

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Particulate Matter (PM, PM10 & PM2.5) and CAS # NA
Substances for which other plans have been prepared	Formaldehyde, Chromium, Manganese, Selenium, PM, PM10, PM2.5, Carbon Monoxide, Ethanol, Ethyl acetate and Phosphorus.
Beneficial Uses at Facility	None
Reasons for Use	This substance is not used at the facility
Reasons for use - summary statement (mandatory)	N/A
Reasons for Creation	As a by-product
Reasons for creation - summary statement (mandatory)	The substance is a by-product of key reactions within the manufacturing processes at the site.

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	139
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%
Parent Company Name	Owens Corning Insulating Systems Canada GP
Address	900 - 400 St. Mary Avenue, Winnipeg, Manitoba, R3C 4K5
Percent Ownership (if available)	0.01%

Facility Contact

Public Contact	Eva Baruco
Position	EHS Support
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Eva.Baruco@owenscorning.com
Phone	416 412-6703
Fax	416-412-6733

Date of Plan: **December 19, 2013**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of Particulate Matter (PM, PM10 & PM2.5) in its operations because it is a by-product of key reactions within the current manufacturing processes at the site. Whenever feasible, we will eliminate, or reduce the discharge of Particulate Matter (PM, PM10 & PM2.5) in full compliance with all Federal and Provincial Regulations.

Plan Objectives

While Owens Corning Insulating Systems Canada LP does not intend to reduce the creation of particulate matter (pm, pm10 & pm2.5), the plan was developed with the following objectives:

- we will continue to operate in full compliance with all applicable environmental regulations; and
- we will continue to minimize releases of Particulate Matter (PM, PM10 & PM2.5) through current and future pollution prevention and best management practices.

Description of Substance

Particulate Matter (PM, PM10 & PM2.5) is created as a by-product in the processes associated with the manufacture of fibreglass insulation products.

Toxic Substance Reduction Option(s) To Be Implemented

For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of Particulate Matter (PM, PM10 & PM2.5) in its operations because it is a by-product of key reactions within the current manufacturing processes at the site. In the past, the facility has implemented multiple programs to prevent and limit discharges. There were no further feasible (technical and economic) reduction options identified.

Description of Previously Implemented Reduction Opportunities:

- Constant preventative maintenance on pneumatic piping ie: cameras; routine visual inspections
- Pneumatic piping improved to minimize wear and prevent leaks ie: ceramic lining; elbows with material collection box (so wear occurs on material that is collected in elbow instead of pipe itself); replacement with large radius elbows; improved piping alignment; chrome-weld piping; conveying system boosters; plexi-glass enclosures around high-wear piping on roof
- Reuse or recycle of uncontaminated material vacuumed from plant floor or from dust collectors
- Currently using industry standard technology, procedures and practices to prevent losses
- Combustion control system in place to minimize/optimize natural gas usage
- Control measure currently in place to prevent/limit PM emissions; pressure monitors/sensors/inspections on control equipment, closed storage and transport systems
- Operating and maintenance practices in place to minimize losses upon spill or leak situation

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for Particulate Matter (PM, PM10 & PM2.5), prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2013.

Date of Plan: **December 19, 2013**

Certification By Highest Ranking Employee

As of December 19, 2013, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Particulate Matter (PM, PM10 & PM2.5)**



Wesley Co

Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2013, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance 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 19, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Particulate Matter (PM, PM10 & PM2.5)**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Carbon Monoxide and CAS # 630-08-0
Substances for which other plans have been prepared	Formaldehyde, Chromium, Manganese, Selenium, PM, PM10, PM2.5, Carbon Monoxide, Ethanol, Ethyl acetate and Phosphorus.
Beneficial Uses at Facility	None
Reasons for Use	This substance is not used at the facility
Reasons for use - summary statement (mandatory)	N/A
Reasons for Creation	As a by-product
Reasons for creation - summary statement (mandatory)	The substance is a by-product of key reactions within the manufacturing processes at the site.

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	139
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%
Parent Company Name	Owens Corning Insulating Systems Canada GP
Address	900 - 400 St. Mary Avenue, Winnipeg, Manitoba, R3C 4K5
Percent Ownership (if available)	0.01%

Facility Contact

Public Contact	Eva Baruco
Position	EHS Support
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Eva.Baruco@owenscorning.com
Phone	416 412-6703
Fax	416-412-6733

Date of Plan: **December 19, 2013**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of carbon monoxide in its operations because it is a by-product of key reactions within the current manufacturing processes at the site. Whenever feasible, we will eliminate, or reduce the discharge of carbon monoxide in full compliance with all Federal and Provincial Regulations.

Plan Objectives

Our goal is to reduce carbon monoxide used at our facility and to further minimize the potential for losses through continuous improvements and our commitment to best management practices.

Description of Substance

Carbon Monoxide is created as a by-product in the processes associated with the manufacture of fibreglass insulation products.

Toxic Substance Reduction Option(s) To Be Implemented

For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of carbon monoxide in its operations because it is a by-product of key reactions within the current manufacturing processes at the site. In the past, the facility has implemented multiple programs to prevent and limit discharges. There were no further feasible (technical and economic) reduction options identified.

Description of Previously Implemented Reduction Opportunities:

- Currently using industry standard technology, procedures and practices to prevent losses
- Preventative maintenance programs and procedures already in place
- Combustion control system in place to minimize/optimize natural gas usage

Plan Summary Statement

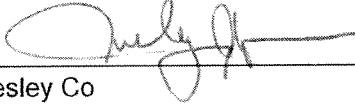
This plan summary accurately reflects the content of the toxic substance reduction plan for carbon monoxide, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2013.

Date of Plan: **December 19, 2013**

Certification By Highest Ranking Employee

As of December 19, 2013, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Carbon Monoxide**



Wesley Co

Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2013, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance 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 19, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Carbon Monoxide**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Ethanol and CAS # 64-17-5
Substances for which other plans have been prepared	Formaldehyde, Chromium, Manganese, Selenium, PM, PM10, PM2.5, Carbon Monoxide, Ethanol, Ethyl acetate and Phosphorus.
Beneficial Uses at Facility	None
Reasons for Use	The substance is not used at the facility
Reasons for use - summary statement (mandatory)	N/A
Reasons for Creation	by-product
Reasons for creation - summary statement (mandatory)	The substance is a by-product of reactions within the manufacturing processes at the site.

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	139
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%
Parent Company Name	Owens Corning Insulating Systems Canada GP
Address	900 - 400 St. Mary Avenue, Winnipeg, Manitoba, R3C 4K5
Percent Ownership (if available)	0.01%

Facility Contact

Public Contact	Eva Baruco
Position	EHS Support
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Eva.Baruco@owenscorning.com
Phone	416 412-6703
Fax	416-412-6733

Date of Plan: **December 19, 2013**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of ethanol in its operations because it is a by-product of reactions within the current manufacturing processes at the site. Whenever feasible, we will eliminate, or reduce the discharge of ethanol in full compliance with all Federal and Provincial Regulations.

Plan Objectives

While Owens Corning Insulating Systems Canada LP does not intend to reduce the creation of ethanol, the plan was developed with the following objectives:

- we will continue to operate in full compliance with all applicable environmental regulations; and
- we will continue to minimize releases of ethanol through current and future pollution prevention and best management practices.

Description of Substance

Ethanol is created as a by-product in the processes associated with the manufacture of fibreglass insulation products.

Toxic Substance Reduction Option(s) To Be Implemented

For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of ethanol in its operations because it is a by-product of key reactions within the current manufacturing processes at the site.

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for ethanol, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2013.

Date of Plan: **December 19, 2013**

Certification By Highest Ranking Employee

As of December 19, 2013, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Ethanol**



Wesley Co
Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2013, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance 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 19, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Ethanol**



Melanie Hockin
Toxic Substance Reduction Planner
License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Ethyl Acetate and CAS # 141-78-6
Substances for which other plans have been prepared	Formaldehyde, Chromium, Manganese, Selenium, PM, PM10, PM2.5, Carbon Monoxide, Ethanol, Ethyl acetate and Phosphorus.
Beneficial Uses at Facility	Component of ink system materials that speeds up drying.
Reasons for Use	Ancillary/other use
Reasons for use - summary statement (mandatory)	This substance is used within the process as a component of ink system materials however it has triggered reporting as a Speciated VOC which is a subset of a Criteria Air Contaminant (Total VOCs) and as such has been determined to be created at the point it enters the air
Reasons for Creation	Ancillary/other use
Reasons for creation - summary statement (mandatory)	The speciated VOC, ethyl acetate, as a subset of a Criteria Air Contaminant (Total VOCs), has been determined to be created at the point it is emitted to the air. Ethyl Acetate is emitted from process sources at the facility.

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	139
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%
Parent Company Name	Owens Corning Insulating Systems Canada GP
Address	900 - 400 St. Mary Avenue, Winnipeg, Manitoba, R3C 4K5
Percent Ownership (if available)	0.01%

Facility Contact

Public Contact	Eva Baruco
Position	EHS Support
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Eva.Baruco@owenscorning.com
Phone	416 412-6703
Fax	416-412-6733

Date of Plan: **December 19, 2013**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. Whenever feasible, we will eliminate, or reduce the use/creation and discharge of ethyl acetate in full compliance with all Federal and Provincial Regulations.

Plan Objectives

Our goal is to reduce ethyl acetate use/creation at our facility and to further minimize the potential for losses through continuous improvements and our commitment to best management practices.

Description of Substance

Ethyl Acetate is used within the process as a component of ink system materials however, it has triggered reporting as a Speciated VOC which is a subset of a Criteria Air Contaminant (Total VOCs) and as such has been determined to be created at the point it enters the air.

Description of Previously Implemented Reduction Opportunities:

- Currently using industry standard technology, procedures and practices to prevent losses
- Preventative maintenance programs and procedures already in place
- Process control system in place to minimize flushing/optimize usage
- Operating and maintenance practices in place to minimize losses upon spill or leak situation
- Converted regularly used connections to stainless steel to prevent spillage

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for ethyl acetate, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2013.

Date of Plan: **December 19, 2013**

Toxic Substance Reduction Option(s) to be Implemented

The following options have been identified for implementation to reduce the use, creation, or releases of ethyl acetate:

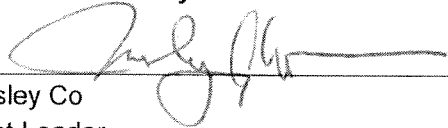
		Used	Created	Contained in Product	On-Site Releases to Air	On-Site Releases to Water	On-Site Releases to Land	Disposal On-Site	Disposal Off-Site	Transfer Off-Site for Recycling
Option Category:	Product Design or Reformulation									
Option Description:	Possible 15% reduction due to batt redesign (denser batt - R22/24)									
Estimated Reductions due to Option Implementation	tonnes	N/A	0.9400	N/A	0.9400	N/A	N/A	N/A	N/A	N/A
	%	N/A	15%	N/A	15%	N/A	N/A	N/A	N/A	N/A
Timeline for Reductions	Years	N/A	2							
Option Category:	Equipment or Process Modification									
Option Description:	Currently prints every 44", change system to print after every cut or less frequently (every 46"). Calculation shows 4.7% less printing.									
Estimated Reductions due to Option Implementation	tonnes	N/A	0.2945	N/A	0.2945	N/A	N/A	N/A	N/A	N/A
	%	N/A	4.7%	N/A	4.7%	N/A	N/A	N/A	N/A	N/A
Timeline for Reductions	Years	N/A	0.3							

Date of Plan: **December 19, 2013**

Certification By Highest Ranking Employee

As of December 19, 2013, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Ethyl Acetate**



Wesley Co

Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2013, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance 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 19, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Ethyl Acetate**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Phosphorus and CAS # N/A
Substances for which other plans have been prepared	Formaldehyde, Chromium, Manganese, Selenium, PM, PM10, PM2.5, Carbon Monoxide, Ethanol, Ethyl acetate and Phosphorus.
Beneficial Uses at Facility	Helps the binder cure at a lower temperature
Reasons for Use	formulation component
Reasons for use - summary statement (mandatory)	Key component of the raw binder materials used at the facility.
Reasons for Creation	This substance is not created at the facility
Reasons for creation - summary statement (mandatory)	N/A

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	139
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
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Parent Company Information

Parent Company Name	OC Canada Holdings Company
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Percent Ownership (if available)	99.99%
Parent Company Name	Owens Corning Insulating Systems Canada GP
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Percent Ownership (if available)	0.01%

Facility Contact

Public Contact	Eva Baruco
Position	EHS Support
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Eva.Baruco@owenscorning.com
Phone	416 412-6703
Fax	416-412-6733

Date of Plan: **December 19, 2013**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to further reduce the use of phosphorus in its operations because it is a key component within the current manufacturing processes at the site. Whenever feasible, we will eliminate, or reduce the discharge of phosphorus in full compliance with all Federal and Provincial Regulations.

Plan Objectives

While Owens Corning Insulating Systems Canada LP does not intend to reduce the use of phosphorus, the plan was developed with the following objectives:

- we will continue to operate in full compliance with all applicable environmental regulations; and
- we will continue to minimize releases of phosphorus through current and future pollution prevention and best management practices.

Description of Substance

Phosphorus is used as a formulation component in the manufacture of fibreglass insulation products.

Toxic Substance Reduction Option(s) To Be Implemented

For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the use of phosphorus in its operations because it is a formulation component necessary to the current manufacturing processes at the site.

Description of Previously Implemented Reduction Opportunities:

- Reduced quantity of SHP used (therefore reduced purchasing) by 35% for cost reduction
- Currently using industry standard technology, procedures and practices to prevent losses
- Preventative maintenance programs and procedures already in place
- Process control system in place to minimize flushing/optimize usage
- Operating and maintenance practices in place and undergoing continuous improvement to capture losses upon spill or leak situation (mandated by Health Canada)
- Converted regularly used connections to stainless steel to prevent spillage

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for phosphorus, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2013.

Date of Plan: **December 19, 2013**

Certification By Highest Ranking Employee

As of December 19, 2013, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Phosphorus**



Wesley Co

Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2013, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance 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 19, 2013 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Phosphorus**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited