2018 TRA Public Annual Report and Public Report of Plan Summaries

B&W Heat Treating Canada

Kitchener ON

May 2019

BASIC FACILITY INFORMATION

Substances Included in the Plan
• Ammonia (CAS NA-16) • Sodium Nitrite (CAS 7632-00-0) • Methanol (CAS 67-56-1)

Facility (legal) name	B&W Heat Treating Canada ULC
Facility address	60 Steckle Place, Kitchener, ON N2E 2C3
NPRI Identification number	00064
Two digit NAICS Code	33
Four digit NAICS Code	3328
Six Digit NAICS Code	332810
Number of full time Employees	18
UTM spatial coordinates:	
UTM Zone	38
UTM Easting	470483
UTM Northing	1066525
Facility Owner	Bluewater Thermal Solutions
Highest Ranking Official	Shawn Scott sscott@bluewaterthermal.com (519) 748-0769
Public Contact	Shawn Scott sscott@bluewaterthermal.com (519) 748-0769
Technical Contact	Shawn Scott sscott@bluewaterthermal.com (519) 748-0769
Coordinator of the TSRP	Erin Guo eguo@bluewaterthermal.com (519) 748-0769
Person preparing the TSRP	Lari Dakin LD – 50 Enterprises Inc. – Consultant/Planner Cell: (519) 575-8374; E-mail: ld50@execulink.com
Licensed Planner making recommendations	Lari Dakin LD – 50 Enterprises Inc. – Consultant/Planner Cell: (519) 575-8374; E-mail: ld50@execulink.com License number TSRP0270
Licensed Planner certifying the TSRP	Lari Dakin LD – 50 Enterprises Inc. – Consultant/Planner Cell: (519) 575-8374; E-mail: ld50@execulink.com License number TSRP0270
Parent Company information	Bluewater Thermal Solutions Suite 302 – 6225 Sheridan Drive New York

Facility's Approach to Toxic Substance Accounting

The amount of each substance used, created, contained in the product, released, disposed, and/or transferred is contained in the 2018 NPRI Report, available on the government website.
http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=F6300E68-1

1. Ammonia (CAS NA-16)

Statement of Intent
Ammonia is currently used in the heat-treating furnaces to create a suitable nitrogen atmosphere. It assists in producing this atmosphere, which is key in hardening of the parts. It is expected that the use of the substance will increase based on anticipated increased production. Reduction initiatives taken in the past included, increased efficiencies of the furnaces. Due to its criticality to the process, there was no intent to reduce the use of this substance in 2018. However, the loss of a customer requiring this treatment did lead to a decrease in the use of this product.
Objectives
Although B&W Heat Treating does not intend to reduce the use of ammonia at this time, it will continue to seek out further opportunities for reduction options, while maintaining industry standards and meeting customer requirements.
Description of Why the Substance is Used:
Ammonia (NA-16) is used at the chemical receiving process, where it is transferred to a 2500 US Gallon tank by the supplier, so no additional cost is incurred in receiving. A mixture of the ammonia/nitrogen/methanol is used in the furnaces to create a carbon/nitrogen rich atmosphere. There were no spills of ammonia reported in 2018. The ammonia is destroyed in the furnaces.
Description of Options to be Implemented:
No option chosen. Rationale: Option1: Substitute NH4 with N2. Not technically feasible at this time. The substance is a critical component in creating the proper atmosphere for hardening/carburizing of the parts, due to the chemistry with the methanol, also used in this process. Rationale: Option 2 – Replace valving and install a secondary monitoring system. Technically feasible. This option was implemented in 2012. Rationale: Option 3 – Purchase an Endothermic Generator to reduce the amount of ammonia used in ferritic nitrocarburizing. This will reduce flow of ammonia (by 50%) and cycle time on one oven. This can only be used for heat treating of steel parts. This was considered in 2016. However, this option has an approximate 8.4-year payback, so is not considered economically feasible. Estimated Reductions for each Option: Option 3 is 50% reduction on one of the five ovens. An overall reduction of 10% in the use of ammonia is possible.

Timeline for Achieving Estimated Reductions: None, since not economically feasible.
Projected Effectiveness of the Reduction Plan
Not applicable, since no plan is being implemented.

This plan summary accurately reflects the Toxic Substance Reduction Plan that has been prepared by LD – 50 Enterprises Inc. and B&W Heat Treating Canada, for Ammonia, dated December 2013 and updated in December 2018.

Table 1: Tracking of Ammonia at the Facility Level

Form of Involvement	Amount (kg) 2017	Amount (kg) 2018	Comparison 2017 v 2018
Enters the facility	220,588	130,475	-41%
Created at the facility	0	0	0
Released (air) from the facility (spill)	0	0	0
Released (land) from the facility	0	0	0
Released (water) from the facility	0	0	0
Disposed (on-site) by the facility	0	0	0
Disposed (off-site) by the facility	0	0	0
Transferred (for recycling) from the facility	0	0	0
Contained in product that leaves the facility	0	0	0
Destroyed at the facility	220,588	130,475	-41%
Remains in storage at the facility	0*	0*	0

* records of remaining storage were not kept in 2018 or 2017, so it is estimated that all the material purchased in 2018, was used in production. This would be a minimal amount due to the tank size versus the overall amount purchased.

Reason for Change
The amount of Ammonia purchased in 2018 decreased, due to the loss of a customer. This decrease is expected again for 2019, unless the customer returns.

2. Sodium Nitrite (CAS No. 7632-00-0)

Statement of Intent
The use of this substance in 2012 was based on a rare start-up of the draw pots, due to product contamination. This resulted in an ~100% increase in the amount of the substance used at the facility. Generally, the use of this substance is well below threshold values and was completely phased out by 2018.
Objectives
The use of this material was discontinued by 2018.
Description of Why the Substance is Used
The substance is used to create ductility in the metal. This ductility is a safety critical component to the process.

Description of Options to be Implemented
No option chosen. Rationale Option1: Substitute salt with high Sodium Nitrite concentration with lower concentration. Not technically feasible at this time. The lower concentration of the substance was tried earlier in the process and led to quality problems. As the use of this substance is a quality critical component in the effective hardening of the parts, this option was tried and is not feasible. Also, the use of this substance in 2012 was not indicative of the regular use. There was an emergency situation, which led to a higher use of the substance. This situation is not anticipated to happen again Rationale: Option 2 – Reuse the contaminated salt Not technically feasible. The contamination in the salt would create quality issues. As the use of this substance is a quality critical component of the process, this option is not feasible. The parts must have the required hardness to maintain safety of the product. Estimated Reductions for each Option: Not applicable Timeline for Achieving Estimated Reductions: Not applicable
Projected Effectiveness of the Reduction Plan
As there is no reduction plan in place at this time, this section is not applicable.

This plan summary accurately reflects the Toxic Substance Reduction Plan that has been prepared by LD – 50 Enterprises Inc. and B&W Heat Treating for Sodium Nitrite dated December 2013 and updated in 2018. As the use of this material has been discontinued, an exit record has been filed.

Tracking and Quantification of Sodium Nitrite at the Facility Level

Table 1: Tracking of Sodium Nitrite at the Facility Level

Form of Involvement	Amount (kg)	Amount (kg)	Comparison
	2017	2018	2017 v 2018
Enters the facility	3,250	0	-100%
Created at the facility	0	0	0
Released (air) from the facility (spill)	0	0	0
Released (land) from the facility	0	0	0
Released (water) from the facility	0	0	0
Disposed (on-site) by the facility	0	0	0
Disposed (off-site) by the facility	2,000	0	-100%
Transferred (for recycling) from the facility	0	0	0
Contained in product that leaves the facility	0	0	0
Destroyed at the facility	0	0	0
Remains in storage at the facility	1250*	0	0

*Amount stored on-site at the end of 2017 was not tracked.

Reason for Change
It was reported in the initial Toxic Substance Reduction Plan that there was a high volume of sodium nitrite, due to a one-time oven cleanout. The reduction in use of the substance in 2013, to levels below the reporting threshold, shows this to be accurate. This was confirmed in 2014, where the purchase of the material was reduced by 21%. And again in 2015, where it was further reduced by another 9.1%. In 2017 the use of the material was reduced by ~48% and was phased out completely by 2018.

3. Methanol (CAS No. 67-56-1)

Statement of Intent
Methanol is currently used as a carrier gas through the high temperature heat-treating furnaces to create a suitable carbon atmosphere. The use of the substance is critical to the creation of a suitable atmosphere to harden parts. It is expected that the use of the substance will increase based on anticipated increased production. Reduction initiatives taken in the past included, increased efficiencies of the furnaces. Due to its criticality to the process, there was no intent to reduce the use of this substance in 2018.
Objectives
B&W Heat Treating reduced the amount of Methanol, by introducing changes, starting in 2016 and ending in 2017. This was anticipated to reduce the use of Methanol by ~50%. As of the end of 2017, a ~28% decrease has occurred over the 2015 levels. However, the use of the material increased in 2018, since parts treated required a longer carburizing process, as per customer requirements.
Description of Why the Substance is Used
Methanol (CAS 67-56-1) is used in the Batch Department to create a suitable atmosphere for heat treating. It is shipped to the facility through a contracted service via tanker and stored in a 1500 (US) gallon tank. Methanol is used as a processing aid, in producing a suitable carbon atmosphere. Methanol acts as a protectant gas to protect the parts from scaling.
Description of Options to be Implemented
No option chosen. Rationale Option1: Reduce the use of methanol at the furnaces by installing new process panels. This was completed and led to decreases in 2017. No further decrease is planned. Estimated Reductions for each Option: No option chosen. Timeline for Achieving Estimated Reductions: Not applicable since no option chosen.
Projected Effectiveness of the Reduction Plan
Not applicable as the plan was implemented in 2017.

This plan summary accurately reflects the Toxic Substance Reduction Plan that has been prepared by B&W Heat Treating for Methanol dated May 2011 and updated in December 2018.

Tracking and Quantification of Methanol at the Facility Level

Table 1: Tracking of Methanol at the Facility Level

Form of Involvement	Amount (kg)	Amount (kg)	Comparison
	2017	2018	2017 v 2018
Enters the facility	141,100	176,090	24.8%
Created at the facility	0	0	0
Released (air) from the facility	30	37	23.3%
Released (land) from the facility	0	0	0
Released (water) from the facility	0	O	0
Disposed (on-site) by the facility	0	0	0
Disposed (off-site) by the facility	0	0	0
Transferred (for recycling) from the facility	0	0	0
Contained in product that leaves the facility	0	0	0
Destroyed at the facility	141,070	176,053	24.8%
Remains in storage at the facility*	0	0	0

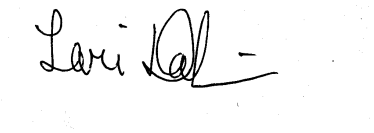
*The amount of material remaining on-site was not tracked in 2017 or 2018.

Reason for Change
The increase in 2018 was due to increased production of parts requiring a longer carburizing process.

Certification Statement (Licensed Planner)

As of May 30, 2019, I, Lari Dakin certify that I am familiar with the processes at B&W Heat Treating that uses 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 plans dated [December 30, 2013 and updated in December 2018] and that the plans comply with that act and Ontario Regulation 455/09 (General) made under that act, and the plans meets all other requirements of the act and regulation.

Ammonia (NA-16), Methanol (67-56-1) & Sodium Nitrite (7632-00-0)

Name:	Lari Dakin
Signature:	
License Number:	TSRP0270

Certification Statement (Highest Ranking Employee)

As of May 30, 2019, I, Shawn Scott certify that I have read the toxic substance reduction plans for the toxic substances 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.

Ammonia (NA-16), Methanol (67-56-1) & Sodium Nitrite (7632-00-0)

Name:	Shawn Scott
Signature:	
Title:	General Manager