

Toxic Substance Reduction Plan

Carbon Monoxide Nitrogen Oxides

Plan Date: December 16, 2013

BASIC FACILITY INFORMATION:

Name and CAS # of Substance	Carbon Monoxide Nitrogen Oxides	CAS# 630-08-0 CAS# 11104-93-1
Substances for which other plans have been prepared:	Formaldehyde, Methanol, PM, PM10, PM2.5, Acetone, Ammonia, Propane, a-pinene, b-pinene, d-limonene	
Facility Identification and Site Address		
Company Name	Panolam Industries Ltd.	
Facility Name	Huntsville Facility	
Facility Address	Physical Address	Mailing Address: (if different)
	61 Domtar Road Huntsville, ON P1H 2J7	Muskoka Road 3 Box 7500 Huntsville, ON P1H, 2 J7
Spatial Coordinates	Zone 17T Easting: 632470 Northing: 5016877	
Number of Employees:	107	
NPRI ID	001199	
Ontario MOE ID Number	5971	
Parent Company Information		
Name and Address	Panolam Industries International Inc.	
Percent Ownership	100	
Business Number	893780742	
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	32	
4 Digit NAICS Code	3212	
6 Digit NAICS Code	321216	
Company Contact Information		
Facility Public Contact	Al Stobbart	Same Address as facility
	Al_stobbart @panolam.com	
	Phone: (705) 789-9683	
	FAX: (705)789-6270	
Parent Company Contact Information		
Parent Company Contact	Jeffrey O’Hearn	Same Address as Parent Company
	Jeffrey_ohearn@panolam.com	
	Phone: (203) 925-1556	
	FAC: (203) 225-0050	

PLAN SUMMARY STATEMENT:

This plan accurately reflects the content of the toxic substance reduction plan for Carbon Monoxide and Nitrogen Oxides, prepared by Panolam Industries, Ltd.

STATEMENT OF INTENT:

Panolam prides itself on being an environmentally proactive company. The facility will strive to reduce the usage, creation and emission of carbon monoxide and nitrogen oxides from the facility. A technical and economic feasibility analysis has been conducted to determine the options available for implementation.

REDUCTION OBJECTIVES:

The facility is proposing an equipment or process modification option to reduce the amount of natural gas required for the ancillary combustion equipment. An estimated natural gas reduction of 10% has been proposed for the ancillary combustion processes which will result in a 1.2% reduction in CO emissions and a 1.0% reduction in NOx emissions within the next 5 years.

DESCRIPTION OF SUBSTANCE:

Carbon Monoxide	Generated during the combustion of wood dust and/or natural gas in the particleboard dryers
	Generated during pressing or fiber to make the particleboard panels
	Generated during the combustion of natural gas in the thermal oil heater system and various air heaters used for building heating and humidification.
Nitrogen Oxides	Generated during the combustion of wood dust and/or natural gas in the particleboard dryers
	Generated during the combustion of natural gas in the thermal oil heater system and various air heaters used for building heating and humidification

TOXIC SUBSTANCE REDUCTION OPTION(S) TO BE IMPLEMENTED:

The facility is proposing an equipment or process modification option to reduce the amount of natural gas required for the ancillary combustion equipment. An estimated natural gas reduction of 10% has been proposed for the ancillary combustion processes which will result in a 1.2% reduction in CO emissions and a 1.0% reduction in NOx emissions within the next 5 years.

PLANNER RECOMMENDATIONS

Based on **Trinity Consultants Ontario Inc.** (Trinity's) review of the Panolam Industries Ltd.'s Huntsville facility *Toxic Substance Reduction* (TSR) Plan for CO and NO_x, the following recommendations are submitted for consideration:

Expertise Relied on in Preparing the Plan

The TSR Plan was prepared by Jeff O'Hearn, Corporate Environmental Engineer for Panolam Industries International Inc. Mr. O'Hearn also relied on input from representatives at the facility. The technical process and accounting expertise used in preparing the plan appears to be appropriate to the requirements of *O. Reg 455/09* and no additional recommendations are noted in this regard.

Identification and Description of Stages and Processes

The Panolam Huntsville TSR Plan for CO and NO_x provided a detailed summary of the processes of the operations at the subject facility, including the process flow of the target substances. Based on Trinity's review of the TSR Plan document, the processes at the subject facility appear to have been identified and described with a level of detail that is sufficient for the reviewers of the TSR plan to understand the following:

- The purpose and particulars of the toxic substances that are used
- The reason the toxic substances are required
- The nature of inputs that contain the toxic substances
- The locations in which the toxic substances that are used
- The times at which the toxic substances that are used
- The end points/fates of the toxic substances

It is noted that, while the processes are well defined and described, the initial breakdown to stages is defined as a single one. It is understood that, based on the flow of materials, this is considered to be the best available approach. Based on Trinity's review of this component of the TSR Report, no other recommendations are noted in this regard.

Process Flow Diagrams

The Panolam Huntsville TSR Plan provided process flow diagrams for the target substance throughout the facility operations. Based on Trinity's review of the TSR Plan document, the process flow diagrams provided in the TSR report have a sufficient level of detail to illustrate the individual steps of the process as well as their relationship to each other. Therefore, no additional recommendations are noted in this regard.

Data and Methods Used in Toxic Substance Accounting

The Panolam Huntsville TSR Plan used data sources for the target substance that appeared to be in accordance with industry standard practices, including direct measurement and/or laboratory analysis, as well as process engineering estimates. The methodology produced results that were representative of the input/output quantities of toxic substances used at a sufficient balance of cost-effectiveness and accuracy for the TSR reporting, and it did not appear that significant gains in the accuracy of the results could be obtained by replacing any of the estimates with additional measurements and/or laboratory analysis. Therefore, no additional recommendations are submitted in this regard.

Analysis of Input/Output Balances

The Panolam Huntsville TSR Plan quantified the input/output balances using methodology that was consistent with the level of accuracy needed for assessing toxics reduction options, and no significant data gaps were encountered. Based on Trinity's review of the TSR Plan document, the process flow diagrams provided in the TSR report have a sufficient level of detail to illustrate the individual stages of the process as well as their relationship to each other. It is noted that the Input/Output Balances are shown simply as 'In + Created' = 'Out + Destruction/Transformed'. It would be ideal to show each specific input and output, such as 'U4 + U5 = A13 + A14 +DIS5' etc. This is not a necessity, but would facilitate future review. Otherwise, no additional recommendations are noted in this regard.

Direct and Indirect Cost Analysis

The Panolam Huntsville TSR Plan provided an analysis of direct and indirect costs for the reduction of the target toxic substances. Based on Trinity's review of the TSR Plan document, the cost analysis and allocations provided in the TSR report have a sufficient level of detail for the purposes of the TSR Plan. Therefore, no additional recommendations are submitted in this regard.

Identified Options

The Panolam Huntsville TSR Plan provided a summary of the toxics reduction options, along with a description of the effects of implementing the options on production resources, facility configuration and equipment, and final product quality. Based on Trinity's review of the TSR Plan document, the identified toxics reduction options in the report have a sufficient level of analysis to determine economic feasibility. Therefore, no additional recommendations are noted in this regard.

Reduction Estimates for Each Option

The Panolam Huntsville TSR Plan provided reduction estimates for the target toxic substance, which were based on calculations from process inputs after the implementation of the toxics reduction options. Based on Trinity's review of the TSR Plan document, the reduction estimates appear to be conservatively based on the best available information, and no additional recommendations are noted in this regard.

Technical and Economic Feasibility Analysis

The Panolam Huntsville TSR Plan provided a feasibility analysis that summarized which toxics reductions options are first technically feasible, and once identified as such, which are also economically viable. The level of effort and the approach taken to estimate reductions and determine the economic (and technical) feasibility is at the discretion of the facility. The anticipated savings that could result from implementing the option and the anticipated payback period for the option to be implemented are somewhat vague and should be better described. Otherwise, no additional recommendations are noted in this regard.

Additional Feasible Reduction Options

Based on our review of the Panolam Huntsville TSR Plan, Trinity does not presently have any knowledge of any additional technically and economically feasible options that would result in reductions that are equal to or greater than those already identified in the plan. Therefore, no additional recommendations are noted in this regard.

Implementation Steps, Timelines, and Achievability

The Panolam Huntsville TSR Plan needs to provide an outline of the implementation steps with sufficient detail to predict the project timeline and ensure effective implementation. An implementation plan for the option to be implemented must include a description of the steps to implement the option, a timetable for those steps, and the anticipated dates for achieving the estimated reduction in use/creation. It is noted that a date of five years is included as the anticipated date for achieving the estimated reduction in use/creation.

CERTIFICATION BY HIGHEST RANKING EMPLOYEE:

As of December 17, 2013 I, Al Stobbart, certify that I have read the toxic substance reduction plan for the toxic substance referenced 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 and Nitrogen Oxides



Al Stobbart
Plant Manager
Panolam Industries Ltd.

CERTIFICATION BY LICENSED PLANNER:

As of December 17, 2013, I, Ulla Jokinen of Trinity Consultants Ontario Inc., certify that I am familiar with the processes at the Panolam Industries Ltd Huntsville facility, that uses or creates 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 17, 2013 and that the plan complies with the Act and Ontario Regulation 455/09 (General) made under the Act.

Toxic Substance: Carbon Monoxide and Nitrogen Oxides



Ulla Jokinen, B.Sc., C.E.T. of Trinity Consultants Ontario Inc.,
Toxic Substance Reduction Planner
Planner License No: TSRP0090