



SUNCOR ENERGY PRODUCTS INC.

---

ST. CLAIR ETHANOL PLANT  
535 ROKEBY LINE  
MOORETOWN, ONTARIO  
N0N 1M0  
TEL (519) 481-0454

# 2011 TOXICS REDUCTION ACT

## Toxic Substance Reduction Plan Summaries

Suncor Energy Products Incorporated  
(St. Clair Ethanol Plant)  
535 Rokeby Line  
Mooretown, Ontario  
N0N 1M0

December 12, 2012



## Version Control

Version	Date Issued	Modifications
Update	December 12, 2012	Original version made available to the public and employees December 31, 2012

# Table of Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>3</b>
1.1	Toxic Substances .....	3
<b>2.0</b>	<b>GENERAL FACILITY INFORMATION .....</b>	<b>4</b>
<b>3.0</b>	<b>SUBSTANCE REPORTING .....</b>	<b>5</b>
3.1	Acetaldehyde.....	5
3.2	Sulphuric Acid.....	6
3.3	Methanol (Methyl Alcohol, Wood Alcohol) .....	7
3.4	Naphthalene .....	8
3.5	Ethyl Benzene .....	9
3.6	Toluene .....	10
3.7	Xylene .....	11

## LIST OF ATTACHMENTS

### **ATTACHMENT 1: CERTIFICATION STATEMENTS**

## 1.0 INTRODUCTION

Suncor Energy Products Inc. (Suncor) operates an ethanol production plant, designated the St. Clair Ethanol Plant, to supply ethanol for blending with their gasoline products. Ethanol provides a cleaner burning fuel blend and displaces gasoline for transportation. Protection of the environment is a fundamental Suncor value. It is our responsibility to determine and manage the impacts of our business through programs like the Toxics Reduction Act.

These toxics substance reduction plan summaries have been prepared to meet the regulatory obligations specified in Section 8 of the Act and has been prepared in accordance with the requirements of s. 24 of Ontario Regulation (O. Reg.) 455/09, as amended from time to time. It meets the relevant reporting requirements and will be updated, as required by the Act and O. Reg. 455/09.

For more information on the Toxics Reduction Act and O. Reg. 455/09 visit: [http://www.ene.gov.on.ca/environment/en/legislation/toxics\\_reduction\\_act/index.htm](http://www.ene.gov.on.ca/environment/en/legislation/toxics_reduction_act/index.htm).

## 1.1 Toxic Substances

Toxic substance reduction plan summaries have been developed for the following substances and are provided in the appendices:

- Acetaldehyde, CAS No. 75-07-0
- Sulphuric acid, CAS No. 7664-93-9
- Methanol, CAS No. 67-56-1
- Naphthalene, CAS No. 91-20-3
- Ethyl benzene CAS No. 100-41-4
- Toluene, CAS No. 108-88-3
- Xylene, CAS No. 1330-20-7

## 2.0 GENERAL FACILITY INFORMATION

Table 1 summarizes the general facility information with reference to the Act and/or O. Reg. 455/09.

**Table 1: General Facility Information**

Reporting Requirement	Facility Information	Reference to Act and/or O. Reg. 455/09
Parent Company Name	Suncor Energy Products Inc.	O. Reg. 455/09 s.18(2) subparagraph 14
Parent Company Address	P.O. Box 2844 150 – 6 Ave. S.W. Calgary, Alberta, CAN T2P 3E3	O. Reg. 455/09 s.18(2) subparagraph 14
Facility Name	St. Clair Ethanol Plant	O. Reg. 455/09 s.18(2) subparagraph 4
Facility Address	535 Rokeby Line Mooretown Ontario N0N 1M0	O. Reg. 455/09 s.18(2) subparagraph 4
Universal Transverse Mercator (UTM) in North American Datum (NAD83)	17T Zone 383480m E, 4745500m N	O. Reg. 455/09 s.18(2) subparagraph 13
National Pollutant Release Inventory Identification Number	11444	O. Reg. 455/09 s.18(2) subparagraph 2
Ontario Regulation 127/01 Identification Number	N/A	O. Reg. 455/09 s.18(2) subparagraph 3
Two Digit North American Industry Classification System (NAICS) Code	32 – Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Four Digit North American Industry Classification System (NAICS) Code	3251 – Basic Chemical Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Six Digit North American Industry Classification System (NAICS) Code	325190 – Other Basic Chemical Organic Manufacturing	O. Reg. 455/09 s.18(2) subparagraph 6
Number of Full-time Employee Equivalents at the Facility	62	O. Reg. 455/09 s.18(2) subparagraph 5
Facility Public Contact	Jack Wysman Manager, Environmental, Health & Safety 535 Rokeby Line, Mooretown, ON N0N 1M0 Canada Email: <a href="mailto:jwysman@stclairethanol.com">jwysman@stclairethanol.com</a> Phone: (519) 481-0454 Fax: (519) 862-4008	O. Reg. 455/09 s.18(2) subparagraph 7

### 3.0 SUBSTANCE REPORTING

The following sections provide a summary of each of the seven (7) Toxic Substance Reduction Plans that have been developed for the St. Clair Ethanol Plant.

#### 3.1 Acetaldehyde

Substance Name and CAS #	Acetaldehyde; 75-07-0
Substances for which other plans have been prepared	Methanol, Sulphuric Acid, Naphthalene, Ethyl Benzene, Toluene & Xylenes
Beneficial Uses at Facility	No beneficial uses.
Previously Implemented Reduction Activities	The St. Clair Ethanol Plant has previously implemented the following reduction activities: <ul style="list-style-type: none"><li>• Sodium bisulfite is used to control odour; side benefit is the possible reduction in acetaldehyde.</li><li>• Containment and runoff monitoring program; closed loop system.</li></ul>

#### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the creation of acetaldehyde because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing acetaldehyde emissions to the environment.

#### Plan Objectives

The objective of this plan is to reduce the emissions of acetaldehyde by implementing the technically and economically feasible reduction options.

#### Description of Substance

There is no acetaldehyde that arrives at the facility within any products. Acetaldehyde is created within the fermentation process during the production of ethanol.

#### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the creation of acetaldehyde because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing acetaldehyde emissions to the environment.

#### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for acetaldehyde, prepared by Suncor Energy Products Inc., dated December 12, 2012.

## 3.2 Sulphuric Acid

Substance Name and CAS #	Sulphuric Acid; 7664-93-9
Substances for which other plans have been prepared	Acetaldehyde, Methanol, Naphthalene, Ethyl Benzene, Toluene & Xylenes
Beneficial Uses at Facility	Used to adjust pH within fermenters (less stress on yeast = less acetaldehyde).
Previously Implemented Reduction Activities	<p>The St. Clair Ethanol Plant has previously implemented the following reduction activities:</p> <ul style="list-style-type: none"> <li>• Containment and runoff monitoring program; closed loop system; protected connections/flanges.</li> <li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li> <li>• Procedures implemented for safe offloading; check sheet system to ensure delivery to correct vessel.</li> </ul>

### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of sulphuric acid because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing sulphuric acid emissions to the environment.

### Plan Objectives

The objective of this plan is to reduce the emissions of sulphuric acid by implementing the technically and economically feasible reduction options.

### Description of Substance

Sulphuric acid arrives at the facility within a raw material. There is no sulphuric acid created within the process.

### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of sulphuric acid because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing sulphuric acid emissions to the environment.

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for sulphuric acid, prepared by Suncor Energy Products Inc., dated December 12, 2012.

### 3.3 Methanol (Methyl Alcohol, Wood Alcohol)

Substance Name and CAS #	Methanol; 67-56-1
Substances for which other plans have been prepared	Acetaldehyde, Sulphuric Acid, Naphthalene, Ethyl Benzene, Toluene & Xylenes
Beneficial Uses at Facility	Methanol is a component of the DCI-11 Corrosion Inhibitor that is added to ethanol.
Previously Implemented Reduction Activities	<p>The St. Clair Ethanol Plant has previously implemented the following reduction activities:</p> <ul style="list-style-type: none"> <li>• Switched to different corrosion inhibitor so less was required but switched back because it had a negative impact on PHE which did not meet performance specs.</li> <li>• Containment and runoff monitoring program; closed loop system.</li> <li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li> <li>• Drivers &amp; operations personnel are trained to properly load &amp; unload chemicals as well as to respond to emergency spill situations.</li> </ul>

#### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use or creation of methanol because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing methanol emissions to the environment.

#### Plan Objectives

The objective of this plan is to reduce the emissions of methanol by implementing the technically and economically feasible reduction options.

#### Description of Substance

Methanol arrives at the facility within the DCI-II Corrosion Inhibitor. Methanol is also created during ethanol production within the fermentation process.

#### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use or creation of methanol because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing methanol emissions to the environment.

#### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for methanol, prepared by Suncor Energy Products Inc., dated December 12, 2012.



### 3.4 Naphthalene

Substance Name and CAS #	Naphthalene; 91-20-3
Substances for which other plans have been prepared	Acetaldehyde, Sulphuric Acid, Methanol, Ethyl Benzene, Toluene & Xylenes
Beneficial Uses at Facility	<ul style="list-style-type: none"> <li>• Naphthalene is a component of the gasoline that is added to ethanol as required by Excise Act.</li> <li>• Denatured ethanol produced by SCEP is sold to the gasoline industry.</li> </ul>
Previously Implemented Reduction Activities	<p>The St. Clair Ethanol Plant has previously implemented the following reduction activities:</p> <ul style="list-style-type: none"> <li>• Minimized the amount of gasoline added to meet requirements and reduce the usage of toxics themselves.</li> <li>• Containment and runoff monitoring program; closed loop system.</li> <li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li> <li>• Drivers &amp; operations personnel are trained to properly load &amp; unload chemicals as well as to respond to emergency spill situations.</li> <li>• Only deal with dedicated suppliers.</li> </ul>

#### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of naphthalene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing naphthalene emissions to the environment.

#### Plan Objectives

The objective of this plan is to reduce the emissions of naphthalene by implementing the technically and economically feasible reduction options.

#### Description of Substance

Naphthalene arrives at the facility within the denaturant. There is no naphthalene created within the process.

#### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of naphthalene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing naphthalene emissions to the environment.

## Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for naphthalene, prepared by Suncor Energy Products Inc., dated December 12, 2012.

### 3.5 Ethyl Benzene

Substance Name and CAS #	Ethyl Benzene; 100-41-4
Substances for which other plans have been prepared	Acetaldehyde, Sulphuric Acid, Methanol, Naphthalene, Toluene & Xylenes
Beneficial Uses at Facility	Ethyl Benzene is a component of the gasoline that is added to ethanol as required by Excise Act. Denatured ethanol produced by SCEP is sold to the gasoline industry.
Previously Implemented Reduction Activities	<p>The St. Clair Ethanol Plant has previously implemented the following reduction activities:</p> <ul style="list-style-type: none"><li>• Minimized the amount of gasoline added to meet requirements and reduce the usage of toxics themselves.</li><li>• Containment and runoff monitoring program; closed loop system.</li><li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li><li>• Drivers &amp; operations personnel are trained to properly load &amp; unload chemicals as well as to respond to emergency spill situations.</li><li>• Only deal with dedicated suppliers.</li></ul>

### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of ethyl benzene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing ethyl benzene emissions to the environment.

### Plan Objectives

The objective of this plan is to reduce the emissions of ethyl benzene by implementing the technically and economically feasible reduction options.

### Description of Substance

Ethyl benzene arrives at the facility within the denaturant. There is no ethyl benzene created within the process.

### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of ethyl benzene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing ethyl benzene emissions to the environment.

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for ethyl benzene, prepared by Suncor Energy Products Inc., dated December 12, 2012.

## 3.6 Toluene

Substance Name and CAS #	Toluene; 108-88-3
Substances for which other plans have been prepared	Acetaldehyde, Sulphuric Acid, Methanol, Ethyl Benzene, Napthalene & Xylenes
Beneficial Uses at Facility	Toluene is a component of the gasoline that is added to ethanol as required by Excise Act. Denatured ethanol produced by SCEP is sold to the gasoline industry.
Previously Implemented Reduction Activities	The St. Clair Ethanol Plant has previously implemented the following reduction activities: <ul style="list-style-type: none"><li>• Minimized the amount of gasoline added to meet requirements and reduce the usage of toxics themselves.</li><li>• Containment and runoff monitoring program; closed loop system.</li><li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li><li>• Drivers &amp; operations personnel are trained to properly load &amp; unload chemicals as well as to respond to emergency spill situations.</li><li>• Only deal with dedicated suppliers.</li></ul>

### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of toluene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing toluene emissions to the environment.

### Plan Objectives

The objective of this plan is to reduce the emissions of toluene by implementing the technically and economically feasible reduction options.

### Description of Substance

Toluene arrives at the facility within the denaturant. There is no toluene created within the process.

### Toxic Substance Reduction Option(s) To Be Implemented

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of toluene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing toluene emissions to the environment.

### Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for toluene, prepared by Suncor Energy Products Inc., dated December 12, 2012.

## 3.7 Xylene

Substance Name and CAS #	Xylene; 1330-20-7
Substances for which other plans have been prepared	Acetaldehyde, Sulphuric Acid, Methanol, Ethyl Benzene, Toluene & Naphthalene
Beneficial Uses at Facility	Xylene is a component of the gasoline that is added to ethanol as required by Excise Act. Denatured ethanol produced by SCEP is sold to the gasoline industry.
Previously Implemented Reduction Activities	The St. Clair Ethanol Plant has previously implemented the following reduction activities: <ul style="list-style-type: none"><li>• Minimized the amount of gasoline added to meet requirements and reduce the usage of toxics themselves.</li><li>• Containment and runoff monitoring program; closed loop system.</li><li>• Smaller volumes stored onsite for immediate production requirements; all vessels labelled accordingly to prevent accidental losses or exceed expiry.</li><li>• Drivers &amp; operations personnel are trained to properly load &amp; unload chemicals as well as to respond to emergency spill situations.</li><li>• Only deal with dedicated suppliers.</li></ul>

### Statement of Intent

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of xylene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing xylene emissions to the environment.

## **Plan Objectives**

The objective of this plan is to reduce the emissions of xylene by implementing the technically and economically feasible reduction options.

## **Description of Substance**

Xylene arrives at the facility within the denaturant. There is no xylene created within the process.

## **Toxic Substance Reduction Option(s) To Be Implemented**

Suncor Energy Products Inc. is committed to playing a leadership role in protecting the environment. Suncor Energy Products does not intend to reduce the use of xylene because no feasible reduction options could be ascertained. Suncor Energy Products is committed to continuous improvement in reducing xylene emissions to the environment.

## **Plan Summary Statement**

This plan summary accurately reflects the content of the toxic substance reduction plan for xylene, prepared by Suncor Energy Products Inc., dated December 12, 2012.



## **Attachment 1: Certification Statements**

Confidential Commercially Sensitive Information



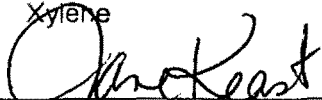


### **Certification By Highest Ranking Employee**

As of December 13, 2012, I, Jane Keast, certify that I have read the toxic substance reduction plan for the toxic substances referred to below and am familiar with its contents, and to my knowledge this version of the plan is factually accurate and complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substances:

- Acetaldehyde
- Sulphuric Acid
- Methanol
- Naphthalene
- Ethyl Benzene
- Toluene
- Xylene



---

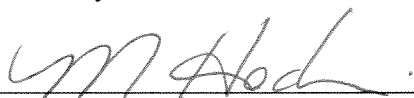
Jane Keast  
Director of Ethanol Operations  
St. Clair Ethanol Plant

## **Certification By Licensed Planner**

As of December 13, 2012, I, Melanie Hockin certify that I am familiar with the processes at the St. Clair Ethanol Plant that use or create the toxic substances referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 12, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

### Toxic Substances:

- Acetaldehyde
- Sulphuric Acid
- Methanol
- Naphthalene
- Ethyl Benzene
- Toluene
- Xylene



---

Melanie Hockin  
Certified Toxics Reduction Planner  
LEHDER Environmental Services Limited  
Licence # TSRP0140