



2016 Toxics Reduction Act Public Report

Goderich Salt Mine
300 North Harbor Road
Goderich, Ontario N7A 3Y9

Compass Minerals

Table 1
Summary of Reasons for Change - TRA
Compass Minerals Canada
Goderich, Ontario

Compounds	CAS No.	2015 Created (tonnes)	2016 Created (tonnes)	Percent Change	Owners Code	Description
TRA						
Total Particulate	NA	270.588	159.087	-41%	A	Changes in Production Levels
10 µm Particulate Matter	NA-M09	128.031	75.283	-41%	A	Changes in Production Levels
2.5 µm Particulate Matter	NA-M10	19.461	11.456	-41%	A	Changes in Production Levels

Compounds	CAS No.	2015 Contained in Product (tonnes)	2016 Contained in Product (tonnes)	Percent Change	Owners Code	Description
TRA						
Total Particulate	NA	0.000	0.000	-	H	No Change
10 µm Particulate Matter	NA-M09	0.000	0.000	-	H	No Change
2.5 µm Particulate Matter	NA-M10	0.000	0.000	-	H	No Change

Compounds	CAS No.	2015 Used (tonnes)	2016 Used (tonnes)	Percent Change	Owners Code	Description
TRA						
Total Particulate	NA	0.000	0.000	-	H	No Change
10 µm Particulate Matter	NA-M09	0.000	0.000	-	H	No Change
2.5 µm Particulate Matter	NA-M10	0.000	0.000	-	H	No Change

Notes:

- NA - Not Applicable.
- NPRI Software Reasons for Change must be selected from the following list for each reportable substance:
- A - Changes in Production Levels
- B - Changes in Estimation Methods
- C - Pollution Prevention Activities
- D - Changes in On-Site Treatment
- E - Changes in Disposal
- F - Changes in Off-Site Transfers for Recycling
- G - Other (specify in comments)
- H - No Significant Change (< 10%) or No Change
- I - Not Applicable (First year reporting this substance)

SIGNED STATEMENTS

As of MAY 31, 2017, I, Jack Leunig, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.



Jack Leunig, Senior Vice President-Operations
Compass Minerals

Date MAY 31, 2017

As of May 25, 2017, I, Dana Lauder certify that I am familiar with the processes at Compass 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 18, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.



Dana Lauder, Toxic Substance Reduction Planner
License No. TSRP0014

Date May 25, 2017

Appendices

Appendix A

Plan Summary PM2.5

Appendix A Plan Summary PM2.5

Basic Facility Information

Name and CAS # of Substance	PM2.5	NA
Facility Identification and Site Address		
Company Name	Compass Minerals Canada	
Facility Name	Goderich Salt Mine	
Facility Address	Physical Address: 300 North Harbour Road Goderich, Ontario N7A 3Y9	Mailing Address: (if different)
Spatial Coordination of Facility	441485 m E 4844024 m N	
Number of Employees	475	
NPRI ID	7686	
Ontario MOE ID Number	N/A	
Parent Company (PC) Information		
PC Name and Address	Compass Minerals 9900 West 109th Street, Suite 100 Overland Park, Kansas USA, 66210	
Percent Ownership for each PC	100%	
Business Number for PC		
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	21 Mining, quarrying, and oil and gas extraction	
4 Digit NAICS Code	2123 – Non-metallic mineral mining and quarrying	
6 Digit NAICS Code	212393 – Salt mining	
Company Contact Information		
Facility Public Contact	Chris Grande, Technical Supervisor grande@compassminerals.com Phone: (519) 524-8351 Fax: (519) 524-2261	Same address as facility
Facility Technical Contact	Same as Public Contact	Same as facility address
Company Coordinator Contact	Same as Public Contact	
Person who Prepared the Plan: (if different from the Coordinator)	Same as Public Contact	
Highest Ranking Employee	Same as Public Contact	
Planner Information		
Planner Responsible for Making Recommendations	Danas Lauder Planner License No. dana.lauder@ghd.com Phone: (519) 884-0510 ext. 2299	651 Colby Drive Waterloo, Ontario N2V 1C2 TSRP0014
Planner Responsible for Certification	(same as planner responsible for making recommendations)	

Toxic Reduction Policy Statement of Intent

Compass Minerals Canada (Compass) is committed to playing a leadership role in protecting the environment. Compass does not intend to reduce the creation of PM2.5. Compass only creates PM2.5, therefore, this plan does not address reducing its use.

Reduction Objectives

Compass prides itself on technological innovation in order to process, store, and ship salt in an environmentally responsible manner. Compass will strive to eliminate the creation of PM2.5 at the facility. Further, this plan will determine the technical and economic feasibility of each option to determine which, if any, are viable for implementation at this time.

Description of Facility

Compass owns and operates the world's largest salt mine. The salt (mineral name: Halite) is found at the 1,760-foot level below surface in the Michigan Basin salt bed. The salt is drilled, blasted, and conveyed to the Underground Processing Mill, where the salt products are produced. All product is hoisted to surface via two production hoists. Salt is conveyed to designated storage buildings via covered conveyor galleries prior to shipment. Product is dispatched and shipped via vessel, railcar, and truck, depending on the product, tonnage, and customer expectation.

The Facility operates 24 hours a day, 7 days per week.

Toxic Substance Reduction Options

After looking into the seven categories of toxic substance reduction options, a few options were identified. Explanations are provided in the table below to detail why an option could or could not be identified in each category.

Toxic Substance Reduction Category	Option: Identification and Description
1. Materials or feedstock substitution	No option identified: Compass' salt (mineral name: Halite) is found at the 1,760-foot level below surface in the Michigan Basin salt bed. The salt is drilled, blasted, and conveyed to the Underground Processing Mill, where the salt products are produced. All toxic substances are created and released from various processes such as the baghouse dust collectors, silos, and combustion equipment. No PM2.5 is present in any of the raw materials. Therefore, no potential reduction options were identified in this category.
2. Product design or reformulation	No option identified: Compass' formulation for the production of salt is based on past research, training, and analysis used to create salt products which appeal to their customers. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3. Equipment or Process Modification	No option identified: Compass conducts regular preventative maintenance on all equipment to ensure it is operating efficiently. The process is specialized and therefore process modifications are not possible. While Compass has developed options for reducing particulate emissions in certain areas of their operation, these identified areas are not significant contributors compared to the Facility-wide emissions.

Toxic Substance Reduction Category	Option: Identification and Description
4. Spill and Leak prevention	No option identified: All of the PM2.5 at Compass is created and released to the atmosphere. The nature of the contaminant does not allow for spills or leaks. The Facility is already doing everything possible to reduce the creation and release of PM2.5.
5. On-site reuse or recycling	No option identified: The PM2.5 created in the processes are released to air and cannot be reused or recycled in the manufacturing process. Therefore, no options can be identified.
6. Improve inventory management or purchasing techniques	No option identified: Compass' inventory and hours of operation is controlled by customer demand. The Facility's creation of PM2.5 is based on hours of operation and therefore is not dependent on inventory management.
7. Training or improved operating practices	<p>Compass has continued work on a six sigma project to reduce salt "fines" generation. This process takes all processes into account that would generate "fines", which in our case starts at the point of where the salt is blasted underground through all material handling processes up to and including final load-out to vessel, rail and truck customers. The effect on PM emissions has not been confirmed to date.</p> <p>Estimated Reductions: The effect of this option on PM emissions has not been confirmed to date.</p> <p>Technical Feasibility: Compass is currently undertaking research to determine if this reduction option is technically feasible for the potential reduction of toxic substances, therefore this is not technically feasible at this time.</p> <p>Economic Feasibility: Not Applicable.</p>

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for PM2.5.

Certification by Highest Ranking Employee

Attached.

Certification by Licensed Planner

Attached.

Appendix B

Plan Summary PM10

Appendix B Plan Summary PM10

Basic Facility Information

Name and CAS # of Substance	PM10	NA
Facility Identification and Site Address		
Company Name	Compass Minerals Canada	
Facility Name	Goderich Salt Mine	
Facility Address	Physical Address:	Mailing Address: (if different)
	300 North Harbour Road Goderich, Ontario N7A 3Y9	
Spatial Coordination of Facility	441485 m E 4844024 m N	
Number of Employees	475	
NPRI ID	7686	
Ontario MOE ID Number	N/A	
Parent Company (PC) Information		
PC Name and Address	Compass Minerals	
Percent Ownership for each PC	9900 West 109th Street, Suite 100 Overland Park, Kansas USA, 66210 100%	
Business Number for PC		
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	21 Mining, quarrying, and oil and gas extraction	
4 Digit NAICS Code	2123 – Non-metallic mineral mining and quarrying	
6 Digit NAICS Code	212393 – Salt mining	
Company Contact Information		
Facility Public Contact	Chris Grande, Technical Supervisor	
	grande@compassminerals.com	
	Phone: (519) 524-8351 Fax (519) 524-2261	Same address as facility
Facility Technical Contact	Same as Public Contact	Same as facility address
Company Coordinator Contact	Same as Public Contact	
Person who Prepared the Plan: (if different from the Coordinator)	Same as Public Contact	
Highest Ranking Employee	Same as Public Contact	
Planner Information:		
Planner Responsible for Making Recommendations	Dana Lauder	651 Colby Drive Waterloo, Ontario N2V 1C2
	Planner License No. dana.lauder@ghd.com	TSRP0014
	Phone: (519) 884-0510 ext. 2299	
Planner Responsible for Certification	(same as planner responsible for making recommendations)	

Toxic Reduction Policy Statement of Intent

Compass Minerals Canada (Compass) is committed to playing a leadership role in protecting the environment. Compass does not intend to reduce the creation of PM10. Compass only creates PM10, therefore, this plan does not address reducing its use.

Reduction Objectives

Compass prides itself on technological innovation in order to process, store, and ship salt in an environmentally responsible manner. Compass will strive to eliminate the creation of PM10 at the facility. Further, this plan will determine the technical and economic feasibility of each option to determine which, if any, are viable for implementation at this time.

Description of Facility

Compass owns and operates the world's largest salt mine. The salt (mineral name: Halite) is found at the 1,760-foot level below surface in the Michigan Basin salt bed. The salt is drilled, blasted, and conveyed to the Underground Processing Mill, where the salt products are produced. All product is hoisted to surface via two production hoists. Salt is conveyed to designated storage buildings via covered conveyor galleries prior to shipment. Product is dispatched and shipped via vessel, railcar, and truck, depending on the product, tonnage, and customer expectation.

The Facility operates 24 hours a day, 7 days per week.

Toxic Substance Reduction Options

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Toxic Substance Reduction Category	Option: Identification and Description
1. Materials or feedstock substitution	No option identified: Compass' salt (mineral name: Halite) is found at the 1,760-foot level below surface in the Michigan Basin salt bed. The salt is drilled, blasted, and conveyed to the Underground Processing Mill, where the salt products are produced. All toxic substances are created and released from various processes such as the baghouse dust collectors, silos, and combustion equipment. No PM10 is present in any of the raw materials. Therefore, no potential reduction options were identified in this category.
2. Product design or reformulation	No option identified: Compass' formulation for the production of salt is based on past research, training, and analysis used to create salt products which appeal to their customers. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3. Equipment or Process Modification	No option identified: Compass conducts regular preventative maintenance on all equipment to ensure it is operating efficiently. The process is specialized and therefore process modifications are not possible. While Compass has developed options for reducing particulate emissions in certain areas of their operation, these identified areas are not significant contributors compared to the Facility-wide emissions.

Toxic Substance Reduction Category	Option: Identification and Description
4. Spill and Leak prevention	No option identified: All of the PM10 at Compass is created and released to the atmosphere. The nature of the contaminant does not allow for spills or leaks. The Facility is already doing everything possible to reduce the creation and release of PM10.
5. On-site reuse or recycling	No option identified: The PM10 created in the processes are released to air and cannot be reused or recycled in the manufacturing process. Therefore, no options can be identified.
6. Improve inventory management or purchasing techniques	No option identified: Compass' inventory and hours of operation is controlled by customer demand. The Facility's creation of PM10 is based on hours of operation and therefore is not dependent on inventory management.
7. Training or improved operating practices	<p>Compass has continued work on a six sigma project to reduce salt "fines" generation. This process takes all processes into account that would generate "fines", which in our case starts at the point of where the salt is blasted underground through all material handling processes up to and including final load-out to vessel, rail and truck customers. The effect on PM emissions has not been confirmed to date.</p> <p>Estimated Reductions: The effect of this option on PM emissions has not been confirmed to date.</p> <p>Technical Feasibility: Compass is currently undertaking research to determine if this reduction option is technically feasible for the potential reduction of toxic substances, therefore this is not technically feasible at this time.</p> <p>Economic Feasibility: Not Applicable.</p>

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for PM10.

Certification by Highest Ranking Employee

Attached.

Certification by Licensed Planner

Attached.

Appendix C

Plan Summary Total PM

Appendix C Plan Summary Total PM

Basic Facility Information

Name and CAS # of Substance	Total PM	NA
Facility Identification and Site Address		
Company Name	Compass Minerals Canada	
Facility Name	Goderich Salt Mine	
Facility Address	Physical Address:	Mailing Address: (if different)
	300 North Harbour Road Goderich, Ontario N7A 3Y9	
Spatial Coordination of Facility	441485 m E 4844024 m N	
Number of Employees	475	
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Ontario MOE ID Number	N/A	
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Person who Prepared the Plan: (if different from the Coordinator)	Same as Public Contact	
Highest Ranking Employee	Same as Public Contact	
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Planner Responsible for Certification	(same as planner responsible for making recommendations)	

Toxic Reduction Policy Statement of Intent

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Reduction Objectives

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2. Product design or reformulation	No option identified: Compass' formulation for the production of salt is based on past research, training, and analysis used to create salt products which appeal to their customers. A change to the product design or reformulation is not possible under the current conditions at the Facility.
3. Equipment or Process Modification	No option identified: Compass conducts regular preventative maintenance on all equipment to ensure it is operating efficiently. The process is specialized and therefore process modifications are not possible. While Compass has developed options for reducing particulate emissions in certain areas of their operation, these identified areas are not significant contributors compared to the Facility-wide emissions.

Toxic Substance Reduction Category	Option: Identification and Description
4. Spill and Leak prevention	No option identified: All of the Total PM at Compass is created and released to the atmosphere. The nature of the contaminant does not allow for spills or leaks. The Facility is already doing everything possible to reduce the creation and release of Total PM.
5. On-site reuse or recycling	No option identified: The Total PM created in the processes are released to air and cannot be reused or recycled in the manufacturing process. Therefore, no options can be identified.
6. Improve inventory management or purchasing techniques	No option identified: Compass' inventory and hours of operation is controlled by customer demand. The Facility's creation of Total PM is based on hours of operation and therefore is not dependent on inventory management.
7. Training or improved operating practices	<p>Compass has continued work on a six sigma project to reduce salt "fines" generation. This process takes all processes into account that would generate "fines", which in our case starts at the point of where the salt is blasted underground through all material handling processes up to and including final load-out to vessel, rail and truck customers. The effect on PM emissions has not been confirmed to date.</p> <p>Estimated Reductions: The effect of this option on PM emissions has not been confirmed to date.</p> <p>Technical Feasibility: Compass is currently undertaking research to determine if this reduction option is technically feasible for the potential reduction of toxic substances, therefore this is not technically feasible at this time.</p> <p>Economic Feasibility: Not Applicable.</p>

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for Total PM.

Certification by Highest Ranking Employee

Attached.

Certification by Licensed Planner

Attached.

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