## INTRODUCTION

### About Responsible Care Verification

As a member of the Chemistry Industry Association of Canada (CIAC), the most senior executive responsible for NOVA Chemicals 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, NOVA Chemicals 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 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 <http://www.canadianchemistry.ca> Member companies 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](http://www.canadianchemistry.ca), or by contacting CIAC Responsible Care at [jsteven@canadianchemistry.ca](mailto:jsteven@canadianchemistry.ca) (613) 237-6215 extension 242.

The verification team was comprised of the following individuals.

<b>Name</b>	<b>Affiliation</b>	<b>Representing</b>
<b>Cameron Dillabough</b>	<b>CIAC</b>	<b>Team Leader</b>
<b>Nadine Blaney</b>	<b>CIAC</b>	<b>The Community at Large Representative</b>
<b>David Guss</b>	<b>CIAC</b>	<b>Verifier Consultant</b>
<b>Mark Visscher</b>	<b>Community representative</b>	<b>The Joffre Community</b>

## About NOVA Chemicals:

Headquartered in Calgary, Alberta, NOVA Chemicals has 2,400 employees worldwide with additional executive offices in Pittsburgh, Pennsylvania and operations in Alberta, Ontario, and Louisiana. How plastics are manufactured, used, recycled, and recovered plays a key role in the organization's operations. NOVA Chemicals' employs approximately 200 scientists, engineers, and technologists between its two Calgary-based Innovation Centres, which make up the largest private research facilities in Western Canada. NOVA Chemicals is wholly owned by Mubadala Investment Company of the Emirate of Abu Dhabi, United Arab Emirates.

For additional information visit: [www.novachem.com](http://www.novachem.com)

"NOVA Chemicals is a leading producer of plastics and chemicals that make everyday life healthier, easier, and safer. Guided by a singular purpose to shape a world where the plastic products vital to our health and happiness are better tomorrow than they are today, NOVA Chemicals has a bold ambition to create a plastics circular economy and a low carbon, zero plastic waste future. NOVA Chemicals' portfolio of virgin and recycled resins, along with best-in-class technical expertise provides its customers with chemicals and plastic resins for applications ranging from packaging for food, water, and medical supplies to e-commerce and recreational equipment." [www.novachem.com](http://www.novachem.com)

## About This Verification

This verification of NOVA was conducted virtually on May 9<sup>th</sup>., 10<sup>th</sup>., 12<sup>th</sup>., 16<sup>th</sup>. & 17<sup>th</sup>. 2022. The team also met virtually with the Joffre Community Advisory Panel on June 8<sup>th</sup>. 2022. Third-party service suppliers and a representative from the INEOS site completed questionnaires pertaining to their business relationship with NOVA Chemicals. Attachment #2 lists the company employees and external stakeholders interviewed during the verification. The verification focus was Manufacturing West, (the Joffre Alberta facility), Innovation facilities (which incorporates the company's research and development functions) and Calgary Alberta Corporate offices.

This was the ninth Responsible Care verification of NOVA Chemicals.

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.
2. **Works in Progress** document instances where the verification team has observed the company self-initiating actions in response to identified gaps and deficiency arising from other internal or external audit and review activities, or where the company has self-initiated important improvement opportunities.

3. **Successful Practices** document instances where the team believes the company has taken actions that strongly support sustained excellence in performance, and which should be communicated throughout the CIA membership.

4. **Improvement opportunities** identify instances where the verification team has observed company actions and decision making as being 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

### Team observations concerning the Responsible Care commitments

The 2022 verification of NOVA Chemicals was the Company's ninth verification. The 2022 Social, Environmental and Governance report relates to multiple examples of the company's proactive activities in support of the CIAC Commitments, Benchmarks, and collective expectations.

The reader may review the report at the following address:

<https://www.novachem.com/media-center/publications/>

### Design and Construction of Facilities and Equipment:

The NOVA Chemicals Operations Code Management system is a mature management system that adheres to all process safety management professional standards including pre and post construction risk assessments. While all standard risk management disciplines such as inherent safety and layers of protection are utilized, progressive IT based risk assessment systems such as PHRA Pro and NAVEX have been implemented. Production facilities apply the "hardwired" concept of process alarms and operational unit information technology operation systems have "firewall" protection from malicious intent by potential outside entities.

Based on interviews and team member industry experience, the team would describe the process safety management system to be a benchmark for other CIAC. member companies.

### Operations Activities:

Operational skills requirements, employee training and review, including skills revision and upgrading are in place. A Management of Change (MOC) management system is in place that includes an audit component and procedures for MOC of personnel. Risk management and related Responsible Care maintenance related management systems are in-place with system performance indicators well established. The MW site hosts pilot plants in support of the corporate research and development (R&D) initiative. The required management systems are in place for interface with R&D non-site-based employees including operational employee training, safety management and the transfer of successful research initiatives to the production unit(s).

Two Successful Practices have been noted relating to Operation Activities.

**The Responsible Care orientation, implemented by the company, has been noted as a Successful Practice. This new employee “on-boarding” encompasses the history of Responsible Care, the involvement of NOVA Chemicals as a founding member of Responsible Care and the Responsible Care Commitments that underpin NOVA Chemicals operations. The related “on-boarding” course identifies employee expectations and accountabilities as a NOVA employee, in support of this Responsible Care Commitment.**

**Town hall meetings are held by the NOVA Chemicals CEO and the CIAC Executive Contact, in person, at Manufacturing West and Manufacturing East locations. While other member companies do have a process where their sites interface with the CEO; those meetings tend to be IT based as opposed to the NOVA “in person” process that provides personal interaction opportunities.**

### **Transportation and Physical Distribution:**

While the Joffre site ships intermediate products by pipeline and finished product by road transport the majority of product is shipped in bulk rail cars. There is a corporate management system in place for motor carrier evaluation and pipeline management.

NOVA is in the process of implementing software (IntelliTrans) that is a Global Visibility Platform utilized to locate and manage rail, truck, and ocean shipments. Including rail yard staging areas.

There is also a management system in place to review railcar specifications on a regular frequency to ensure compliance with several jurisdictions in North America. The Joffre site has completed nineteen years without a “non-accidental release” of product during rail shipping operations.

NOVA personnel also voluntarily participate in both the CIAC and Mining Association of Canada Transportation of Dangerous Goods Committee and the CIAC Transportation Emergency Response Service Provider Committee.

One finding Requiring Action and one Successful Practice has been noted in relation to transportation and physical distribution.

**There is a Finding Requiring Action: To develop a management system for assessing marine carriers utilized by NOVA Chemicals (ST116-118).**

**The systemic improvement in third-party business management systems by the implementation of the IntelliTrans, TransCAER, NOVAAlert, and NAVEX management system has been noted as a successful practice.**

## Safety and Security:

Appropriate management systems are in-place to support the Responsible Care Code elements pertaining to Safety and Security. Examples would be the site driver education and enforcement management system and a renewed emphasis on the six “Life Saving rules”. The Life Saving Rules are an overarching management system to achieve the Responsible Care Commitments pertaining to Operations Code OP7. A brief description of these rules includes equipment and permits, ensuring employees are fit for work, never disabling safety-critical equipment, obtaining authorization before entering a confined space, verifying a zero-energy state when working with energized equipment, and obtaining a valid work permit and protecting yourself when working from heights.

Both MW and ME utilize “Planned General Inspection” (PGI) site tours and “Safety Days” as a methodology of combining a site safety audit, risk mitigation and a personnel interface with employees to exchange safety related experiences and as an informational platform to review current, and planned site environmental health and safety objectives. Safety Days can also include external speakers to provide updates on trending issues in the field of safety and risk management.

The verification team has noted a Work in Progress and two Successful Practices in this area.

**The annual “Safety Days” event which is a company-wide focus on Safety, Health, and Environmental performance improvements. In addition, the Joffre facility includes a “housekeeping blitz” in the Safety Day activities.**

**The implementation of “fit for duty” program which includes such diverse focus areas as fatigue management related to business travel and on-site driver training requirements. At the time of the verification this program was a Work in Progress.**

**The verification team has noted as a Work in Progress the Manufacturing East initiative to develop and implement a risk communication management system which will include Michigan residents that could be impacted if a release or spill to the St. Clair River occurs.**

## Emergency Management:

Appropriate and leading-edge management systems are in place for Manufacturing West, which is the focus of this verification. In relation to Manufacturing East, through the auspices of the Sarnia area Blue Water Community Advisory Panel (BCAP) Management systems are in place to support the Responsible Care Commitments pertaining to Emergency Management. However, in relation to OP32&39 the focus tends to be on the Canadian side of the border with the State of Michigan. Through the BCAP, an emergency contact list has been developed to include

United States Department of Homeland Security and Coastguard as well as the Michigan State Environmental Department. What is listed in this report, by the verification team, as a Work in Progress is a management system to comply with OP32 and OP39.

### **Environmental Protection:**

Although singular projects have made progress in the elimination or reduction of emissions and waste the verification team has noted as a Work in Progress the corporate initiative to develop a revised management system to measure, benchmark, and reduce Manufacturing West and Manufacturing East site emissions.

### **Resource Conservation:**

Foundational Topics is the nomenclature for corporate focus areas that pertain to NOVA's management system(s) to address the Responsible Care Commitment to resource conservation. These commitments are promotion of a Circular Economy (recycling & waste reduction), Greenhouse Gas emissions reduction, Air Emissions Reduction, Waste Reduction and Water Conservation.

There are corporate management systems in place to address water conservation and waste reduction. Because of its geographic location, water conservation at the Joffre site has an additional focus. Local watershed volume control is part of the site water conservation management system. There are waste reduction management systems in place and the "Circular Economy" initiative relates to a reduction in natural resources linked to the site manufacturing processes.

The verification team has listed one Successful Practice in this area.

**The research project with a focus of combining virgin raw materials, and recyclable material, in the polyethylene manufacturing process, as a methodology to reduce overall process-related emissions and create a "circular economy" for plastics.**

### **Promotion of Responsible Care by Name:**

The Company has in place a good management system to Promote Responsible Care by Name both internally and externally. This includes the periodic Environmental, Social, and Governance report and Third-Party Service Agreements however, the Team has noted an Opportunity for Improvement related to the Supplier Code of Conduct. While the document has excellent content, Responsible Care is not mentioned until the last section on page five. The verbiage before page five has a direct correlation to Section Three of the Responsible Care Stewardship Codes. The employee training management system, video, and booklet, entitled "RC

Fundamentals” is an excellent training vehicle that includes a tracking system to manage employee course completion and course refresher training.

The verification team has noted one Improvement Opportunity and one Successful Practice in this area.

**The next revision of the Supplier Code of Conduct should include an overarching Responsible Care statement relating to the Responsible Care Ethic and Commitment and how they address the expectations described in the document.**

**The NOVA Chemicals employee Responsible Care training Management System has been noted as a Successful Practice. The Responsible Care orientation and training implemented by the company encompasses the history of Responsible Care, the involvement of NOVA Chemicals as a founding member of the CIAC, and the Responsible Care Commitments that underpin NOVA Chemicals operations. The related “on-boarding” course identifies employee expectations and accountabilities as a NOVA employee, in support of this Responsible Care Commitment.**

#### **TEAM OBSERVATIONS CONCERNING STEWARDSHIP CODE**

As noted in the Stewardship Code preamble; “The expectations of this code shall be met in the context of sustainability and managing risk for the betterment of society, the environment, and the economy”. NOVA Chemicals overarching corporate management system to address this commitment is entitled “Business Partner Due Diligence Policy”.

NOVA Chemicals also has in place appropriate management systems to comply with the additional Stewardship Code Commitments. These management systems include the NAVEX third-party due diligence and code of conduct that references Stewardship Code section #3, “Expectations of Companies with Respect to Other Parties” (ST115-124).

The verification team has noted one Finding Requiring Action and one Successful Practice in this area.

**There is a Finding Requiring Action To develop a management system for assessing marine carriers utilized by NOVA Chemicals (ST116-118)**

**The systemic improvement in third-party business management systems by the implementation of the IntelliTrans, TransCAER, NOVAalert, and NAVEX management system.**

#### **Research and Development (R&D) Expectations:**

Below is a direct quote from the NOVA Chemicals Environment, Social, and Governance report.

“We believe that sustainability and Responsible Care standards must be at the core of everything we do. This commitment to environment, social, and governance matters aligns with our purpose of shaping a world where the products vital to our lives are better tomorrow than they are today. By addressing our most relevant ESG topics, we can create value for our company, our suppliers, and our customers. These efforts to care for people and the environment also contribute to solutions for specific global challenges, as embedded in the United Nations Sustainable Development Goals (SDGs)”.

The NOVA Chemicals 2A research laboratory is certified by the Canadian Association for Laboratory Accreditation for ISO 17025:2017 and has a Chemical Hygiene Management System in place. The PE1 and PE2 pilot plant units, at the Joffre site, are certified to ISO9001:2015 Quality Management Standard and have a Quality Services Chemical Hygiene Management System in place.

### **Expectations Beyond R&D:**

#### **FOUNDATIONAL TOPICS:**

Foundational Topics are corporate focus areas that pertain to NOVA’s management system(s) to address this Responsible Care Commitment which are promotion of a Circular Economy (recycling & waste reduction), Greenhouse Gas emissions reduction, Air Emissions Reduction, Waste Reduction and Water Conservation.

Reference: <https://www.novaesgreport>

### **Communication Through the Value Chain:**

The web address shown below is an example of a NOVA Chemicals Code of Conduct (suppliers) management system that demonstrates compliance with Stewardship Codes ST 104-110.

<https://www.novachem.com>sustainability>

## **TEAM OBSERVATIONS CONCERNING ACCOUNTABILITY CODE**

### **Operating Site Communities:**

In relation to Manufacturing West, NOVA has developed, and reviews on an annual basis, a comprehensive Regional Public Affairs Business Plan to ensure all annual community contact initiatives are completed and recorded.

On June 8 2022, the verification team held a one-hour virtual meeting, in-camera, with the JCAP. The meeting was informative, and it was apparent that CAP members are experienced, well informed and the CAP and NOVA Chemicals have developed a “symbiotic” relationship to the benefit of the Joffre community and the surrounding rural neighbours of the NOVA Joffre

site. JCAP members have a direct line of contact with the NOVA Regional Public affairs Specialist or the Joffre Site Vice President of Manufacturing.

The following is an example of the comprehensive nature of the Regional Public Affairs Business Plan. The Joffre Mobile Home Park is a housing complex in the hamlet of Joffre. These developments tend to have an “itinerate” component and a NOVA Chemicals outreach focus group annually visits the residents of this park to ensure they know what action is required in the event of a site emergency. The area alert siren in Joffre is tested regularly.

The team has noted one Work in Progress and three Successful Practices in this area.

**As a Work in Progress, Manufacturing East has an initiative to continue to work with the Blue Water Community Advisory Panel (BCAP) to add a public member representative from the Corunna area.**

**The implementation and renewal of the Memorandum of Understanding (MOU) with Alberta Health Services (AHS) which provides allowances to NOVA personnel to respond, within a five km radius of the Joffre site, to 911 generated emergency medical calls has been noted as a Successful Practice. The MOU is in effect when the Joffre Site is in stable operating condition and allows the Joffre Emergency Services Team to respond to emergency medical situations involving their neighbors. The MOU also gives NOVA Chemicals immediate access to all AHS EMS provincial resources. Resources including, online medical direction, provincial protocols, additional ambulances, mass casualty resources, and EMS curriculum/training aligned to all of EMS providers in Alberta.**

**Responsible Care in Canada has been in place for thirty-seven years. As a Successful Practice, the forty-year anniversary of the JCAP exemplifies the Joffre site’s commitment the principles of accountability and public interface predating the Canadian Chemical industry’s adaptation of these principles. The JCAP, and its value to the community and NOVA Chemicals has been previously noted in CIAC verification reports. The successful management of this resource is a benchmark for other CIAC member companies.**

**The CIAC Responsible Care Commitments require that each member company have, in-place, an Accountability Management system to address the need for continuous interface with the public and those, in the public domain, that could be affected by company corporate decisions and manufacturing site operations. This management system must be based on the Plan, Do, Check and Act model of continuous improvement. As a Successful Practice, the Regional Public Affairs Business Plan for Manufacturing West exemplifies this Responsible Care commitment.**

The verification team has also noted below six discussion topics and projects that can serve as information requested agenda items for future JCAP and/or public meetings or joint improvement projects for company and JCAP members.

**Reference Appendix 3 for additional long-term JCAP discussion topics.**

- 1. To develop, in conjunction with the JCAP and other industry participants, a program to include, as regular JCAP members and participants, high school or college students, enrolled in Science, Technology, Engineering and Mathematics (STEM) related programs, members of agriculture related organizations, or other relevant disciplines.**
- 2. To develop, in conjunction with the JCAP, additional policies and procedures to address traffic flow issues in the area around the Joffre site. (E.g., Mandatory bussing, an improved carpooling incentive, potential staggered worker starting times)**
- 3. To improve the availability of Joffre site contact information, in relation to flaring and other concerns, for those residents outside the five-kilometer notification zone.**
- 4. To expand the “reach” of the Joffre Site Operations Information Hotline (JSOIL). Also, potentially with the cooperation of other area industries, provide a single update.**

## **Other Stakeholders:**

### **APPENDICES TO CODES: SOCIAL RESPONSIBILITY**

The NOVA Responsible Care Department develops, on an annual basis, a matrix of specific continual improvement objectives and Key Performance Indicators that align with the Responsible Care Environmental, Social, and Governance report focus areas.

**As a Work in Progress Manufacturing East has an initiative to continue to work with the Blue Water Community Advisory Panel (BCAP) to add an additional public member representative from the Corunna area.**

**The verification team has listed as an Improvement Opportunity to provide information in the Environmental, Social and Governance (ESG) report that references the excellent working relationship between the Joffre site and the Joffre Community Advisory Panel (JCAP). ME has an initiative to continue to work with the Blue Water Community Advisory Panel (BCAP) to add a public member representative from the Corunna area.**

**The verification team has listed as an Improvement Opportunity, the inclusion of cultural and gender diversity as a future Corporate KPI.**

The verification team has noted as a Successful Practice, the generation of a Corporate Environmental Financial Obligation Plan for current and legacy sites, and past waste management activities that may result from acquisitions or divestitures.

The verification team has noted as a Successful Practice the long-term relationship and support for the Red Deer Polytechnic institute programs and initiatives.

The verification team has noted as a Successful Practice the Joffre site initiative of offering elementary school visits which can include classroom information sessions when requested, and in addition, providing educational materials and promotional gifts, made from recycled plastics to the participating students.

The team encourages the revival of this Successful Practice as social health related restrictions are rescinded.

The verification team has noted as a Successful Practice the MW active support of the United Way Day of Caring Program by providing two days, annually, where employees can select one day to work on community support and clean-up projects in the Central Alberta community. Regional Public Affairs recruits employees to fulfill agency requests. This NOVA employee commitment is a dedicated volunteer day with pay.

## **APPENDICES TO CODES: INVOLVEMENT IN PUBLIC POLICY PROCESS**

As quoted from the NOVA Chemicals ESG report.

### **Management Approach: How We Get Involved in Public Policy.**

“We actively participate in regulatory advocacy through trade associations in jurisdictions where we have manufacturing operations”. We are members of the following industry associations: Chemistry Industry Association of Canada & Business Council of Canada.

- Canadian Manufacturers and Exporters & Resource Development Council.
- Plastics Alliance of Alberta and
- The Alberta Plastics Recycling Association

We also directly and collaboratively engage with regulators on critical issues to assist them in their efforts to protect human health and the environment. The Canadian federal *Lobbying Act*, the Alberta *Lobbyists Act*, and the Ontario *Lobbyists Registration Act* guide our lobbying activities. We have an internal lobbying policy and provide training for any executives or employees who are likely to interact with government officials. We track and, as required, make publicly available any lobbying activities that are directly focused on policies, programs, and regulations. In the U.S., we rely on industry and trade associations and select lobbying firms to advocate on our behalf.

## TEAM OBSERVATIONS ON THE COMPANY MANAGEMENT SYSTEM

The NOVA Chemicals Responsible Care management system, based on the Plan, Do, Check and Act model is a mature system that fulfills the expectations of CIAC Responsible Care management requirements.

These systems include ENABLON for data management and near real time reporting, IntelliTrans is a company which provides a global transportation visibility platform to provide real time tracing of rail cars.

NAVIX a third-party selection and monitoring software, ISNET a world-wide waste contractor selection and tracking software, and IH400 a standardized industrial hygiene management software.

## TEAM OBSERVATIONS ON THE RESPONSIBLE CARE ETHIC AND PRINCIPLES FOR SUSTAINABILITY

**NB: the verification team found ample evidence during the 2022 verification to support the information quoted from the 2020 ESG report.**

### ***WORK FOR THE IMPROVEMENT OF PEOPLE'S LIVES AND THE ENVIRONMENT, WHILE STRIVING TO DO NO HARM:***

The NOVA Chemicals approach to this “Principle” is to consider both expectations of this Responsible Care Principle.

There is a structured focus on their manufacturing processes to reduce harm to the environment and, in addition, generously implementing and supporting community organizations, promoting an employee volunteer “ethic”, supporting public and nature interface access areas, local Indigenous communities and STEM related educational initiatives.

During the pandemic crisis NOVA Chemicals focused on promoting and enabling employee assistance and donating products and or intermediate chemicals to aid in the overall work of lessening the pandemic stressors for their employees and health authorities.

### ***BE ACCOUNTABLE AND RESPONSIVE TO THE PUBLIC, ESPECIALLY TO OUR LOCAL COMMUNITIES, WHO HAVE THE RIGHT TO KNOW THE RISKS AND BENEFITS OF WHAT WE DO:***

This expectation has been noted as Successful Practice by the verification team. Particularly at Manufacturing West, the management system governing this activity is a comparison standard for other CIAC member companies.

### ***TAKE PREVENTATIVE ACTION TO PROTECT HEALTH AND THE ENVIRONMENT:***

Examples of achievements from the 2020 ESG report in relation to this Principle:

“In 2020, there continued to be air quality improvements from projects we had completed in previous years. These included:

**JOFFRE, ALBERTA:** We completed the replacement of eight furnaces at this site. Improvements to upgrade and modernize the furnaces and burners have reduced nitrous oxide emission from

each furnace by thirty percent, for a total reduction of approximately two hundred tonnes of nitrous oxide (NOx) per year. We project that the proposed polyethylene facility “flaring” reduction project will reduce volatile organic compounds (VOC) emissions by approximately one hundred tonnes annually.”

**“MOORE, (SARNIA) ONTARIO:** In 2020 there was a reduction, at this site, of volatile organic compound(s) emissions (VOC) from the 2018 levels because of the regenerative thermal oxidizer project which was designed to oxidize off-gases resulting from the production of polyethylene.”

***INNOVATE FOR SAFER PRODUCTS AND PROCESSES THAT CONSERVE RESOURCES AND PROVIDE ENHANCED VALUE:***

The research project with a focus of combining virgin raw materials, and recyclable material, in the polyethylene manufacturing process, as a methodology to reduce overall process related emissions and create a “circular economy” for plastics.

***ENGAGE WITH OUR BUSINESS PARTNERS TO ENSURE THE STEWARDSHIP AND SECURITY OF OUR PRODUCTS, SERVICES AND RAW MATERIALS THROUGHOUT THEIR LIFE CYCLES:***

***Internal & third-party screening:*** We use an internal screening process and a third-party service provider to rate the risks associated with our business partners (i.e., suppliers, customers, distributors). Screening criteria include trade-prohibited countries, denied parties (according to relevant government agencies), and value of the business arrangement.

***Supply chain risk exposure evaluation:*** Our Supply Chain Risk Exposure Evaluation Network (SCREEN) is a cross-functional team that assists and supports our commercial and logistics functions in identifying and managing risks associated with the transportation and storage of products in the supply chain.

***Security Programs:*** To help ensure the security of our international supply chain, we are a registered partner in the U.S. Customs Trade Partnership Against Terrorism (CTPAT) and the Canada Border Services Agency’s Partners in Protection program.

***UNDERSTAND AND MEET EXPECTATIONS FOR SOCIAL RESPONSIBILITY:***

***Four examples from the 2020 report:***

***Inclusion & diversity:***

NOVA Chemicals is committed to building an inclusive and equitable culture and achieving diverse representation in our workforce. In 2020, we developed five strategic pillars that will guide our future work. Building an inclusive culture, attracting, and retaining diverse talent, differentiating the employee experience, developing robust inclusion and diversity governance, and engaging with the community and external partners:

***Employee & Contractor Safety:***

Promoting visible safety leadership and reinforcing life-saving rules.

**Consumer safety:**

Undertook post-consumer resin testing, updated the medical use policy, and expanded our automated hazard communications to include countries outside North America.

**Transportation Safety:**

In 2020, in response to new Canadian legislation, we implemented an internal Transportation Security Plan to address transportation security risks for rail, road, and marine transport including prevention, mitigation, and preparedness.

In addition to meeting all applicable Canadian regulatory and chemistry industry requirements, our Transportation Security Plan meets similar hazardous materials regulations in the U.S.

**Employee Health & Well Being:**

**Flexible work opportunities:** Our Alternative Work Arrangements program offers options such as variable work hours, job sharing, and phased retirement, where work functions allow.

In 2020, we also developed our Connected Workplace Policy that establishes clear expectations for leaders and employees in office-based or home-office positions to ensure they collaborated effectively and stayed connected while working from home. It includes eligibility criteria, expectations, and accountabilities (such as work hours, protection of company assets, and ergonomics) for employees working from home.

**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:**

The NOVA Chemicals management system(s), both at the corporate and local level, exceeds expectations in relation to this Principle. Please see a detailed description on page 20 of this report.

**PROMOTE RESPONSIBLE CARE® AND INSPIRE OTHERS TO COMMIT TO THESE PRINCIPLES:**

**Enhanced Responsible Care® Outreach Program:** Our Responsible Care Outreach Program was initially designed to help existing customers and stakeholders adopt Responsible Care principles. In 2020, we took a more proactive approach and began using our Responsible Care Outreach engagement tools to evaluate olefins customers prior to entering business relationships with them. We also incorporated automated continuous monitoring of our stakeholders (for example, following media stories), to ensure adoption of our Responsible Care principles. Finally, we began centralizing data management for this program to improve efficiencies and analytical capabilities

**Verification Team Conclusion**

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. With the issue of this report to the Company and the CIAC, for posting on the Association public website, the 2022 verification of NOVA Chemicals will be complete.

## **APPENDIX 1: COMPANY RESPONSE TO VERIFICATION REPORT**

### **COMPANY RESPONSE TO VERIFICATION TEAM REPORT**

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

NOVA Chemicals appreciates the candor, enthusiasm and knowledgeable guidance offered by the verification team throughout the process. We appreciate the engagement of our local community representatives for their contribution to this verification and their ongoing involvement in our relationship with local communities. The challenging and thought-provoking discussions with the verifiers help drive continuous improvement in our programs and overall approach to Responsible Care. Similarly, the positive comments and recognition of Successful Practices provide external validation and reinforcement of our work.

NOVA Chemicals will communicate the results of the verification with its CIAC peers and will discuss the verification results with our stakeholders, including those representing communities near our operating sites. We will consider the Improvement Opportunities identified by the verification team and will assist the CIAC in communicating and sharing the identified Successful Practices to other CIAC members. The improvement opportunities will be discussed by the verification team and for those identified as providing value to the community, employees, and the company, action plans will be developed and implemented. Our progress in implementing those action 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.”

James Baldwin  
Responsible Care Leader  
NOVA Chemicals  
November 30th, 2022

## Appendix 2: Interview Lists

### A: Company Personnel Contacted During Verification Process

Name	Position	Location
LUIS SIERRA	CEO, NOVA Chemicals	CALGARY
JAMES BALDWIN	DIRECTOR, RESPONSIBLE CARE	CALGARY
JENNIFER JACKSON	LEADER, RESPONSIBLE CARE GOVERNANCE AND SYSTEMS	CALGARY
STAN KITA	LEADER, CYBERSECURITY	CALGARY
KAMAL HAIDER	JHSC WORKER REPRESENTATIVE	JOFFRE
LINDA NAGATA	ADVISOR, RESPONSIBLE CARE IMPLEMENTATION	RED DEER
SHANE LAMDEN	ADVISOR, ENVIRONMENT	RED DEER
PATRICK AHERNE	DIRECTOR, INTERNAL AUDT & RISK	CALGARY
SARAH MARSHAL	V.P. OF SUSTAINABILITY	CALGARY
MEHDI KESHTKAR	V.P. OF INOVATION	CALGARY
BILL SANTOS	DIRECTOR FUTURE FOCUS, INOVATION	CALGARY
CLAIRE ENNIS	LEADER, SAFE, RELIABLE & COMPETITIVE INOVATION & OPERATION	CALGARY
JUHA PAAVILAINEN	LEADER, OPERATIONS-INOVATION	
BARB HALL	LEADER, TECHNICAL SCALE, RESPONSIBLE CARE, INOVATION & FACILITY SERVICES	CALGAY
KEVIN KERIK	LEADER, SAFETY, OCCUPATIONAL HEALTH & INDUSTRIAL HYGIENE	CALGARY
BECKY HORVATH	LEADER, ENVIRONMENTAL AFFAIRS	CALGARY
KATHY BRODIE	COORDINATOR, OCCUPATIONAL SAFETY MW	JOFFRE
SHERRY VINCENT	COORDINATOR, OCCUPATIONAL HEALTH & INDUSTRIAL HYGIENE.	JOFFRE
FRED HENSELWOOD	MANAGER, PROCESS SAFETY	CALGARY
CAROLINE HARRINGTON	LEADER, PROCESS SAFETY & PROCESS TECHNOLOGY	JOFFRE
BOB HUGGETT	MANAGER, RC ASSURANCE	SARNIA
JOSH CAVANAGH	SENIOR ADVISOR, PRODUCT STEWARDSHIP	CALGARY
AMY GEORGE	SPECIALIST, RESPONSIBLE CARE RISK & COMPLIANCE	CALGARY
RYAN McKIEL	SPECIALIST, RESPONSIBLE CARE	CALGARY
GWEN CLARK	SPECIALIST, REGIONAL PUBLIC AFFAIRS	JOFFRE
CAROLYN ROSE-MARTINDALE	SPECIALIST, COMPLIANCE	CALGARY
DARRYL STEBNER	LEADER, RESPONSIBLE CARE	JOFFRE
CHRISTIAN LAMOUREUX	SPECIALIST, EMERGENCY SERVICES	JOFFRE
ANDREA BRACK	COORDINATOR, ENVIRONMENT	JOFFRE
COLIN INGLIS	COORDINATOR, EMERGENCY SERVICES & SECURITY	JOFFRE
SCOTT BUCKLEY	TEAM LEADER, UTILITIES & OFF-PLOTS	JOFFRE

<b>BILL GUTSCHE</b>	<b>LEADER, U&amp;O PRODUCTION</b>	<b>JOFFRE</b>
<b>JANETH LIENDO</b>	<b>TEAM LEADER, PE1 ENGINEERING</b>	<b>JOFFRE</b>
<b>LANCE FORSBERG</b>	<b>TEAM LEADER, PE1 &amp; AST1 ENGINEERING</b>	<b>JOFFRE</b>
<b>WAYNE MACKENZIE</b>	<b>LEADER, MAINTENANCE</b>	<b>JOFFRE</b>
<b>RODNEY DIETRICH</b>	<b>SPECIALIST, ENVIRONMENT</b>	<b>JOFFRE</b>
<b>JULIA LACOVELLA</b>	<b>SPECIALIST, REGIONAL PUBLIC AFFAIRS</b>	<b>SARNIA</b>
<b>HEIDI LADANCHUCK</b>	<b>SPECIALIST, INDUSTRIAL HYGIENE</b>	<b>SARNIA</b>

## B: External Stakeholders Contacted During Verification Process

<b>NAME</b>	<b>POSITION</b>	<b>LOCATION</b>
<b>MIKE FOSYTH</b>	<b>JCAP</b>	<b>JOFFRE A.B.</b>
<b>ERIC PETERS</b>	<b>JCAP</b>	<b>JOFFRE A.B.</b>
<b>KEN BORDEN</b>	<b>JCAP</b>	<b>JOFFRE A. B.</b>
<b>KATHY PYPER</b>	<b>JCAP</b>	<b>JOFFRE A.B.</b>
<b>INEOS (QUESTIONNAIRE)</b>		<b>JOFFRE SITE LOCATION</b>
<b>G3 TRUCKING (QUESTIONNAIRE)</b>		
<b>CERGOFLO (QUESTIONNAIRE)</b>		

### Appendix 3:

#### JCAP discussion topics:

1. In consultation with the verification team local community representative and JCAP member, the following discussion and informational topics are presented as potential JCAP action points or discussion topics.
2. An annual review of the CIAC. Responsible Care Ethic and Principles for Sustainability and how they influence annual key performance indicators (KPIs).
3. Share/review the NOVA Chemicals ESG report and annual objectives/KPIs.
4. Review, annually, NOVA’s Emergency Response (CAER) partnerships. Lacombe Mutual Aid, Northeast Region Community Awareness and Emergency Response (NRCAER) mutual aid for pipelines, and the Parklands Airshed Management Zone (PAMZ).
5. Review/reference the Process Safety Management (PSM) disciplines of “inherent safety” and “Layers of Protection”.
6. Review the site buffer zone(s). How they are established and potentially changed based on risk.
7. Develop “decarbonization” targets to be included in public information and disclosure venues as a methodology to gain public support and understanding of the NOVA Chemical efforts in this area.



**Responsible Care<sup>®</sup>**  
Our commitment to sustainability.

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