Puite, Tammie (DEQ)

From: Jarrett, Stephanie A. <sajarrett@ftch.com>
Sent: Thursday, December 27, 2018 1:01 PM
To: DEQ-ROP
Cc: Dickman, Rob (DEQ); Cortney Schmidt (cortney.schmidt@vcimentos.com)
Subject: SRN B1559 - ROP Renewal Application
Attachments: ROP_Renew_SMC_2018_1227_FNL.PDF; 01a_AI-PartF_B1559 Final 8-20-14_Markup1.doc

Please find the ROP Renewal Application for the facility identified below attached to this email.

St. Marys Cement, Inc. (US)
16000 Bells Bay Road,
Charlevoix, Michigan 49720
SRN: B1559

Application documents (including application forms, and supporting documentation) for ROP No. MI-ROP-B1559-2014 are attached to this email. An administratively complete application is due no later than February 20, 2019. A hard copy of the application with original signature will be delivered to the Cadillac District Office on December 28, 2019. If you have questions or problems opening the attached files, please contact me.

Thanks,
Stephanie

Stephanie A. Jarrett, P.E. | Senior Environmental Engineer| 248.324.2146| www.ftch.com
Fishbeck, Thompson, Carr & Huber, Inc. | Engineers, Scientists, Architects, Constructors

December 27, 2018
Project No. 180985

Mr. Shane Nixon
Cadillac District Office
Air Quality Division
Michigan Department of Environmental Quality
120 W Chapin Street
Cadillac, MI 49601-2158

Re: Renewable Operating Permit (ROP) Renewal Application
St. Marys Cement, Inc. (US) - MI-ROP-B1559-2014

Dear Mr. Nixon:

Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) has prepared an ROP renewal application for MI-ROP-B1159-2014 for St. Marys Cement, Inc. (US) (SMC), located at 16000 Bells Bay Road, Charlevoix, Charlevoix County, Michigan 49720. The renewal application is due no later than February 20, 2019.

This application includes:

- MDEQ ROP Application Form EQP 6000
- MDEQ Additional Information Forms EQP 5774
- A marked up copy of MI-ROP-B1159-2014
- Criteria pollutant potential to emit (PTE) calculations
- Applicable Plans

An electronic copy of the application and supporting documents is also being provided to the MDEQ, which reduces the MDEQ application administrative completeness review to 15 days.

If you have any questions or require additional information, please contact me at 248.324.2146 or sajarrett@ftch.com.

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

Stephanie A. Jarrett

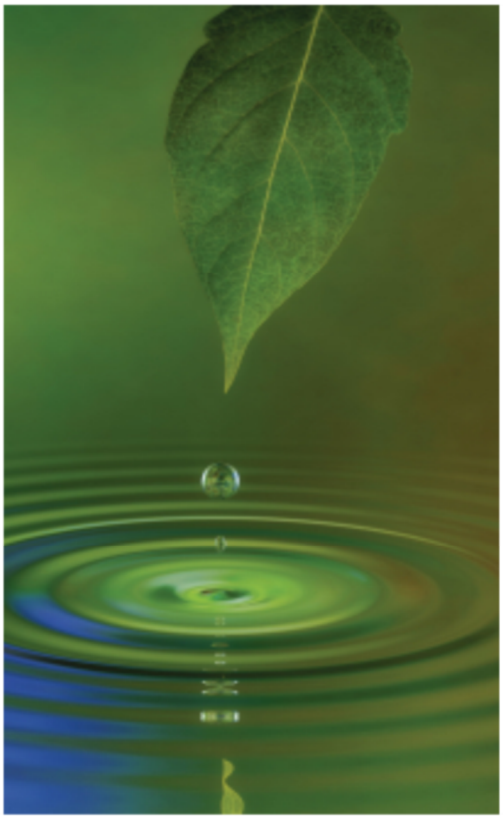
Stephanie A. Jarrett, PE

aes
Attachments
By email and UPS
cc/att: Mr. Cortney Schmidt

Renewable Operating Permit Renewal Application
MI-ROP-B1559-2014

St. Marys Cement, Inc. (US)
16000 Bells Bay Road, Charlevoix
Charlevoix County, Michigan 49720

Project No. 181985
December 27, 2018


Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors

RENEWABLE OPERATING PERMIT
RENEWAL APPLICATION FORM

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.

GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at http://michigan.gov/air (select the Permits Tab, "Renewable Operating Permits (ROP)/Title V", then "ROP Forms & Templates").

PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

SOURCE INFORMATION

SRN	SIC Code	NAICS Code	Existing ROP Number	Section Number (if applicable)
B1559			MI-ROP-B1559-2014	

Source Name: St. Marys Cement, Inc. (US)

Street Address: 16000 Bells Bay Road

City	State	ZIP Code	County
Charlevoix	MI	49720	Charlevoix

Section/Town/Range (if address not available):

Source Description: Cement manufacturing facility.The site includes: quarry operations, conveying/storage systems for raw materials, grinding/blending raw materials, preheater tower, kiln, clinker cooler/conveying/storage/grinding, cement storage, & shipping.

☐ Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.

OWNER INFORMATION

Owner Name	Section Number (if applicable)
St. Marys Cement U.S. LLC, a Delaware limited liability company	

Mailing address (☐ check if same as source address): 9333 Dearborn St.

City	State	ZIP Code	County	Country
Detroit	MI	48209	Wayne	USA

☐ Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

SRN: B1559	Section Number (if applicable):

PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

CONTACT INFORMATION

Contact 1 Name			Title	
Cortney Schmidt			Environmental Manager	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
231.237.1342		cortney.schmidt@vcimentos.com		

Contact 2 Name (optional)			Title	
Stephanie Jarrett			Senior Environmental Engineer	
Company Name & Mailing address (☐ check if same as source address)				
Fishbeck, Thompson, Carr & Huber, Inc. (FTCH), 39500 MacKenzie Drive, Suite 100				
City	State	ZIP Code	County	Country
Novi	MI	48377	Wayne	USA
Phone number		E-mail address		
248.324.2146		sajarrett@ftch.com		

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name			Title	
Matthew Simon			Operational Manager	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
231.547.9971		matthew.simon@vcimentos.com		

Responsible Official 2 Name (optional)			Title	
Company Name & Mailing address (☐ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		

☐ Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID:

SRN: B1559	Section Number (if applicable):

PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

Listing of ROP Application Contents. Check the box for the items included with your application.	
☒ Completed ROP Renewal Application Form (and any AI-001 Forms) (required)	☒ Compliance Plan/Schedule of Compliance
☒ Mark-up copy of existing ROP using official version from the AQD website (required)	☐ Stack information
☒ Copies of all Permit(s) to Install (PTIs) that have not been incorporated into existing ROP (required)	☐ Acid Rain Permit Initial/Renewal Application
☒ Criteria Pollutant/Hazardous Air Pollutant (HAP) Potential to Emit Calculations	☒ Cross-State Air Pollution Rule (CSAPR) Information
☐ MAERS Forms (to report emissions not previously submitted)	☐ Confidential Information
☐ Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP	☒ Paper copy of all documentation provided (required)
☐ Compliance Assurance Monitoring (CAM) Plan	☒ Electronic documents provided (optional)
☒ Other Plans (e.g., Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.)	☐ Other, explain:

Compliance Statement	
This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☐ Yes ☒ No
This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☐ Yes ☒ No
This source will meet in a timely manner applicable requirements that become effective during the permit term.	☒ Yes ☐ No
The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.	
If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.	

Name and Title of the Responsible Official (Print or Type)

Matthew Simon

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

12/18/18

Signature of Responsible Official **Date**

SRN: B1559	Section Number (if applicable):

PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

C1.	Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application.	☐ Yes ☒ No
C2.	Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82)	☐ Yes ☒ No
C3.	Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68) If Yes, a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA?	☐ Yes ☒ No ☐ Yes ☐ No
C4.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the potential to emit (PTE) for criteria pollutant (CO, NOx, PM10, PM2.5, SO_2, VOC, lead) emissions? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers, or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. If No, criteria pollutant potential emission calculations do not need to be included.	☒ Yes ☐ No
C5.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the PTE for hazardous air pollutants (HAPs) regulated by Section 112 of the federal Clean Air Act? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. Fugitive emissions must be included in HAP emission calculations. If No, HAP potential emission calculations do not need to be included.	☒ Yes ☐ No
C6.	Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)? If Yes, identify the specific emission unit(s) subject to CSAPR on an AI-001 Form.	☐ Yes ☒ No
C7.	Are any emission units subject to the federal Acid Rain Program? If Yes, identify the specific emission unit(s) subject to the federal Acid Rain Program on an AI-001 Form. Is an Acid Rain Permit Renewal Application included with this application?	☐ Yes ☒ No ☐ Yes ☒ No
C8.	Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)? If Yes, identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to the MDEQ, one must be included with the ROP renewal application on an AI-001 Form. If the CAM Plan has been updated, include an updated copy. Is a CAM plan included with this application? If a CAM Plan is included, check the type of proposed monitoring included in the Plan: 1. Monitoring proposed by the source based on performance of the control device, or 2. Presumptively Acceptable Monitoring, if eligible	☐ Yes ☒ No ☐ Yes ☒ No ☐ ☐
C9.	Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement? If Yes, then a copy must be submitted as part of the ROP renewal application.	☒ Yes ☐ No
C10.	Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable? If Yes, then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form.	☒ Yes ☐ No

☒ Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: **AI-**PartC

SRN: B1559	Section Number (if applicable):

PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☒ Yes ☐ No

If No, go to Part E.

Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).

Emission Unit ID	**Emission Unit Description**	**Rule 212(4) Citation** [e.g. Rule 212(4)(c)]	**Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)]
EUCOMBUSTION	Miscellaneous indirect heating LPG combustion sources less than 50 MMBtu/hr	212(4)(b)	282(2)(b)(i)
EUGASOLINE	1000 gallon double walled gasoline storage tank used to dispense fuel for mobile sources	212(4)(c)	284(2)(g)(i)
EUPROPANE	Twelve 500 to 3700 gallon stationary LPG tanks.	212(4)(c)	284(2)(b)

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID: **AI-**

SRN: B1559	Section Number (if applicable):

PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to **all** emission units and **all** applicable requirements in the existing ROP.

E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP? If Yes, identify changes and additions on Part F, Part G and/or Part H.	☒ Yes ☐ No
E2. For each emission unit(s) identified in the existing ROP, all stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were not reported in the most recent MAERS reporting year? If Yes, identity the stack(s) that was/were not reported on applicable MAERS form(s).	☐ Yes ☒ No
E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI? If Yes, complete Part F with the appropriate information.	☒ Yes ☐ No
E4. Have any emission units identified in the existing ROP been dismantled? If Yes, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form.	☐ Yes ☒ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: **AI-**

SRN: B1559	Section Number (if applicable):

PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. If No, go to Part G. ☒ Yes ☐ No

Permit to Install Number	Emission Units/Flexible Group ID(s)	Description (*Include Process Equipment, Control Devices and Monitoring Devices*)	Date Emission Unit was Installed/ Modified/ Reconstructed
115-15	EUBLENDSILO	Raw feed from mill transferred to blending silo before transfer to kiln system. PM controlled by baghouse.	9/5/2018
140-15	EUSOLIDFUELSYSTEM	Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity.	9/5/2018
140-15	EUINLINEKILN	Removes FGKILNRAWMILLS and adds EUINLINEKILN to be consistent with 40 CFR Part 63 Subpart LLL	2/23/2018 9/5/2018
140-15	EUCLINKERCOOL	The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and baghouse.	9/5/2018
140-15	EUFINISHMILL4	Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.	TBD
140-15	EUCEMENTHAND&STO	Includes: pneumatic conveyors; silos #1- 12, 26- 29, 6A; air slides #1-12 & below silos #1-6; dust collectors top of old silos #1-3, new silo #4, and below silos #1-6; bucket elevator with dust collector; storage dome & dust collector; truck loading & dust collector, and ship loading.	2/1/1978 12/1/1999 9/5/2018
140-15	EURAWMATHANDSTOR	Raw material loading, unloading and raw material transfer, including the material handling equipment that takes a feed into the kiln feed shelf. Also contains spill conveyors under the bottom ash feeder.	6/1/1967 9/5/2018
140-15	EUCKDHANDSTOR	Equipment associated with handling and storage of cement kiln dust. Includes: cement kiln dust elevator, north pug tank, south pug tank, and pug mill. Also includes all truck loading at 80 percent removal efficiency	2/23/1978 10/1/1985 9/5/2018
140-15	FGPROJECT2016	Add EUSOLIDFUELSYSTEM, EUFINISHMILL4, changes to EUCLINKERCOOLER, EUCEMENTHAND&STO, EUCKDHANDSTOR	9/5/2018

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. ☒ Yes ☐ No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. ☒ Yes ☐ No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identity the stack(s) that were not reported on the applicable MAERS form(s). ☒ Yes ☐ No

SRN: B1559	Section Number (if applicable):

PART F: PERMIT TO INSTALL (PTI) INFORMATION - Continued

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. ☐ Yes ☒ No

Comments:
The Following EUs have new applicable stacks/vents that were not reported to MAERS since the emission units were not installed prior to the RY2017 MAER report, these stacks will be added for the RY2018 MAERS:
EUBLENDSILO
EUSOLIDFUELSYSTEM
EUCLINKERCOOLER
EUFINISHMILL4
FGNONKILNFACILITY – new stacks

☒ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**PartF

SRN: B1559	Section Number (if applicable):

PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. ☐ Yes ☒ No

Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.

Origin of Applicable Requirements	**Emission Unit Description – *Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices***	**Date Emission Unit was Installed/ Modified/ Reconstructed**
☐ Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation		
☐ Rule 287(2)(c) surface coating line		
☐ Rule 290 process with limited emissions		

Comments:
FGCOLDCLEANERS is already included in the existing ROP.

☐ Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

SRN: B1559	Section Number (if applicable):

PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below.	☒ Yes ☐ No
H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP.	☒ Yes ☐ No
H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP.	☒ Yes ☐ No
H4. Does the source propose to add new state or federal regulations to the existing ROP? If Yes, on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify each state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement.	☒ Yes ☐ No
H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If Yes, list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP. **Consent Decree Case No. 1:06 cv 607 has been terminated, and conditions removed from ROP.**	☐ Yes ☒ No
H6. Does the source propose to add, change and/or delete **source-wide** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☒ No
H7. Are you proposing to **streamline** any requirements? If Yes, identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below.	☐ Yes ☒ No

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H8. Does the source propose to add, change and/or delete **emission limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT Emission limits incorporated into EUINLINEKILN

H9. Does the source propose to add, change and/or delete **material limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

H10. Does the source propose to add, change and/or delete **process/operational restriction** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT requirements incorporated into EUINLINEKILN

H11. Does the source propose to add, change and/or delete **design/equipment parameter** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT CMS and CEMS requirements incorporated into EUINLINEKILN

H12. Does the source propose to add, change and/or delete **testing/sampling** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT Testing requirements incorporated into EUINLINEKILN

H13. Does the source propose to add, change and/or delete **monitoring/recordkeeping** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT Monitoring requirements incorporated into EUINLINEKILN

H14. Does the source propose to add, change and/or delete **reporting** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

PC MACT General reporting requirements incorporated into EUINLINEKILN

Consent Decree Case No. 1:06 cv 607 has been terminated, and conditions removed from ROP.

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☒ No
H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☒ No
H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes ☒ No
☒ Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-**PartH	

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: B1559	Section Number (if applicable):

1. Additional Information ID
AI-Markup

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Marked up copy of ROP Attached.

Page of

Michigan Department of Environmental Quality
Air Quality Division

EFFECTIVE DATE: August 20, 2014

ISSUED TO:

~~**St. Barbara Cement, Inc.**~~
St. Marys Cement, Inc. (US)

State Registration Number (SRN): B1559

LOCATED AT:

16000 Bells Bay Road, Charlevoix, Charlevoix County, Michigan 49720

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-B1559-2014

Expiration Date: August 20, 2019

Administratively Complete ROP Renewal Application Due Between
February 20, 2018 and February 20, 2019

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-B1559-2014

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

_____
Janis Ransom, Cadillac District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environmental Quality (MDEQ) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a source-wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements will be identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined or subsumed, or is state only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

This permit does not relieve the permittee from any responsibilities or obligations imposed on the permittee, at this source, under Consent Decree Case No. 1:06-cv-607 entered on December 12, 2006 between the United States of America and the permittee.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following: **(R 336.1301(1))**
    a. A 6 minute average of 20 percent opacity, except for one 6 minute average per hour of not more than 27 percent opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate: **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following: **(R 336.1213(3)(c))**

a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA. **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**
    d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**

c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.

37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR, Part 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR, Part 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR, Part 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR, Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule. [2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA. [2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, MDEQ. [2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. [2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

SOURCE-WIDE CONDITIONS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the stationary source unless the Preventative Maintenance/Malfunction Abatement Plan (MAP) is implemented and maintained.[2] **(R 336.1205, R 336.1911)**

2. The permittee shall not operate the stationary source unless the program for continuous fugitive emissions control for all facility roadways, the facility yard, all storage piles, and all material handling operations is implemented and maintained as specified in the approved Fugitive Dust Control Program (FDCP).[2] **(R 336.1205, R 336.1371, R 336.1372, R 336.1901)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep records of all repairs initiated as a result of inspections pursuant to the MAP. All records shall be made available to the Department upon request.[2] **(R 336.1911)**

2. The permittee shall keep the records specified in the FDCP. All records shall be made available to the Department upon request.[2] **(R 336.1371(2)(c), R 336.1372)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.

(R 336.1213(4)(c))

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the approved MAP, or an alternate plan approved by the AQD District Supervisor. The plan shall include the following:
   a. *Procedures for maintaining and operating in a satisfactory manner the equipment covered by the plan, including add-on air pollution control devices;*
   b. *Procedures for monitoring equipment during malfunction events; and*
   c. *A program for corrective action for such events.*

   If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, including an event involving equipment not specifically addressed in the approved plan, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor.[2] **(R 336.1911)**

2. The permittee shall comply with the approved FDCP, or an alternate plan approved by the AQD District Supervisor. If the plan fails to address or inadequately addresses an event involving fugitive dust at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor.[2] **(R 336.1371, R 336.1372)**

3. The permittee shall comply with the requirements of USEPA Consent Decree Case No. 1:06-cv-607. The conditions contained in this ROP for which the Consent Judgment is the only identified underlying applicable requirement shall be considered null and void upon the effective date of termination of the Consent Judgment. **(Consent Decree Case No. 1:06-cv-607)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUQUARRYFUGITIVE	This emission unit includes all sources within the Quarry, including screening, fugitives, roads and overburden. It also includes drilling and blasting.	6/1/1967	FGQUARRY FGALTSAND/SOIL
EUPRIMARYCRUSH	Represents equipment associated with primary crushing and conveying of material out of the quarry.	6/1/1967	FGQUARRY FGALTSAND/SOIL
EUHAMMER	3,000 pounds of force per hammer cycle primary crusher rock breaker	1/1/2006	FGQUARRY
EUSECONDARYCRUSH	This emission unit includes: No. 1 north vibrating screen, No. 2 south vibrating screen, secondary crusher and dust collector, conveyor, and transfer house.	6/1/1967	FGQUARRY FGALTSAND/SOIL
~~EUPORTABLECRUSH~~	~~A 100 ton per hour portable nonmetallic mineral crushing facility consisting of a crusher and associated process equipment including grinding mills, loading operations, and any other material handling equipment operated at the site. The crusher shall be equipped with appropriate dust suppression equipment or shall be located within an enclosed building. Operation of the control equipment is required only when necessary to meet applicable emission limits.~~	~~1/5/2007~~	~~NA~~
EURAWMATHANDSTOR	Raw material loading, unloading and raw material transfer, including the material handling equipment that takes a feed into the kiln feed shelf. Also contains spill conveyors under the bottom ash feeder.	6/1/1967 9/~~15~~/2018	FGNONKILNFACILITY
~~EURAWMILLS~~	~~Includes: storage and handling equipment, weigh feeder, raw mill elevator to 501 belt and dust collector, 501 belt, blending silo and dust collector, blending air slides, dynamic classifier, raw mill, and baghouse.~~	~~2/23/1978~~	~~FGKILNRAWMILLS~~ ~~FGALTSAND/SOIL~~

Commented [YDM1]: Raw Mills are part of EUINLINEKILN

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUBLENDSILO	Raw feed from the raw mill is transferred to the blending silo where it will be stored and stirred to obtain a more uniform mixture of the various ingredients before it is transferred to the kiln system (at the top of the calciner/preheater). Particulate Matter emissions are controlled by two pulse-jet baghouses at the transfer point of raw feed from the raw mill into the silo and the transfer point of blended and uniform raw feed from the silo out to the conveyance equipment which delivers the raw feed to the top of the calciner/preheater.	9/~~15~~/2018	FGNONKILNFACILITY, FGALTSAND/SOIL
~~EUKILN~~	~~Represents the in-line calciner with indirect firing, in-line kiln with indirect firing and equipment associated with the treatment of exhaust gases including the north conditioning tower, south conditioning tower, the main stack baghouse, and bypass stack baghouse.~~	~~2/23/1978~~	~~FGKILNRAWMILLS FGALTSAND/SOIL~~
EUSOLIDFUELSYSTEM	Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos.	9/~~15~~/2018	FGNONKILNFACILITY

Commented [YDM2]: T&C from PTI 115-15 are included in FGNONKILNFACILITY.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUINLINEKILN	The in-line Raw Mill kiln system uses a proportioning system for grinding and mixing sources of iron, silica, calcium, and alumina. These raw materials are added to the Raw Mill where the material is ground, and heated creating a Kiln Feed mixture, which is conveyed to EUBLENDSILO for blending and storage. Kiln Feed is transferred from EUBLENDSILO via the kiln feed belt scale, elevator, and fed to upper stages of the pre-heating tower. The Kiln Feed is calcined in the preheater tower, the source of heat for this reaction is generated in both the Calciner and Kiln, the Kiln is the location where the feed is heated to a point where the calcined feed is melted and then cooled to start the formation of clinker. A tertiary duct transfers hot exhaust gases from the clinker cooler to the calciner portion of the preheater tower. Control equipment associated with in-line kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses. The calciner and kiln have been designed to use traditional solid and liquid fuels and various alternative fuels including asphalt flakes, plastic and small quantities of cellulose ffibers.	2/23/1978 9/~~1~~5/2018	NA
EUCLINKERHAND	Represents equipment associated with the handling of clinker into and out of the cooler. The emission unit includes: gravel bed clinker dust bucket elevator, clinker cooler outlet pan conveyor/elevator dust collector, clinker cooler almund elevators, clinker conveyor belt 89, enclosed clinker drags, M3 belt conveyor and reclaim system, clinker heat exchanger, clinker ladder, clinker domes, clinker silos, clinker handling belts, and heat exchanger transporter pods.	6/1/1967	FGNONKILNFACILITY

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUCLINKERCOOLER	The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and baghouse.~~Represents equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, gravity cooler, gravity cooler dust collector, clinker heat exchanger, and heat exchanger transporter pods.~~	2/23/1978 9/~~1~~5/2018	~~FGKILNRAWMILLS~~NA
EUFINISHMILL1	The emission unit includes: #1 Finish Mill Clinker Feeder with dust collector (M161B), #1 Finish Mill Clinker Feeder with dust collector (M163B), gypsum silo 23, fringe silo 24, #1 Finish Mill with dust collector.	6/1/1967	FGFINISHMILLS, FGNONKILNFACILITY
EUFINISHMILL2	The emission unit includes: #2 Finish Mill Clinker Feeder with dust collector (M194B), #2 Finish Mill Clinker Feeder with dust collector (M196B), gypsum silo 25, #2 Finish Mill with dust collector.	6/1/1967	FGFINISHMILLS, FGNONKILNFACILITY
EUFINISHMILL3	The emission unit includes: #3 Finish Mill Clinker Feeder with dust collector (M063B), #3 Finish Mill Clinker Feeder with dust collector (M067B), gypsum silo 21, fringe silo 22, limestone silo 18, #3 Finish Mill with dust collector.	1/9/1966	FGFINISHMILLS, FGNONKILNFACILITY
EUFINISHMILL4	Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.	~~9/1/2018~~TBD	FGFINISHMILLS, FGNONKILNFACILITY
EUCEMENTHAND&STO	Includes: pneumatic conveyors; silos #1- 12, 26-29, 6A; air slides #1-12 & below silos #1-6; dust collectors top of old silos #1-3, SE, NW and below silos #1-6; bucket elevator with dust collector; storage dome & dust collector; truck loading & dust collector, and ship loading.	2/1/1978 12/1/1999 9/~~1~~5/2018	FGNONKILNFACILITY
EUCOALSYSTEM	Equipment associated with the storage, crushing, and transport of coal. Includes: coal and pet coke storage piles, coal crusher, M40 belt when carrying solid fuels, flash furnace solid fuels mill, and kiln solid fuels mill.	6/1/1967	FGNONKILNFACILITY
EUCKDHANDSTOR	Equipment associated with handling and storage of cement kiln dust. Includes: cement kiln dust elevator, north pug tank, south pug tank, and pug mill. Also includes all truck loading at 80 percent removal efficiency.	2/23/1978 10/1/1985 9/~~1~~5/2018	FGNONKILNFACILITY
EUCOLDCLEANER	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	6/1/1967	FGCOLDCLEANERS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
~~EUKILNDONKEY~~	~~Existing Detroit Diesel CI emergency stationary reciprocating internal combustion engine (RICE) that has a rating of 238 brake horsepower (HP) and no emission controls.~~	~~<2006~~	~~FGMACTZZZZEMERGENCY~~
EUEMERGENCYGEN	Existing Cummins CI emergency stationary reciprocating internal combustion engine (RICE) that has a rating of 68 brake horsepower (HP) and no emission controls.	2005	FGMACTZZZZEMERGENCY
EUEMERGENCYGEN2	Diesel fuel-fired emergency electric generator installed in 2018. This table contains requirements of the New Source Performance Standards for Stationary Compression Ignition - Internal Combustion Engines, 40 CFR Part 60, Subpart IIII that applies only to this diesel fuel-fired emergency generator. This emergency diesel generator is less than 10 MM BTU/hr and exempt under Rule 285(g).	2018	NA

Commented [JSA3]: Dismantled

EUPORTABLECRUSH
EMISSION UNIT CONDITIONS

DESCRIPTION

This emission unit consists of a 100 ton per hour portable nonmetallic mineral crushing facility consisting of a crusher and associated process equipment including grinding mills, loading operations, and any other material handling equipment operated at the site.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Water spray bars or enclosed building.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible Emissions	15 percent opacity[2]	NA	Crusher	SC VI.3	R 336.1205, R 336.1301, R 336.1901, 40 CFR 60.672(b) and Table 3
2. Visible Emissions	10 percent opacity[2]	NA	Conveyors/Transfer points	SC VI.3	R 336.1205, R 336.1301, R 336.1901, 40 CFR 60.672(b) and Table 3
3. Visible Emissions	5 percent opacity[2]	NA	Wheel loaders and truck traffic, and material storage piles	SC VI.3	R 336.1205, R 336.1301, R 336.1901
4. Visible Emissions	10 percent opacity[2]	NA	Any other process equipment which is part of the nonmetallic mineral crushing facility or related processes	SC VI.3	R 336.1205, R 336.1301, R 336.1901, 40 CFR 60.672(b) and Table 3

There shall be no visible emissions from any equipment enclosed within a building.[2] **(R 336.1205, R 336.1301, R 336.1901, 40 CFR 60.672(e)(1))**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Non-metallic mineral	876,000 tons per year.[2]	NA	EUPORTABLECRUSH	SC VI. 1	R 336.1205

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not crush any asbestos tailings or asbestos containing waste materials in

EUPORTABLECRUSH.[2] **(40 CFR 61.141)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The crusher shall be equipped with appropriate dust suppression equipment which may include spray bars or shall be located within an enclosed building. The control equipment shall be properly operated as necessary to comply with all emission limits.[2] **(R 336.1205, R 336.1301, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep, in a satisfactory manner, daily and annual records of the amount of material processed and the source of the material.[2] **(R 336.1213(3), R 336.1205)**

2. The permittee shall verify that any material processed by EUPORTABLECRUSH does not contain asbestos tailings or asbestos containing waste materials.[1] **(R 336.1213(3))**

3. Verification of visible emissions from EUPORTABLECRUSH shall be performed once daily while the process is operating using a 6 minute non-certified USEPA Method 22 visible emissions reading. If visible emissions are observed, a 15 minute USEPA Method 9 (Method 9D for roads) test shall be conducted within one hour to determine compliance with the emission limits in SC I.1-4. **(R 336.1205, R 336.1301, R 336.1901, 40 CFR 60.672(b) and Table 3)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. In the event that EUPORTABLECRUSH is removed from this location, the permittee may return, install and operate this equipment at this location pursuant to the conditions in this Renewable Operating Permit, provided that all of the following conditions are met:
   a. There are no outstanding and unresolved compliance issues, resulting from written notification by the AQD, involving either EUPORTABLECRUSH or this location.[2]
   b. The permittee provides written notification to the AQD District Supervisor, prior to the removal of this equipment, stating an intent to return and operate EUPORTABLECRUSH within 12 months of its removal from this location.[2]
   c. The permittee provides written notification to the AQD District Supervisor, at least one week prior to the return of EUPORTABLECRUSH, that the equipment is scheduled to return to this location.[2]
   d. The permittee returns EUPORTABLECRUSH to this location within 12 months of its removal.[2] **(Act 451, Part 55, 324.5505, R 336.1205, R 336.1901)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

The following conditions apply to: EUSOLIDFUELSYSTEM

Commented [JSA4]: No changes from PTI 140-15

DESCRIPTION: Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
COKEMIL1 - Petcoke Mill baghouse

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.1 SC VI.2	R 336.1301, 40 CFR 60.254
2. PM	0.010 gr/dscf	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.2	R 336.1331, 40 CFR 60.254
3. PM10	3.93 pph	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.3	R 336.2803, R 336.2804
4. PM2.5	1.86 pph	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.3	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall maintain and operate EUSOLIDFUELSYSTEM according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUSOLIDFUELSYSTEM unless the fabric filter with broken bag leak detectors or an alternative monitoring method approved in writing by the AQD District Supervisor is installed and/or implemented, maintained and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with a PM/MAP. **(336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup of EUSOLIDFUELSYSTEM, the permittee shall comply with federal Standards of Performance for New Stationary Sources which require evaluation of visible emissions from SVCOKEMIL1 of EUSOLIDFUELSYSTEM, at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Y. Thereafter, a new performance test must be conducted within 90 operating days of the previous test if the 6-minute average opacity reading exceeded half the applicable opacity limit or within 12 calendar months of the previous test if the 6-minute average opacity reading was equal to or less than half the applicable opacity limit. Visible emission observation procedures must have prior approval by the AQD Technical Programs Unit and District Office. No less than ten (10) days prior to the anticipated test date, the permittee shall notify the AQD District Supervisor of the test date. If after the anticipated test date has been submitted, there is a delay in conducting the test, the permittee shall submit to the AQD District Supervisor notice of the new test date. This notification shall take place a minimum of three (3) days prior to the rescheduled test taking place. Verification of visible emissions includes the submittal of a complete report of opacity observations to the AQD Technical Programs Unit and District Office within 30 days following the last date of the test. As an alternative to this performance test the permittee may elect to comply with daily observations and performance testing once every 5 years, as described in SC VI.1 and VI.2. **(R 336.1301, 40 CFR 60.255(b)(2), 40 CFR 60.257, 40 CFR Part 60 Subparts A & Y)**

2. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUSOLIDFUELSYSTEM, the permittee shall verify PM emission rates from SVCOKEMIL1 of EUSOLIDFUELSYSTEM concurrently with visual emissions test, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Y. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1331, 40 CFR 60.255(d), 40 CFR 60.257, 40 CFR Part 60 Subpart Y)**

3. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUSOLIDFUELSYSTEM, the permittee shall verify PM10 and PM2.5 emission rates from SVCOKEMIL1 of EUSOLIDFUELSYSTEM by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing of once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. As an alternative to visual emissions performance testing in SC V.1, the permittee may elect to do the following monitoring for SVCOKEMIL1 of EUSOLIDFUELSYSTEM:
   a) Conduct one daily 15-second observation each operating day (during normal operation) when the solid fuel preparation and processing plant is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in §2.3 of Method 22 of appendix A-7 of 40 CFR Part 60. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from SVCOKEMIL1 of EUSOLIDFUELSYSTEM. If visible emissions are observed, a Method 9, of appendix A-4 of 40 CFR Part 60, performance test must be conducted within 45 operating days.
   b) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.
   c) Conduct a performance test using Method 9 of appendix A-4 of this part at least once every 5 calendar years for each affected facility. **(40 CFR 60.255(f)(1), 40 CFR Part 60 Subpart Y)**

2. As an alternative to visual emissions performance testing in SC V.1, the permittee may elect to do the following monitoring for SVCOKEMIL1 of EUSOLIDFUELSYSTEM:
   Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the Administrator or delegated authority. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods (during normal operation) every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, *see* OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. The monitoring plan approved by the Administrator or delegated authority shall be implemented by the owner or operator. **(40 CFR 60.255(f)(2), 40 CFR Part 60 Subpart Y)**

3. The permittee shall maintain and record a logbook for SVCOKEMIL1 of EUSOLIDFUELSYSTEM, in a satisfactory manner, with the records as specified below:
   a) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted.
   b) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted.
   c) The amount and type of coal processed each calendar month.
   d) The amount of chemical stabilizer or water purchased for use in the coal preparation and processing plant.
   e) Monthly certification that the dust suppressant systems were operational when any coal was processed and that manufacturer's recommendations were followed for all control systems. Any variance from the manufacturer's recommendations, if any, shall be noted.
   f) Monthly certification that the fugitive coal dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive coal dust emissions control plan and any letters from the Administrator providing approval of any alternative control measures shall be maintained with the logbook. Any actions, e.g., objections, to the plan and any actions relative to the alternative control measures, e.g., approvals, shall be noted in the logbook as well.
   g) For each bag leak detection system, the owner or operator must keep the records specified below:
      i) Records of the bag leak detection system output;
      ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection settings; and
      iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.
   h) A copy of any applicable monitoring plan for a digital opacity compliance system and monthly certification that the plan was implemented as described. Any variance from plan, if any, shall be noted. **(40 CFR 60.258, 40 CFR Part 60 Subpart A and Y)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification of EUSOLIDFUELSYSTEM authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUSOLIDFUELSYSTEM. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOKEMILL1	63	119	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Y, as they apply to EUSOLIDFUELSYSTEM. **(40 CFR Part 60 Subparts A & Y)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EUINLINEKILN

Commented [JSA5]: PCMACT requirements Added – See PTI 140-15 Markup provided in ROP application for marked copy of additions

DESCRIPTION: The in-line raw mill kiln system uses a proportioning system for grinding and mixing limestone, shale, sand, cement kiln dust (CKD), and overburden, in addition to sourced slag, calcium, aluminum, iron and silica. These raw materials are added to the raw mill where the material is ground, and heated creating a kiln feed mixture, which is conveyed to EUBLENDSILO for blending and storage.

Kiln feed is transferred from EUBLENDSILO via the kiln feed belt scale, elevator, and fed to upper stages of the pre-heating tower.

The kiln feed is calcined in the preheater tower, the source of heat for this reaction is generated in both the calciner and kiln, the kiln is the location where the feed is heated to a point where the calcined feed is melted and then cooled to start the formation of clinker.

A tertiary duct transfers hot exhaust gases from the clinker cooler to the calciner portion of the preheater tower.

Control equipment associated with in-line kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses.

The calciner and kiln have been designed to use traditional solid and liquid fuels and various alternative fuels including asphalt flakes, plastic and small quantities of cellulose fibers. Propane is utilized for refractory curing but not for production of clinker.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: The in-line raw mill kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.25 lb per 1000 lbs exhaust gas	Test Protocol*	Each SVMAIN and SVBYPASS of EUINLINEKILN	SC V.1, VI.9	R 336.1331(1)(a)
2. PM	0.07 lbs/ton of clinker produced		EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.5, V.8	40 CFR 63.1343(b)(1)

Commented [SAJ6]: PM CPMS

2. PM10	57.5 pph	Test Protocol*	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.6	R 336.2803, R 336.2804
3. PM2.5	57.5 pph	Test Protocol*	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.6	R 336.2803, R 336.2804
4. SO_2	1,175 pph	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.5, VI.7	R 336.2803, R 336.2804

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
5. SO_2	7.5 lb/ton of clinker produced	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.5, VI.7	40 CFR 52.1183(h)
6. NO_x	700 pph	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.6, VI.8	R 336.2803, R 336.2804
7. NO_x (as NO_2)	2.8 lbs/ton of clinker produced	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.6, VI.8	R 336.1801(4)(e), 40 CFR 52.1183(h)
8. NO_x (as NO_2)	2.4 lbs/ton of clinker produced	12-month average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.6, VI.8	R 336.1801(4)(e), 40 CFR 52.1183(h)
#9. D/F**	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen***		EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.6, V.9	40 CFR 63.1343(b)(1)
~~9~~10. Mercury	106 lbs/yr	12-month rolling time period	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.7, VI.15	R 336.1228

#11. Mercury	55 lbs/million tons of clinker produced	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.7	40 CFR 63.1343(b)(1)
#12. OHAP	12 ppmvd corrected to 7 percent oxygen	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.8, V.11	40 CFR 63.1343(b)(1) foot note 4 alternative
#13. HCl	3 ppmvd corrected to 7 percent oxygen	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.9.	40 CFR 63.1343(b)(1)
~~10~~14. Opacity	10 percent	Test Protocol*	Each SVMAIN and SVBYPASS of EUINLINEKILN	SC VI.4	R 336.1301, 40 CFR 63.1343(b)(13)

*Test protocol shall establish averaging time.
** **Dioxin and furans, as defined in 40 CFR 63.1341**
***If the average temperature at the inlet to the first PM control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less, this limit is changed to 0.40 ng/dscm (TEQ).

Commented [SAJ7]: CEMS

Commented [SAJ8]: CEMS

II. MATERIAL LIMITS

1. The permittee may use clear, brown or green glass as a raw material in EUINLINEKILN. Other glass containing emerald and fluorescent colored green glass using chromium or uranium and "leaded" glass shall be prohibited. **(R 336.1225)**

2. The permittee may use aluminum based refractory as a raw material in EUINLINEKILN. This aluminum based refractory shall not come from a source that combusts hazardous waste. **(R 336.1225)**

3. The permittee may use coal, petroleum coke, recyclable plastics, cellulose fibers, asphalt flakes, fuel oil, and propane as fuels in the EUINLINEKILN. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804)**

4. The permittee shall not burn any fuel with asbestos tailing or asbestos containing waste materials as defined in 40 CFR 61.141 in EUINLINEKILN. **(R 336.1224, R 336.1225, R 336.1901, 40 CFR 61.141)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not produce more than 6,300 tons of clinker per day from EUINLINEKILN on a 30-day rolling average as determined at the end of each calendar day. **(R 336.1205(1)(a)(i), R 336.2803, R 336.2804)**

2. The permittee shall not produce more than 6,000 tons of clinker per day from EUINLINEKILN on a 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a)(i), R 336.2803,**

R 336.2804)

3. The permittee shall not discharge exhaust gases through SVBYPASS unless the SVBYPASS baghouse is installed, maintained and operated properly. Proper operation of the baghouse shall include following the AQD approved Operations and Maintenance Plan for EUINLINEKILN and operating the dust collector during start-up and shutdown.2 **(R 336.1910, 40 CFR 63.1347**)

4. The permittee shall install, operate and maintain a differential pressure drop gauge to determine the pressure drop across each SVMAIN and SVBYPASS baghouses of EUINLINEKILN. **(R 336.1910)**

5. The permittee shall maintain and operate EUINLINEKILN according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

~~The permittee shall not operate EUINLINEKILN unless the associated dust collectors are installed, maintained, and operating properly. Proper operation of the dust collectors shall include following the AQD approved Operations and Maintenance Plan for EUINLINEKILN and operating the dust collectors during start-up and shutdown.2 **(R 336.1910, R336.1911, 40 CFR 63.1347)**~~

6. The temperature of the gases at the inlet of MAIN and BYPASS stack baghouses shall not exceed the respective levels established during the most recent performance testing conducted pursuant to 40 CFR, Part 63.1349(b)(3), as follows:

   a) When the raw mill is operating, the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.
   b) When the raw mill is not operating, the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was not operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.
   c) the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.

   (40 CFR 63.1346(a))

7. No in-line kiln/raw mill may use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent unless the facility can demonstrate the use of the fly ash shall not result in an increase in mercury emissions over baseline emissions (i.e. emissions not using the fly ash). The facility has the burden of proving there has been no emissions increase over baseline. Once the kiln is in compliance with a mercury emissions limit specified in SC I.11, this paragraph no longer applies. **(40 CFR 63.1346(f))**

8. During periods of startup and shutdown the permittee shall meet the following requirements:

   a) During startup the permittee shall use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the in-line kiln reaches a temperature of 1200 degrees Fahrenheit.
   b) Combustion of the primary kiln fuel may commence once the kiln temperature reaches 1200 degrees Fahrenheit.

   ~~All dry sorbent and activated carbon systems that control hazardous air pollutants shall be turned on and operating at the time the gas stream at the inlet to the baghouse reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream shall be measured at the inlet of the baghouse every minute. The injection systems may be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.~~

   (40 CFR 63.1346(g))

9. As part of the application for a ROP, the permittee shall submit to the AQD District Supervisor, an approvable operation and maintenance plan. The plan shall contain all information required by 40 CFR

63.1347(a), as applicable, which includes the following:

a) Procedures for proper operation and maintenance of EUINLINEKILN and associated air pollution control devices in order to meet the emissions limits and operating limits of §§63.1343, and 63.1346. The permittees operations and maintenance plan must address periods of startup and shutdown.
b) Corrective actions to be taken when required by paragraph §63.1350(f)(3);
c) Procedures to be used during an inspection of the components of the combustion system of in-line kiln raw mill located at the facility at least once per year.

(40 CFR 63.1347)

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The CEMS and COMS shall be installed, calibrated, maintained and operated, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR 60.13 and Performance Specification 1 (PS-1) for visible emissions, Performance Specification 2 (PS-2) for NO_x and SO_2, and Performance Specification 3 (PS-3) for Oxygen. These Performance Specifications are located in 40 CFR, Part 60, Appendix B. **(40 CFR 60.13, R 336.2150)**

2. The span value for the NO_x and SO_2 CEMS shall be 2.0 times the lowest emission standard or as specified in the federal regulations. **(40 CFR 60.13, R 336.2154)**

3. The permittee shall not operate EUINLINEKILN unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUINLINEKILN. **(R336.1301, R336.1331, R 336.1910, R 336.2803, R 336.2804)**

4. The permittee shall install, maintain, and operate a SNCR in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUINLINEKILN. **(R 336.1910, R 336.2803, R 336.2804)**

5. The permittee shall install, calibrate, maintain, and continuously operate a PM CPMS, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR Part 63 Subpart LLL. (40 CFR 63.1350)

6. The permittee shall install, calibrate, maintain, and continuously operate a CMS to record the temperature of the exhaust gases from the kiln and alkali bypass, at the inlet to, or upstream of, the kiln and/or alkali bypass PM control devices. (40 CFR 63.1350)

7. The permittee shall install and operate a mercury continuous emissions monitoring system (Hg CEMS) in accordance with Performance Specification 12A (PS 12A) of appendix B to 40 CFR Part 60 or an integrated sorbent trap monitoring system in accordance with Performance Specification 12B (PS 12B) of appendix B to 40 CFR Part 60 of this chapter. The permittee must monitor mercury continuously according to 63.1350(k)(1) through (5). The permittee shall develop an emissions monitoring plan in accordance with 63.1350(p)(1) through (4). (40 CFR 63.1350)

8. The permittee shall install, operate, and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to 40 CFR Part 60 and comply with all of the requirements for continuous monitoring systems found in the general provisions, 40 CFR Part 63 subpart A. The owner or operator must operate and maintain each CEMS according to the quality assurance requirements in Procedure 1 of appendix F in 40 CFR Part 60. For THC continuous emission monitoring systems certified under Performance Specification 8A, conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2. (40 CFR 63.1350)

9. The permittee shall install, calibrate, maintain, and continuously operate an HCl CEMS, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR Part 63 Subpart LLL. (40 CFR 63.1350)

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify PM emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense in accordance with Department requirements. Monitoring and recording of SVMAIN and SVBYPASS baghouse differential pressure during the test is required. Testing thereafter shall be coordinated with the ROP testing once every five (5) years. **(R 336.1331(1)(a), R 336.2001, R 336.2003)**

2. The permittee shall verify each shipment of recyclable plastic is acceptable to use as fuel in EUINLINEKILN, by testing at owner's expense, in accordance with Department requirements and as specified in Appendix 5. **(R 336.2001, R 336.2003)**

3. The permittee shall perform an annual audit of the COMS using the procedures set forth in Procedure 3 Appendix F of 40 CFR, Part 60, "Quality Assurance Procedures – QC Requirements", or other procedure acceptable to the AQD. **(R 336.1301, 40 CFR Part 60 Appendix F)**

4. Each calendar quarter, the permittee shall perform the NO_x Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60. **(40 CFR 60.13, Appendix F)**

5. Each calendar quarter, the permittee shall perform the SO_2 Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60. **(40 CFR 60.13, Appendix F)**

6. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify PM10 and PM2.5 emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense, in accordance with Department requirements. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

7. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify mercury emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense, in accordance with Department requirements. The test results will be used in developing emission factors to determine compliance with SC I.9. Verification shall be performed annually thereafter or until a mercury CEMs has been installed and a petition, in writing, requesting the use of the CEMS has been submitted to the AQD district Supervisor. **(R 336.1228, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

8. The permittee shall verify PM emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 5 or Method 5I at appendix A-3 to 40 CFR Part 60~~the AQD requirement~~, annually. The PM CPMS shall be used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test shall be repeated annually to reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in 40 CFR Part 63, Subpart LLL. The permittee shall also repeat the test if there's a change in the analytical range of the instrument, or if the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration is replaced.[2] **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

9. The permittee shall demonstrate initial compliance with D/F emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 23 of appendix A-7 to part 40 CFR Part 60. The permittee shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. You may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating.
   (i) Each performance test must consist of three separate runs conducted under representative conditions. The duration of each run must be at least 3 hours, and the sample volume for each run must be at least 2.5 dscm (90 dscf).

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and, where applicable, the temperature at the inlet to the alkali bypass PMCD must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.
(iii) Average temperatures must be calculated for each run of the performance test.
(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with §63.1346(b)..[2] **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

10. The permittee shall demonstrate initial compliance with D/F emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 23 of appendix A-7 to part 40 CFR Part 60. The permittee shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. You may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

11. The permittee shall demonstrate compliance with organic HAP emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 320, Method 18, or ASTM D6348-03 or a combination of the methods. Method 320 and ASTM D6348-03 both employ an FTIR instrument that can detect a number of organic HAP simultaneously; however, interferences in some spectra exist such that Method 18 may be necessary to target individual HAP and conduct GC analysis of the sample.
(a) Instead of conducting the performance test specified in paragraph V.11, you may conduct a performance test to determine emissions of total organic HAP by following the procedures in 63.1349(b)(7)(i) through (v). **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R336.1201(3))**

1. The permittee shall monitor and record the kiln feed rate in tons of dry feed per hour through EUINLINEKILN with instrumentation acceptable to the AQD. The kiln feed production rate is determined from the kiln feed weigh scale. All records shall be made available to the Department upon request. **(R 336.1205)**

2. The permittee shall calculate and record the production rate in tons of clinker produced per hour and per day from EUINLINEKILN on a daily basis using the equation in Appendix 3A or as approved by the AQD District Supervisor. **(R 336.1801, R 336.2803, R 336.2804)**

3. On a quarterly basis, the permittee shall determine, record, and maintain a record of the accuracy of the kiln feed weigh scale used for measuring hourly kiln feed rates. **(R 336.1205)**

4. The permittee shall continuously monitor and record visible emissions of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a COM system located in both SVMAIN and SVBYPASS. The permittee shall maintain a QA/QC program as specified in 40 CFR Part 60 and comply with the requirements as specified in PS 1, Appendix B of 40 CFR, Part 60. **(40 CFR 60.13, R 336.2150)**

5. From EUINLINEKILN, the permittee shall continuously monitor and continuously demonstrate compliance with the PM emissions standard by complying with the requirements of 40 CFR Part 63, Subpart LLL, included in Appendix 3.5. **(40 CFR 63.1350(fb)~~(2)~~, 40 CFR 64.6(c)(1)(iii))**

6. For each emission unit that is equipped with a CPMS, maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.[2] **(40 CFR 63.1350(a))**

7. To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30

operating day rolling average basis, updated at the end of each new kiln operating day.[2] **(40 CFR 63.1350(b))**

8. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:
   a. Within 48 hours of the exceedance, visually inspect the APCD;
   b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
   c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.[2] **(40 CFR 63.1350(b))**

9. The permittee shall continuously monitor and record the SO_2 emissions of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a CEM system. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR Part 60 and to comply with the requirements as specified in PS 2, Appendix B of 40 CFR Part 60. **(40 CFR 60.13, R 336.1205(1)(a)(ii)(E))**

10. The permittee shall continuously monitor and record the NO_x emissions and volumetric flow of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a CEM system. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR Part 60 and to comply with the requirements as specified in PS 2, Appendix B of 40 CFR Part 60. **(R 336.1205(1)(a)(ii)(E), R 336.1801(8), 40 CFR 60.13)**

11. The permittee shall keep, in a satisfactory manner, pounds per hour, tons per month, and 12-month rolling time period SO_2 emission records from the SO_2 CEM system for EUINLINEKILN. **(R 336.2803, R 336.2804)**

12. The permittee shall keep, in a satisfactory manner, NO_x emission records in pounds per ton of clinker produced, using the NO_x CEM system and clinker produced for EUINLINEKILN. **(R 336.1801, R 336.2803, R 336.2804)**

13. The permittee shall monitor and record the pressure drop on SVMAIN and SVBYPASS baghouses of EUINLINEKILN to verify operation is within the range as described in the MAP. The compliant differential pressure range shall be established during stack testing to verify PM emission rates. **(R 336.1331)**

14. The permittee shall keep records of the amount and type of glass used as a raw material and the amount and type of refractory used as a raw material in EUINLINEKILN. **(R 336.1225)**

15. The permittee shall retain and record the supplier certificates of quality, sampling analysis results, and manifests for each delivery (as described in Appendix 5) of alternate fuels used in EUINLINEKILN. All documentation shall be made available to the AQD upon request. **(R 336.1225, R 336.1228)**

16. The permittee shall continuously monitor the alternate fuels feed rate to EUINLINEKILN using an in-line belt scale or other method, as approved by the AQD District Supervisor. The alternate fuels feed rate of EUINLINEKILN shall be continuously recorded (as described in Appendix 3A) in tons per hour as determined on a daily average using the plants electronic (computer) monitoring system and make all records available to the Department upon request. **(R 336.1205(1), R 336.1225)**

17. The permittee shall keep all sampling and/or testing results for the alternate materials used as fuel for EUINLINEKILN. The permittee shall use a recordkeeping method acceptable to the AQD District Supervisor and make all records available to the Department upon request. **(R 336.1225)**

18. The permittee shall verify that any material processed by EUINLINEKILN does not contain asbestos tailings or asbestos containing waste materials. **(R 336.1225)**

19. The permittee shall calculate, in a satisfactory manner acceptable to the AQD, the mercury emissions from EUINLINEKILN. The permittee shall use Appendix 6, or other method as approved by the AQD, to determine the monthly and 12-month rolling time period mercury emissions, as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the AQD upon request. **(R336.1228)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of the NO_x Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60). **(40 CFR 60.13, Appendix F)**

~~On or before March 15th of each year after entry of Consent Decree Case No. 1:06-cv-607 until its termination, the permittee shall submit to the USEPA and the MDEQ an annual report for the preceding year that shall include a discussion of the status of the installation of the main stack baghouse and a discussion of the permittee's progress in satisfying their obligations in connection with the indirect firing system. At a minimum the report shall include a narrative description of activities undertaken and an itemization (with copies of supporting documentation) of costs incurred since the previous report. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.a)**~~

~~If the permittee violates, or has reason to believe that it may have violated, any requirement of the Consent Decree Case No. 1:06-cv-607, the permittee shall notify the MDEQ of such violation and its likely duration in writing within ten working days of the day the permittee first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the permittee shall include a statement to that effect in the report. The permittee shall investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within 30 days of the day the permittee becomes aware of the cause of the violation. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.b)**~~

~~In the case of any violation of Consent Decree Case No. 1:06-cv-607 or other event that may pose an immediate threat to the public health or welfare or the environment, the permittee shall notify the MDEQ orally or by electronic or facsimile transmission as soon as possible, but not later than 24 hours after the permittee first knew of the violation or event. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**~~

~~Each report submitted by the permittee pursuant to Consent Decree Case No. 1:06-cv-607 shall be signed by the responsible official of the submitting party and include the following certification: I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of these individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**~~

Commented [JSA9]: Consent Decree has been terminated

5. Prior to emissions testing, the permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.2001(3))**

6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated emissions test date. **(R 336.2001(4))**

7. No less than 30 days prior to the performance evaluation of the COM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the COM system complies with the requirements of PS 1. **(40 CFR 60.7, R336.2170)**

8. No less than 30 days prior to the SO_2 performance evaluation of the CEM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEM system complies with the requirements of PS 6. **(40 CFR 60.13, 40 CFR Part 60, Appendix B)**

9. No less than 30 days prior to the performance evaluation of the NO_x CEM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEM system complies with the requirements of PS 6. **(40 CFR Part 60, Appendix B, R 336.1801(11), 40 CFR 60.13)**

10. The daily clinker production rate shall be submitted to the AQD District Supervisor within one month after the end of the calendar quarter. All records, including data generated during reviews and audits of clinker production as referred to in Appendix 3A or as approved by the AQD District Supervisor, shall be made available to the Department upon request. **(R 336.1205)**

11. Within 30 days of written request by the AQD District Supervisor, the permittee shall submit to the District Supervisor a written summary of the results of any review or audit of clinker production. The summary shall compare the tons of clinker produced as determined in the review or audit to the tons of clinker produced as calculated using Appendix 3A or as approved by the AQD District Supervisor. **(R 336.1205)**

12. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of NOx and SO_2 Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60). **(40 CFR 60.13, Appendix F)**

13. The permittee shall notify the AQD District Supervisor, when receiving plastic fuel from a new supplier and/or new source (as defined in Appendix 5), or a supplier and/or source that has not been used in the last two years. The notification shall include the following information within the timeframe listed:
    a) Name of the new material supplier and/or source – 30 days before delivery.
    b) Description of what the material was generated for or from – 30 days before delivery.
    c) A sampling analysis summary of the material identifying the constituents as described in Appendix 5 – upon delivery. **(R 336.1225)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVMAIN	132	323	R 336.1225, R 336.2803, R 336.2804
2. SVBYPASS	78	225	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subpart A and Subpart LLL, as they apply to EUINLINEKILN. (40 CFR Part 63, Subparts A & LLL)
2. The permittee shall comply with all applicable requirements of the Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60, Subpart A and Subpart F, as they apply to EUINLINEKILN. (40 CFR Part 60, Subpart A & F)
3. The permittee shall comply with all applicable requirements of the Regional Haze Regulations requiring Best Available Retrofit Technology (BART) effective January 1, 2017. **(40 CFR 52.1183(h))**
4. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

The following conditions apply to: EUCLINKERCOOLER

DESCRIPTION: The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and fabric filter baghouses.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
COOLER – Clinker Cooler

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	EUCLINKERCOOLER	SC VI.3	R 336.1301, 40 CFR 63.1343(b)
2. PM	0.02 lb/ton of clinker throughput	Test protocol*	EUCLINKERCOOLER	SC V.1, SC VI.1	40 CFR 60.62(b), 40 CFR 63.1343(b)
3. PM10	5.0 pph	Test protocol*	EUCLINKERCOOLER	SC V.2	R 336.2803, R 336.2804
4. PM2.5	5.0 pph	Test protocol*	EUCLINKERCOOLER	SC V.2	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall develop a site-specific monitoring plan according to the following requirements:
   a) Installation of the continuous monitoring system (CMS) sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);
   b) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and
   c) Performance evaluation procedures and acceptance criteria (e.g., calibrations),
   d) Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c)(1), (c)(3), and (c)(4)(ii);
   e) Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d);
   f) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c), (e)(1), and (e)(2)(i).

   The plan must be submitted at least 30 days before the initial performance evaluation of the PM continuous parametric monitoring system (CPMS). **(40 CFR 60.63(i))**

2. The permittee shall maintain and operate EUCLINKERCOOLER according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

he permittee shall not operate EUCLINKERCOOLER unless the associated dust collectors are installed, maintained, and operating properly. Proper operation of the dust collectors shall include following the AQD approved Operations and Maintenance Plan for EUCLINKERCOOLER and operating the dust collectors during start-up and shutdown.2 (R 336.1910, R336.1911, 40 CFR 63.1347)

3. The permittee shall install and operate a PM continuous parametric monitoring system (CPMS) for EUCLINKERCOOLER in accordance with 40 CFR Part 63, Subpart LLL.2 (40 CFR 63.1350(b))

4. The permittee shall not operate FG CLINK COOLEUCLINKERCOOLER unless the AQD approved Operations and Maintenance Plan is implemented and maintained.2 (R 336.1911, 40 CFR 63.1347)

IV. DESIGN/EQUIPMENT PARAMETERS

1. A PM CPMS shall be installed, calibrated, maintained, and operated for EUCLINKERCOOLER in accordance with the procedures set forth in 40 CFR Part 60. **(40 CFR 60.63(c), 40 CFR 63.134950(b))**

2. The permittee shall not operate EUCLINKERCOOLER unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUCLINKERCOOLER. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUCLINKERCOOLER, the permittee shall verify PM emission rates from EUCLINKERCOOLER and while concurrently monitoring continuous performance through the use of a PM CPMS to establish a site specific operating limit, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and F. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1331, 40 CFR 60.64, 40 CFR 63.1349)**

2. The permittee shall verify PM emission rates from EUCLINKERCOOLER by testing, at owner's expense, in accordance with the AQD requirement, annually. The PM CPMS shall be used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test shall be repeated annually to reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in 40 CFR Part 63, Subpart LLL. The permittee shall also repeat the test if there's a change in the analytical range of the instrument, or if the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration is replaced.2 (R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)

3. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup EUCLINKERCOOLER, the permittee shall verify PM10 and PM2.5 emission rates from EUCLINKERCOOLER by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. From EUCLINKERCOOLER, the permittee shall continuously monitor and continuously demonstrate compliance with the PM emissions standard by complying with the requirements of 40 CFR Part 63, Subpart LLL, included in Appendix 3.5. (40 CFR 63.1350(f)(2), 40 CFR 64.6(c)(1)(iii))

2. For each emission unit that is equipped with a CPMS, maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.2 (40 CFR 63.1350(a))

3. To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all

Commented [YDM10]: This cite was already in the PTI, but I think it should be 40 CFR 63.1350(b)

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quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.2 (40 CFR 63.1350(b))

4. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:
   a. Within 48 hours of the exceedance, visually inspect the APCD;
   b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
   c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.2 (40 CFR 63.1350(b))

5. The permittee shall determine the hourly clinker production in one of two methods:
   a. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy, or
   b. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed must be maintained within ±5 percent accuracy. Calculate your hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. Update this ratio monthly. Note that if this ratio changes at clinker reconciliation, you must use the new ratio going forward, but you do not have to retroactively change clinker production rates previously estimated.2 (40 CFR 63.1350(d))

6. The permittee shall determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production (or feed mass flow if applicable) before initial use (for new sources) or by the effective compliance date of this rule (for existing sources). During each quarter of source operation, you must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production (or feed mass flow).2 (40 CFR 63.1350(d))

~~The permittee shall use the Alternate Monitoring Plan found in Appendix 3.1 to determine the hourly clinker production rate and the PM emission rate in pounds of PM per ton of clinker based on a 30 day rolling average.2 (40 CFR 63.1350~~)

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Within 60 days after the date of completing each performance test (see 40 CFR 60.8) as required by 40 CFR Part 60 Subpart F, the permittee shall submit the results of the performance tests conducted to demonstrate compliance with 40 CFR Part 60 Subpart F. **(40 CFR 60.64(d), 40 CFR Part 60 Subparts A & F)**

5. For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run. **(40 CFR 60.64(d), 40 CFR Part 60 Subparts A & F)**

6. Each owner or operator required to install a CPMS or CEM system under sections 40 CFR 60.63(c) through

(e) shall submit reports of excess emissions. The content of these reports must comply with the requirements in 40 CFR 60.7(c). Notwithstanding the provisions of 40 CFR 60.7(c), such reports shall be submitted semiannually. **(40 CFR 60.65(a), 40 CFR Part 60 Subparts A & F)**

7. Each owner or operator of facilities subject to the provisions of 40 CFR 60.63(c) through (e) shall submit semiannual reports of the malfunction information required to be recorded by 40 CFR 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in deenergization of any device controlling clinker cooler emissions or in the venting of emissions directly to the atmosphere. **(40 CFR 60.65(b), 40 CFR Part 60 Subparts A & F)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOOLER	132	134	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable requirements of the federal Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60 Subparts A and F, as they apply to EUCLINKERCOOLER. **(40 CFR Part 60 Subparts A & F)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subparts A and LLL as they apply to EUCLINKERCOOLER. **(40 CFR Part 63, Subparts A & LLL)**

3. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

The following conditions apply to: EUFINISHMILL4

DESCRIPTION: Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.

Flexible Group ID: FGFINISHMILLS, FGNONKILNFACILITY

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
FM4 – Finish Mill No. 4

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
2. PM	0.15 lb/1000 lbs exhaust gas	Test protocol*	EUFINISHMILL4	SC V.1	R 336.1331
3. PM10	6.24 pph	Test protocol*	EUFINISHMILL4	SC V.2	R 336.2803, R 336.2804
4. PM2.5	6.24 pph	Test protocol*	EUFINISHMILL4	SC V.2	R 336.2803, R 336.2804
Opacity					
*Test protocol shall determine averaging time.					

Commented [YDM13]: Opacity limit from PTI 140-15 included in FGFINISHMILLS

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

Commented [YDM14]: Process/Operational restrictions from PTI 140-15 are incorporated in FGFINISHMILLS

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUFINISHMILL4 unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUFINISHMILL4. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUFINISHMILL4, the permittee shall verify PM emission rates from EUFINISHMILL4 by testing at owner's expense, in accordance with Department requirements. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.1331(1)(a), R 336.2001, R 336.2003)**

2. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUFINISHMILL4, the permittee shall verify PM10 and PM2.5 emission rates from EUFINISHMILL4 by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

Commented [YDM15]: Monitoring/Recordkeeping T&C from PTI 140-15 incorporated in FGFINISHMILLS

VII. REPORTING

Commented [YDM16]: Reporting T&C from PTI 140-15 incorporated in FGFINISHMILLS

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit all applicable reports as described in the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants as they apply to EUFINISHMILL4. **(40 CFR 63.1354, 40 CFR 60.65)**

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVFM4	98.5	141	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

Commented [YDM17]: Additional Other Restrictions from PTI 140-15 related to PMACT incorporated in FGFINISHMILLS

1. The permittee shall comply with all applicable requirements of the federal Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60 Subparts A and F, as they apply to EUFINISHMILL4. **(40 CFR Part 60 Subparts A & F)**

2. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

EUEMERGENCYGEN2
EMISSION UNIT CONDITIONS

DESCRIPTION

Diesel fuel-fired emergency electric generator installed in 2018. This table contains requirements of the New Source Performance Standards for Stationary Compression Ignition - Internal Combustion Engines, 40 CFR Part 60, Subpart IIII that applies only to this diesel fuel-fired emergency generator. This emergency diesel generator is less than 10 MM BTU/hr and exempt under Rule 285(g).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Particulate filter

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.2 g/KW-hr	Test Protocol*	EUEMERGENCY GEN2	SC VI.1	**40 CFR 60.4205(b), 40 CFR 89.112(a)**
2. NMHC + NOx	4.0 g/KW-hr	Test Protocol*	EUEMERGENCY GEN2	SC VI.1	**40 CFR 60.4205(b), 40 CFR 89.112(a)**
3. CO	3.5 g/KW-hr	Test Protocol*	EUEMERGENCY GEN2	SC VI.1	**40 CFR 60.4205(b), 40 CFR 89.112(a)**
*Test Protocol shall determine averaging time					

II. MATERIAL LIMIT(S)

1. The permittee must use diesel fuel that meets the requirements of 40 CFR 80.510(b), as follows:

   a. Maximum sulfur content of 15 ppm per gallon, and

   b. A minimum centane index of 40; or a maximum aromatic content of 35 percent by volume. **(40 CFR 60.4207(b), 40 CFR 80.510(b))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate and maintain the diesel generator and control device, if installed, according to the manufacturer's emission related written instructions or procedures developed by the permittee that are approved by the manufacturer. **(40 CFR 60.4211(a))**

2. The permittee may change only emission related settings that are permitted by the manufacturer. **(40 CFR 60.4211(a))**

3. The permittee must meet applicable requirements specified in 40 CFR 89. **(40 CFR 60.4211(a))**

4. The engine must be installed and configured according to the manufacturer's emission related specifications. **(40 CFR 60.4211(b) & (c))**

5. In order for the engine to be considered an emergency stationary RICE, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(2) and (3) is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(2) and (3), the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency.

   a. You may operate your emergency stationary RICE for any combination of purposes specified in 40 CFR 60.4211(f)(2)(i) for a maximum of 100 hours per calendar year for maintenance checks and readiness testing.

Any operation for non-emergency situations as allowed in SC III.5(b) counts as part of the 100 hours.

b. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. This 50 hours of operation are counted as part of the 100 hours per calendar year for maintenance and testing. **(40 CFR 60.4211(f))**

6. If the emergency engine does not operate in a certified manner as required by 40 CFR Part 60, Subpart IIII, the permittee must demonstrate compliance as follows:

a. The permittee shall keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.

b. The permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within one year after operating an uncertified engine or operating in a way that is not permitted by the manufacturer. **(40 CFR 60.4211(g))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip the diesel generator with a non-resettable hour meter to track the number of operating hours. **(40 CFR 60.4209(a))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee may comply with the emission standards specified in 40 CFR 60.4205(b), also specified in SC I.1, I.2 & I.3, by purchasing an engine certified to the emission standards in 40 CFR 60.4205(b) for the same model year and maximum engine power. **(40 CFR 60.4205(b), 40 CFR 60.4211(c))**

2. The permittee shall keep manufacturer's certification documentation indicating that emergency engines meet the applicable emission limitations contained in 40 CFR 60.4205(b), and also specified in SC I.1, I.2, & 1.3. **(40 CFR 60.4211, R 336.1213(3))**

3. Starting with the model years in Table 5 to Subpart IIII, Part 63, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the permittee must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour-meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. **(40 CFR 60.4214(b))**

4. If the emergency engine is equipped with a diesel particulate filter, the permittee must keep records of any corrective action taken after the backpressure monitor has indicated that the high backpressure limit of the engine is approached. **(40 CFR 60.4214(c))**

5. The permittee shall keep fuel supplier records or fuel sample test data, for each delivery of diesel fuel oil used. **(40 CFR 80.510(b), R 336.1213(3))**

6. The permittee shall maintain a record of the engine nameplate capacity and date of installation of the emergency generator. **(R 336.1213(3), 40 CFR 63.6590(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources for Compression Ignition Internal Combustion Engines, as specified in 40 CFR Part 60, Subpart IIII. **(40 CFR Part 60, Subparts A and IIII)**

2. The permittee shall comply with the applicable requirements of 40 CFR 63, Subpart A and Subpart ZZZZ. National Emission Standards for Hazardous Air Pollutants, Stationary Reciprocating Internal Combustion Engines. **(40 CFR 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

D. FLEXIBLE GROUP CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGQUARRY	This Flexible Group deals with the initial mining and crushing of the limestone. Included here are the drilling, blasting and hauling of the limestone; the crushing of the limestone in the primary and secondary crushers; and handling of dust including fugitive emissions from the quarry and dust from the secondary crusher.	EUQUARRYFUGITIVE EUPRIMARYCRUSH, EUHAMMER, EUSECONDARYCRUSH,
~~FGKILNRAWMILLS~~	~~This Flexible Group deals with mixing and grinding, then heating the ingredients to make cement. Included are limestone, shale, bottom ash, fly ash, bauxite, mill scales, slag, various sands, numerous iron sources, clay, overburden that are ground and mixed in EURAWMILLS. These raw materials are then sent to the EUKILN where they are heated and become clinker. This Flexible Group also contains the requirements for the use of asphalt flakes and plastic as a fuel in the in-line calciner with indirect firing.~~	~~EURAWMILLS, EUKILN, EUCLINKERCOOL~~
FGFINISHMILLS	This Flexible Group deals with pulverizing the clinker after it has left the kiln and cooling area. The clinker is ground in the mills-which are horizontal steel tubes filled with steel balls. As the tubes rotate, the steel balls tumble and crush the clinker into a superfine gray powder known as Portland Cement. A small amount of gypsum is added during the final grinding to control the set upon use of the cement.	EUFINISHMILL1, EUFINISHMILL2, EUFINISHMILL3, EUFINISHMILL4
FGNONKILNFACILITY	This flexible group covers handling the materials, gases, fuels, and dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand; clinker cooler gases; coal and petroleum coke; and the finished cement product.~~This Flexible Group deals with handling the materials, gasses, fuels, and dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand; clinker cooler gasses; coal and petroleum coke; and the finished cement product that is shipped for sale.~~	EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUCOALSYSTEM, EUCKDHANDSTOR, EUFINISHMILL4
FGALTSAND/SOIL	This flexible group covers the extraction and screening of alternative sand/soils from the former City of Charlevoix landfill located in the Quarry (alternative sand/soils) and the use of the alternative sand/soils as raw feed to the kiln.	EUQUARRYFUGITIVE, EUPRIMARYCRUSH, EUSECONDARYCRUSH, EURAWMILLS, EUKILN

Commented [YDM18]: Replaced by EUINLINEKILN

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGMACTZZZZEMERGENCY	This flexible group includes two compression ignition (CI) existing emergency stationary reciprocating internal combustion engines (RICE) that have a maximum site rating of 500 brake horsepower (HP) (238HP and 68HP)at a major source of hazardous air pollutants (HAPs) and that are subject to Title 40 of the Code of Federal Regulations (CFR), Part 63, Subpart ZZZZ (40 CFR 63.6580-6675), the "RICE MACT".	EUKILNDONKEY, EUEMERGENCYGEN
FGCOLDCLEANERS	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	EUCOLDCLEANER
FGPROJECT2016	Upgrades at the existing Portland cement plant to increase the production capacity. A Hybrid applicability analysis was used to determine a non-significant emission increase.	EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUFINISHMILL4, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUCLINKERCOOL, EUINLINEKILN

FGQUARRY
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This Flexible Group deals with the initial mining and crushing of the limestone. Included here are the drilling, blasting and hauling of the limestone in the quarry; the crushing of the limestone in the primary and secondary crushers; and handling of dust including fugitive emissions from the quarry and dust from the secondary crusher.

Emission Units: EUQUARRYFUGITIVE, EUPRIMARYCRUSH, EUSECONDARYCRUSH, EUHAMMER

POLLUTION CONTROL EQUIPMENT

Fabric filter on rock drill included in EUQUARRYFUGITIVE, baghouse on EUSECONDARYCRUSH

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible Emissions	15 percent opacity[2]	6 minute average	EUHAMMER	SC VI.1	**40 CFR 60.672(b) and Table 3**
2. Visible Emissions	5 percent opacity	6 minute average	EUQUARRYFUGITIVE (roads, lots, storage piles, material handling at storage piles)	SC VI.1	**Act 451, Part 55 324.5524(2)**
3. Visible Emissions	20 percent opacity	6 minute average	EUSECONDARYCRUSH	SC VI.1	**R 336.1301(1)(a)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Monthly 1 minute visible emissions observation using USEPA Method 22 shall be conducted on EUQUARRYFUGITIVE, EUHAMMER, and EUSECONDARYCRUSH. If visible emissions are observed, a 6-minute USEPA Method 9 (Method 9D for roads) test shall be conducted within one hour. The test frequency shall be semiannual for a source for which there are no visible emissions observed over six consecutive monthly tests. The test frequency shall be annually if there are no visible emissions observed for a source during the semiannual test for the source. If any visible emissions are observed in the semiannual or annual visible emissions observations for a source, the facility shall resume monthly testing until the source again meets the requirements for semiannual or annual testing. **(R 336.1213(3), Act 451, Part 55, 324.5525(j), Act 451, Part 55, 324.5524(2))**

2. The permittee shall keep, in a satisfactory manner, visible emission records for FGQUARRY. All records shall be made available to the Department upon request. **(R 336.1213(3))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the New Source Performance Standards for Nonmetallic Mineral Processing Plants as specified in 40 CFR, Part 60, Subpart OOO, for EUHAMMER. **(40 CFR, Part 60, Subpart OOO)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGKILNRAWMILLS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This Flexible Group deals with mixing and grinding, then heating the ingredients to make cement. Included are limestone, shale, bottom ash, fly ash, bauxite, mill scales, slags, various sands, numerous iron sources, clay, overburden, aluminum pot furnace refractory, and clear, brown and green glass that are ground and mixed in EURAWMILLS. These raw materials are then sent to the EUKILN where they are heated and become clinker. This Flexible Group also contains the requirements for the use of asphalt flakes and plastic as a fuel in the in-line calciner with indirect firing.

Emission Units: EURAWMILLS, EUKILN, EUCLINKERCOOL

POLLUTION CONTROL EQUIPMENT

Main stack baghouse, Bypass stack baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.25 lb/1000 lbs exhaust gas[2]	Test Protocol*	FGKILNRAWMILLS	SC V.1, VI.1, VI.2	R 336.1331(1)(a)
2. SO_2	2800 lbs/hour[2]	Hourly, as the average of each calendar day's emissions over the time of operation.	FGKILNRAWMILLS	SC VI.5, VI.7	40 CFR 52.21(c) and (d)
3. SO_2	550 tons/month[2]	Calendar month.	FGKILNRAWMILLS	SC VI.5, VI.7	R 336.1205 40 CFR 52.21(c) and (d)
4. SO_2	4404 tons/year[2]	12 month rolling time period, as determined at the end of each calendar month.	FGKILNRAWMILLS	SC VI.5, VI.7	R 336.1205 40 CFR 52.21(c) and (d)
5. NO_x	6.50 lbs/ton of clinker produced[1]	Monthly average, as determined at the end of each calendar month, from May 1 through September 30.	FGKILNRAWMILLS	SC VI.2, VI.6, VI.8	R 336.1801(4)(e)
6. NO_x	7.67 lbs/ton of clinker produced[2]	Monthly average, as determined at the end of each calendar month, from October 1 through April 30.	FGKILNRAWMILLS	SC VI.2, VI.6, VI.8	R 336.1205
7. Nickel when burning 100 percent petroleum coke	0.36 lb/hour[1]	Test Protocol*	FGKILNRAWMILLS	SC V.2	R 336.1224, R 336.1225

*Test Protocol shall specify averaging time.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Petroleum coke	69 ng of mercury/gram of petroleum coke[1]	NA	EUKILN	SC V.5	R 336.1228
2. Asphalt Flake and Recyclable Plastic	8.0 tons per hour[2]	Daily Average	In-line calciner of EUKILN	SC VI.12	R 336.1205(1) R 336.1225
3. Asphalt Flake and Recyclable Plastic	121 ppbw of mercury in the Asphalt Flake or Recycled Plastic[1]	Each Sample taken from a Batch	In-line calciner of EUKILN	SC VI.11	R 336.1228

4. The permittee shall not burn any fuel with asbestos tailing or asbestos containing waste materials as defined in 40 CFR 61.141 in FGKILNRAWMILLS.[2] **(R 336.1224, R 336.1225, R 336.1901, 40 CFR 61.141)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not produce more than 4,840 tons of clinker per day from EUKILN as determined on a daily basis.[2] **(R 336.1205(1)(a)(i), 40 CFR 52.21(c) and (d))**

2. The permittee shall burn petroleum coke as fuel in the EUKILN only when introduced at the entrance of the kiln.[2] **(R 336.1205(1)(a)(ii), R 336.1225)**

3. The permittee shall not use as a raw material any glass other than clear, brown or green glass, excluding emerald and fluorescent green glass colored using chromium or uranium and "leaded" glass.[1] **(R 336.1225)**

4. The permittee may use aluminum based refractory as a raw material. This aluminum based refractory shall not come from a source that combusts hazardous waste.[1] **(R 336.1225)**

5. The permittee shall only feed the asphalt flake and/or plastic fuel to the in-line calciner of EUKILN of FGKILNRAWMILLS.[2] **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

6. The permittee shall not discharge exhaust gases through SVBYPASS unless the SVBYPASS baghouse is installed, maintained and operated in a satisfactory manner.[2] **(R 336.1910)**

7. The permittee shall not operate SVBYPASS of FGKILNRAWMILLS unless a broken bag detector is installed, maintained, and operated in a satisfactory manner for the baghouse for SVBYPASS. The detector shall be equipped with an audible alarm that will sound when a broken bag is detected.[2] **(R 336.1910)**

8. The permittee shall install, operate and maintain a differential pressure gauge to determine the pressure across the SVMAIN baghouse. **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

a. The CEMS and COMS shall be installed, calibrated, maintained and operated in accordance with the procedures set forth in 40 CFR 60.13 and Performance Specification 1 (PS-1) for visible emissions, Performance Specification 2 (PS-2) for NOx and SO2, Performance Specification 3 (PS-3) for Oxygen, and Performance Specification 4 (PS-4) for Carbon Monoxide. These Performance Specifications are located in 40 CFR, Part 60, Appendix B.[2] **(40 CFR 60.13, R 336.2150)**

b. The span value for the NOx and SO2 CEMS shall be 2.0 times the lowest emission standard or as specified in the federal regulations.[2] **(40 CFR 60.13, R 336.2154)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Annual verification of PM emission rates from EUKILN, by testing at owner's expense in accordance with Department requirements shall be required. PM emission rates shall be correlated with percent opacity measured during testing. Monitoring and recording of SVMAIN baghouse differential pressure and SVBYPASS baghouse bag leak detection system during the test is also required. In accordance with 40 CFR 60.64, stack testing procedures shall be in accordance with federal Reference Methods 5 or 5I, 40 CFR, Part 60, Appendix A[2] **(R 336.2001, R 336.2003, R 336.1331(1)(a), 40 CFR 64.4(e), 64.6(d))**

2. The permittee shall verify nickel emission rates with 100 percent petroleum coke used as fuel in the EUKILN, by testing at owner's expense, in accordance with Department requirements once every five years.[1] **(R 336.1224, R 336.1225)**

3. The permittee shall verify each shipment of asphalt flakes and/or plastic are acceptable to use as fuel in FGKILNRAWMILLS, by testing at owner's expense, in accordance with Department requirements and as specified in Appendix 5.[2] **(R 336.2001, R 336.2003)**

4. The permittee shall perform an annual audit of the COMS using the procedures set forth in USEPA Publication 450/4-92-010, "Performance Audits Procedures for Opacity Monitors", or a procedure acceptable to the AQD.[2] **(40 CFR 64.3(b)(3), R 336.1213(3))**

5. Each calendar quarter, the permittee shall perform the NOx Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60.[2] **(40 CFR 60.13, Appendix F)**

6. Each calendar quarter, the permittee shall perform the SO_2 Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60.[2] **(40 CFR 60.13, Appendix F)**

See Appendix 5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

5. The permittee shall monitor and record the kiln feed rate in tons of dry feed per hour through FGKILNRAWMILLS with instrumentation acceptable to the AQD. The kiln feed production rate is determined from the 557 scale. All records shall be made available to the Department upon request.[2] **(R 336.1205)**

6. The permittee shall calculate and record the production rate in tons of clinker produced per hour and per day from FGKILNRAWMILLS on a daily basis using the equation in Appendix 3.[2] **(R 336.1801, 40 CFR 52.21(c) and (d))**

7. On a quarterly basis, the permittee shall determine, record, and maintain a record of the accuracy of the 557 belt scale used for measuring hourly kiln feed rates. **(R 336.1213(3))**

8. The permittee shall continuously monitor and record visible emissions of the exhaust gases from EUKILN routed through SVMAIN and SVBYPASS with a COMS located in both SVMAIN and SVBYPASS. The permittee shall maintain a QA/QC program as specified in Method 203 of 40 CFR, Part 60 and comply with the requirements as specified in PS 1, Appendix B of 40 CFR, Part 60.[2] **(40 CFR 60.13, R 336.2150, 40 CFR 64.6(c)(1)(iii))**

9. The permittee shall continuously monitor and record the SO_2 emissions of the exhaust gases from EUKILN routed through SVMAIN and SVBYPASS with a CEMS. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR, Part 60 and to comply with the requirements as specified in PS 6, Appendix B of 40 CFR, Part 60.[2] **(40 CFR 60.13, R 336.1205(1)(a)(ii)(E), R 336.1213(3))**

10. The permittee shall continuously monitor and record the NO_x emissions and volumetric flow of the exhaust gases from EUKILN routed through SVMAIN and SVBYPASS with a CEMS. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR, Part 60 and to comply with the requirements as specified in PS 6, Appendix B of 40 CFR, Part 60.[2] **(R 336.1213(3), R 336.1205(1)(a)(ii)(E), R 336.1801(8), 40 CFR 60.13,)**

11. The permittee shall keep, in a satisfactory manner, lb/hour, tons per month, and 12-month rolling time period SO_2 emission records from the SO_2 CEMS for FGKILNRAWMILLS.[2] **(R 336.1213(3), 40 CFR 52.21(c) and (d))**

12. The permittee shall keep, in a satisfactory manner, NO_x emission records in lb/ton of clinker produced from the NOx CEMS and clinker produced for FGKILNRAWMILLS.[2] **(R 336.1801, R 336.1213(3), 40 CFR 52.21(c) and (d))**

13. The permittee shall monitor and record the pressure drop on the SVMAIN baghouse to verify operation is within the range as described in the MAP. The compliant differential pressure range shall be established during stack testing to verify PM emission rates.[2] **(R 336.1213(3))**

14. The permittee shall keep records of the amount and type of glass used as a raw material and the amount and type of refractory used as a raw material.[1] **(R 336.1225)**

15. The permittee shall retain and record the supplier certificates of quality, sampling analysis results, and manifests for each delivery (as described in Appendix 5) of asphalt flake and plastic fuel used in the in-line calciner of EUKILN of FGKILNRAWMILLS. All documentation shall be made available to the AQD upon request.[1] **(R 336.1225, R 336.1228)**

16. The permittee shall continuously monitor the asphalt flake feed rate and plastic feed rate to the in-line calciner of EUKILN of FGKILNRAWMILLS using an in-line belt scale. The asphalt flake feed rate and plastic feed rate to the in-line calciner of EUKILN of FGKILNRAWMILLS shall be continuously recorded in tons per hour as determined on a daily average using the plants electronic (computer) monitoring system and make all records available to the Department upon request.[2] **(R 336.1205(1), R 336.1225)**

17. The permittee shall keep all sampling and/or testing results for the asphalt flake and plastic used as fuel for FGKILNRAWMILLS. The permittee shall use a recordkeeping method acceptable to the AQD District Supervisor and make all records available to the Department upon request.[1] **(R 336.1225)**

18. The permittee shall utilize COMS recorded opacity as an indicator of the proper functioning of the baghouses. The appropriate range of opacity defining proper function of the baghouses is 0-20 percent opacity. **(40 CFR 64.6(c)(1)(i) & (ii))**

19. The permittee shall use the COMS to assure compliance with the PM limit. An excursion for PM shall be two consecutive 1-hour block average opacity values greater than 15 percent opacity. This condition does not affect compliance with R 336.1301. **(40 CFR 64.6(c)(2))**

20. The permittee shall properly maintain the COMS including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

21. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, in frequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. The permittee shall operate the COMS

during all required periods when the kilns are operating. Data recorded during monitoring malfunctions, repair activities and QA/QC operations shall not be used for 40 CFR, Part 64 compliance. **(40 CFR 64.6(c)(3), 64.7(c))**

22. Upon detecting an excursion or exceedance, the permittee shall restore operation of the kiln (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

23. The permittee shall verify that any material processed by FGKILNRAWMILLS does not contain asbestos tailings or asbestos containing waste materials. **(R 336.1213(3))**

24. The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the affected facility; malfunction of the baghouse, or any periods during which the COMS is inoperative. **(40 CFR 60.7(b))**

See Appendix 3

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i), 40 CFR 64.9(a)(2)(i)&(iii))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of the NOx Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60).[2] **(40 CFR 60.13, Appendix F)**

5. 60 days after the end of each ozone control period, the permittee shall submit to the AQD a summary report of the NOx emissions during the ozone control period as specified in Rule 801(12).[2] **(R 336.1801(12))**

6. In accordance with 40 CFR 60.7(c) and (d) an EER and summary report shall be submitted in an acceptable format to the District Supervisor within 30 days following the end of each calendar quarter for NOx CEMS of the NOx emissions in lb/ton of clinker produced for FGKILNRAWMILLS. The EER shall include each occurrence of all excursions and the magnitudes of the excess emissions of the specified permit limit, the cause of the excess emissions, if known, periods of monitoring system downtime, any corrective action taken and the total operating time of the source(s). If no exceedances or monitoring system downtime occurred during the reporting period, the permittee shall report that fact.[2] **(R 336.1801, R 336.1910, R 336.1213(3))**

7. In accordance with 40 CFR 60.7(c) and (d) an EER and summary report shall be submitted in an acceptable format to the District Supervisor within 30 days following the end of each calendar quarter for COMS for FGKILNRAWMILLS. The EER shall include each occurrence of all excursions and the magnitudes of the excess emissions of the specified permit limit, the cause of the excess emissions, if known, periods of monitoring system downtime, any corrective action taken and the total operating time of the source(s). If no exceedances or monitoring system downtime occurred during the reporting period, the permittee shall report that fact.[2] **(R 336.1201(3), R 336.1910, R 336.1213(3), 40 CFR 60.7(c) and (d))**

8. In accordance with 40 CFR 60.7(c) and (d) an EER and summary report shall be submitted in an acceptable format to the District Supervisor within 30 days following the end of each calendar quarter for SO2 CEMS for FGKILNRAWMILLS. The EER shall include each occurrence of all excursions and the magnitudes of the excess emissions of the specified permit limit, the cause of the excess emissions, if known, periods of monitoring system downtime, any corrective action taken and the total operating time of the source(s). If no exceedances or monitoring system downtime occurred during the reporting period, the permittee shall report that fact.[2] **(R 336.1201(3), R 336.1213(3))**

9. On or before March 15th of each year after entry of Consent Decree Case No. 1:06-cv-607 until its termination, the permittee shall submit to the USEPA and the MDEQ an annual report for the preceding year that shall include a discussion of the status of the installation of the main stack baghouse and a discussion of the permittee's progress in satisfying their obligations in connection with the indirect firing system. At a minimum the report shall include a narrative description of activities undertaken and an itemization (with copies of supporting documentation) of costs incurred since the previous report. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.a)**

10. If the permittee violates, or has reason to believe that it may violate, any requirement of the Consent Decree Case No. 1:06-cv-607, the permittee shall notify the MDEQ of such violation and its likely duration in writing within ten working days of the day the permittee first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the permittee shall include a statement to that effect in the report. The permittee shall investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within 30 days of the day the permittee becomes aware of the cause of the violation. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.b)**

11. In the case of any violation of Consent Decree Case No. 1:06-cv-607 or other event that may pose an immediate threat to the public health or welfare or the environment, the permittee shall notify the MDEQ orally or by electronic or facsimile transmission as soon as possible, but not later than 24 hours after the permittee first knew of the violation or event. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**

12. Each report submitted by the permittee pursuant to Consent Decree Case No. 1:06-cv-607 shall be signed by the responsible official of the submitting party and include the following certification: I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of these individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**

13. Prior to emissions testing, the permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.12001(3))**

14. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated emissions test date. **(R 336.2001(4))**

15. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the emissions test. **(R 336.2001(5))**

16. No less than 60 days prior to the performance evaluation of the COM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the COM system complies with the requirements of PS 1.[2] **(40 CFR 60.7, R 336.2170)**

17. No less than 30 days prior to the SO_2 performance evaluation of the CEMS system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEMS system complies with the requirements of PS 6.[2] **(40 CFR 60.13, 40 CFR, Part 60, Appendix B)**

18. No less than 30 days prior to the performance evaluation of the NOx CEMS, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEMS complies with the requirements of PS 6.[1] **(40 CFR, Part 60, Appendix B, R 336.1801(11), 40 CFR 60.13)**

19. The daily clinker production rate shall be submitted to the AQD District Supervisor within one month after the end of the calendar quarter. All records, including data generated during reviews and audits of clinker production as referred to in Appendix 3, shall be made available to the Department upon request.[2] **(R 336.1205, R 336.1213(b))**

20. Within 30 days of written request by the AQD District Supervisor, the permittee shall submit to the District Supervisor a written summary of the results of any review or audit of clinker production. The summary shall compare the tons of clinker produced as determined in the review or audit to the tons of clinker produced as calculated using Appendix 3.[2] **(R 336.1201(3), R 336.1205)**

21. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of the SO_2 Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60).[2] **(40 CFR 60.13, Appendix F)**

22. The permittee shall notify the AQD District Supervisor, when receiving asphalt flake or plastic fuel from a new supplier and/or new source (as defined in Appendix 5), or a supplier and/or source that has not been used in the last two years. The notification shall include the following information within the timeframe listed:[1] **(R 336.1225)**
    a. Name of the new material supplier and/or source – 30 days before delivery.
    b. Description of what the material was generated for or from – 30 days before delivery.
    c. A sampling analysis summary of the material identifying the constituents as described in Appendix 5 – upon delivery.

23. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2(i))**

24. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime If there were no periods of monitor downtime in the reporting period, thane this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2(ii))**

See Appendices 3 and 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVMAIN	132[2]	323[2]	40 CFR 52.21 (c) and (d), R 336.1225, R 336.2803, R 336.2804
2. SVBYPASS	78[2]	225[2]	40 CFR 52.21 (c) and (d), R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

1. Upon the February 7, 2018 compliance date, the stationary source will be subject to all future applicable requirements of a State or Federal plan to be promulgated implementing the emission guidelines of 40 CFR, Part 60, Subpart DDDD, Commercial and Industrial Solid Waste Incineration (CISWI) units that commenced construction on or before November 30, 1999. **(This condition is provided for informational purposes, there is no current underlying applicable requirement)**

2. The permittee shall promptly notify the AQD for the need to modify the CAM Plan if the existing plan is found to be inadequate and shall submit a proposed modification to the ROP if necessary. **(40 CFR 64.7(e))**

3. The permittee shall comply with all applicable requirements of 40 CFR, Part 64. **(40 CFR, Part 64)**

4. The permittee shall comply with all applicable requirements of the Regional Haze Regulations requiring Best Available Retrofit Technology (BART) effective January 1, 2017. **(40 CFR 52.1183(h))**

Footnotes:

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGFINISHMILLS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This Flexible Group deals with pulverizing the cooled clinker after it has left the kiln and cooling areas. The clinker is ground in the mills-which are horizontal steel tubes filled with steel balls. As the tubes rotate, the steel balls tumble and crush the clinker into a superfine gray powder known as Portland Cement. A small amount of gypsum is added during the final grinding to control the set.

Emission Units: EUFINISHMILL1, EUFINISHMILL2, EUFINISHMILL3. EUFINISHMILL4

POLLUTION CONTROL EQUIPMENT

Baghouses

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible emissions	10 percent opacity[2]	NA	FGFINISHMILLS	SC V.1, VI.1	**R 336.1201(3) 40 CFR 63.1343(b)(1) Table 1(16) 40 CFR 63.1345 40 CFR 60.62(c)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FGFINISHMILLS unless the Operations and Maintenance Plan (OMP) is implemented and maintained.[2] **(R 336.1205, R 336.1901, 40 CFR 63.1347)**

2. The permittee shall not operate FGFINISHMILLS unless a Start-up, Shut-down, and Malfunction plan that describes how emissions will be minimized during all startups, shutdowns, and malfunctions, is implemented and maintained.[2] **(R 336.1911, 40 CFR 63.6(e)(3))**

~~2.~~3. The permittee may store clinker onsite according to the procedures outlined in 40 CFR 63.1343(c). (40 CFR 63.1343(c))

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform a 3-hour (thirty 6-minute averages) Method 9 performance test for FGFINISHMILLS every 12 months. The Method 9 performance test may be reduced to 1 hour if there are no individual readings greater than ten percent opacity and there are no more than three readings of ten percent for the first 1 hour period. **(40 CFR 63.1349(b)(2))**

2. The permittee shall conduct opacity tests of FGFINISHMILLs in accordance with 40 CFR Part 63, Subparts A and LLL.2 (40 CFR 63.1349(b)(2))

3.

~~1.~~4.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

~~I.~~ 1. The permittee shall perform and document non-certified visible emissions observations as required in SC I.1 on a daily basis when FGFINISHMILLs is operating. If during the observation there are any visible emissions detected from an emission point, an EPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, EPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD and made available upon request. (R 336.1910, R 336.1911, 40 CFR 60.64, 40 CFR 63.1349(b)(2))~~The permittee shall monitor visible emissions from FGFINISHMILLS. The permittee shall conduct a daily 6-minute visible emissions test of each emission unit in FGFINISHMILLS in accordance with Method 22 of 40 CFR, Part 60, Appendix A while the affected source is in operation at the representative performance condition. If visible emissions are observed, the permittee shall conduct a follow up Method 22 performance test within 24 hours. If visible emissions are observed during the follow up Method 22 performance test, the permittee shall conduct an opacity test of each stack from which emissions were observed in accordance with Method 9. The duration of the Method 9 test must be 30 minutes.[2] **(40 CFR 63.1350(f)(2))**~~

~~II. If visible emissions are observed during any Method 22 visible emissions test conducted under SC VI.1, the permittee must initiate, within one hour, the corrective actions specified in your OMP. (40 CFR 63.1350(f)(3))~~

~~III.~~1. The permittee shall keep, in a satisfactory manner, visible emission records for FGFINISHMILLS. All records shall be made available to the Department upon request.[2] **(40 CFR 63.1355, 63.10(b)(2)(viii))**

~~IV.~~2. The permittee shall keep records as required in the OMP. All records shall be made available to the Department upon request.[2] **(R 336.1911)**

VII. REPORTING

1. The permittee shall submit all applicable reports as described in the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants as they apply to FGFINISHMILLS. **(40 CFR 63.1354, 40 CFR 60.65)**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

a. 1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR, Part 63, Subparts A and LLL.[2] **(40 CFR, Part 63, Subparts A & LLL)**

b. 2. The permittee shall comply with the approved OMP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(40 CFR 63.1347)**

c. 3. The permittee shall comply with the approved SSM, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGNONKILNFACILITY
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This Flexible Group deals with handling the non-kiln materials, non-kiln gasses, non-kiln fuels, and non-kiln dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand; clinker cooler gasses; coal and petroleum coke; and the finished cement product that is shipped for sale.

Emission Units: EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUCOALSYSTEM, EUCKDHANDSTOR, EUBLENDSILO, EUFINISHMILL4

POLLUTION CONTROL EQUIPMENT

Fabric filter baghouses for particulate matter control. NEW009 – Raw Mill Blending Silo Extraction
NEW0009-1 – PH Bucket Tower Inlet
NEW010 – Top of PH Tower Feed
NEW013 – Clinker Conveyor
NEW014 – Clinker Conveyor Transfer

NEW014-1 – Clinker Conveyor Transfer #2
NEW015 – Cement Mill 4 Feed Conveyor
NEW015-1 – Cement Mill 4 Feed Conveyor #2
NEW015-2 – Cement Mill 4 Feed Conveyor #3
NEW017 – Cement Air Slides to Cement Cooler
NEW018 – Cement Silos Feed

Two pulse-jet baghouses at the transfer point of raw feed from the raw mill into the silo and the transfer point of blended and uniform raw feed from the silo out to the conveyance equipment which delivers the raw feed to the top of the calciner/precalciner.~~Baghouses~~

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. ~~Visible emissions~~Opacity	10 percent opacity[2]	~~NA~~Test Protocol*	~~EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUCOALSYSTEM, EUCKDHANDSTOR~~ FGNONKILNFACILITY	SC VI.1	**R 336.1201(3)** **40 CFR 63.1345** **40 CFR 60.62(c)**
2. ~~Particulate emissions~~PM	0.15 pounds per thousand pounds of exhaust gas[2]	~~NA~~Test Protocol*	~~EURAWMATHANDSTOR~~ FGNONKILNFACILITY	SC VI.1	**R 336.1331(1)(a)**
3. PM10	0.37 pph	Test Protocol*	Each for SVNEW015, SVNEW015-1, SVNEW015-2 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
4. PM2.5	0.37 pph	Test Protocol*	Each for SVNEW015, SVNEW015-1, SVNEW015-2 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
5. PM10	0.041 pph	Test Protocol*	SVNEW017 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
6. PM2.5	0.041 pph	Test Protocol*	SVNEW017 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
7. PM10	0.016 pph	Test Protocol*	SVNEW018 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
8. PM2.5	0.016 pph	Test Protocol*	SVNEW018 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
9. PM10	0.0167 pph	Test Protocol*	Each for SVNEW013, SVNEW014, SVNEW014-1 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
10. PM2.5	0.0167 pph	Test Protocol*	Each for SVNEW013, SVNEW014, SVNEW014-1 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
11. PM10	0.042 pph	Test Protocol*	Each for SVNEW009, SVNEW009-1, SVNEW010 of EURAWMATHANDSTOR	SC VI.1	R 336.2803, R 336.2804
12. PM2.5	0.042 pph	Test Protocol*	Each for SVNEW009, SVNEW009-1, SVNEW010 of EURAWMATHANDSTOR	SC VI.1	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The requirement to conduct Method 22 visible emissions monitoring pursuant to SC VI.1 and 40 CFR 63.1350(f)(1) do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" means a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan. **(40 CFR 63.1350(f)(1)(v))**

~~1.~~ The permittee shall not operate FGNONKILNFACILITY unless the Operations and Maintenance Plan (OMP) is implemented and maintained.[2] **(R 336.1205, R 336.1901, 40 CFR 63.1347)**

3. The permittee shall not operate FGNONKILNFACILITY unless a PM/MAP ~~Start-up, Shut-down, and Malfunction plan~~ that describes how emissions will be minimized during all startups, shutdowns, and malfunctions, is implemented and maintained.[2] **(R 336.1911, 40 CFR 63.6(e)(3))**

Commented [YDM19]: Cite is to a general NESHAP requirement for an SSM plan. If this condition is appropriate for the non-kiln EU's it should probably be here and in EUINLINEKILN, EUFINISHMILL4 and EUCLINKERCOOLER as well.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The belt conveyor installed to convey refractory to the kiln system shall be covered or located in an enclosed structure.[2] **(R 336.1301)**

~~1.~~

2. The permittee shall not operate FGNONKILNFACILITY unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for FGNONKILNFACILITY. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

3. The permittee shall not operate EUBLENDSILO of EUNONKILNFACILITY unless the associated enclosures or fabric filters are installed, maintained and operated in a satisfactory manner. The permittee shall equip each

fabric filter with a bag leak detector system or an alternative monitoring method as approved in writing by the AQD District Supervisor. Satisfactory manner includes operating and maintaining each fabric filter control device in accordance with an approved Malfunction Abatement Plan. (R 336.1205, R 336.1225, R 336.1301, R 336.1910)

Commented [YDM20]: From PTI 115-15

4.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Monthly 10-minute visible emissions observations using USEPA Method 22 shall be conducted on each emission point of FGNONKILNFACILITY while operating. If visible emissions are observed, 30 minutes of opacity observations, recorded at 15-second intervals must be conducted in accordance with USEPA Method 9. The USEPA Method 9 test shall begin within one hour of any observation of VE. The test frequency shall be semiannual for each emission point for which there are no visible emissions observed over six consecutive monthly tests. The test frequency shall be annually if there are no visible emissions observed for an emission point during the semiannual test for the emission point. If any visible emissions are observed in the semiannual or annual visible emissions observations for an emission point, the facility shall resume monthly testing until the emission point again meets the requirements for semiannual or annual testing. **(R 336.1213(3), 40 CFR 63.1350(f)(1))**

2. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the permittee must conduct a Method 22 performance test according to the requirements of SC VI.1 above for each such conveying system transfer point located within the building, or for the building itself, according to SC VI.3 and 40 CFR 63.1350(f)(1)(vii). **(40 CFR 63.1350(f)(1)(vi))**

3. If monitored emission points include visible emissions from a building, the requirements of SC VI.1 apply to the monitoring of the building. The permittee must test visible emissions from each side, roof, and vent of the building for at least 10 minutes using USEPA Method 22. **(40 CFR 63.1350(f)(1)(vii))**

4. The permittee shall keep, in a satisfactory manner, visible emission records for FGNONKILNFACILITY. All records shall be made available to the Department upon request.[2] **(40 CFR 63.1355, R 336.1213(3))**

5. The permittee shall keep records as required in the OMP. All records shall be made available to the Department upon request.[2] **(R 336.1911)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVNEW009	22	50	R 336.1225, R 336.2803, R 336.2804
2. SVNEW009-1*	24	24	R 336.1225, R 336.2803, R 336.2804
3. SVNEW010*	22	288	R 336.1225, R 336.2803, R 336.2804
4. SVNEW013*	14	24	R 336.1225, R 336.2803, R 336.2804
5. SVNEW014*	14	47	R 336.1225, R 336.2803, R 336.2804
6. SVNEW014-1*	14	79	R 336.1225, R 336.2803, R 336.2804
7. SVNEW015*	30	42	R 336.1225, R 336.2803, R 336.2804
8. SVNEW015-1*	30	49	R 336.1225, R 336.2803, R 336.2804
9. SVNEW015-2*	30	60	R 336.1225, R 336.2803, R 336.2804
10. SVNEW017	24	8.0	R 336.1225, R 336.2803, R 336.2804
11. SVNEW018	14	56	R 336.1225, R 336.2803, R 336.2804
*Horizontal Discharge			

~~Stack & Vent ID~~	~~Maximum Exhaust Dimensions (inches)~~	~~Minimum Height Above Ground (feet)~~	~~Underlying Applicable Requirements~~
~~NA~~	~~NA~~	~~NA~~	~~NA~~

IX. OTHER REQUIREMENT(S)

~~4.~~1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR, Part 63, Subparts A and LLL.[2] **(40 CFR, Part 63, Subparts A & LLL)**

~~5.~~2. The permittee shall comply with the approved OMP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(40 CFR 63.1347)**

~~6.~~3. The permittee shall comply with the approved ~~SSM~~PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R336.1912)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGALTSAND/SOIL
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers the extraction and screening of alternative sand/soils from the former City of Charlevoix landfill located in the Quarry (alternative sand/soils) and the use of the alternative sand/soils as raw feed to the kiln.

Emission Units: EUQUARRYFUGITIVE, EUPRIMARYCRUSH, EUSECONDARYCRUSH, EURAWMILLS, ~~EUKILN~~EUINLINEKILN, EUBLENDSILO

POLLUTION CONTROL EQUIPMENT

Fabric filter on rock drill included in EUQUARRYFUGITIVE, baghouse on EUSECONDARYCRUSH. main stack baghouse, bypass stack baghouse.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

1. The alternative sand/soils shall not contain more than 1,573 pounds of lead per 12-month rolling time period, as determined at the end of each calendar month.[2] **(R 336.1205(3))**

2. The alternative sand/soils shall not contain more than 1,573 pounds of cadmium per 12-month rolling time period, as determined at the end of each calendar month.[2] **(R 336.1205(3))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not extract alternative sand/soils from the landfill unless a Material Screening Plan is implemented and maintained.[2] **(R 336.1205(3))**

2. The permittee shall not feed alternative sand/soils from the landfill to EUKILN until the alternative sand/soils have been analyzed, as required by SC V.1.[2] **(R 336.1205(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall determine the lead and cadmium content of the extracted alternative sand/soils from the landfill by testing at owner's expense, in accordance with USEPA 6000/7000 series test methods for total metals or alternative test methods as approved by the AQD District Supervisor. The permittee shall analyze at least one sample for every 600 cubic yards of alternative sand/soils extracted from the Quarry. After 10 valid sampling events, the permittee may submit a request for a change in the testing frequency to the AQD District Supervisor for review and approval.[2] **(R 336.1205(3))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

2.1. The permittee shall keep, in a satisfactory manner, records of the amount of alternative sand/soils extracted from the Quarry each week and a description of, and the amount of, material sent off-site for disposal or recycling.[2] **(R 336.1205(3))**

3.2. The permittee shall keep, in a satisfactory manner, records of the results of the analyses of the alternative sand/soils from the landfill carried out as required by SC V.1.[2] **(R 336.1205(3))**

4.3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the amount of lead consumed as part of the alternative sand/soils extracted from the Quarry.[2] **(R 336.1205(3))**

5.4. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period, as determined at the end of each calendar month, records of the amount of cadmium consumed as part of the alternative sand/soils extracted from the Quarry.[2] **(R 336.1205(3))**

See Appendix 4

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The Material Screening Plan shall include provisions for removing and properly disposing of or recycling of deleterious material, including large woody debris, large metallic materials, batteries, barrels and drums, and similar materials. The permittee shall amend the plan within 45 days upon request from the AQD District Supervisor. The permittee shall submit any amendments to the plan to the AQD District Supervisor for review and approval.[2] **(R 336.1205(3))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGMACTZZZZEMERGENCY
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group includes ~~two~~ one compression ignition (CI) existing emergency stationary reciprocating internal combustion engines (RICE) that have a maximum site rating of 500 brake horsepower (HP) (~~238HP and~~ 68HP)at a major source of hazardous air pollutants (HAPs) and that are subject to 40 CFR, Part 63, Subpart ZZZZ (40 CFR 63.6580-6675), the "RICE MACT".

Emission Units: ~~EUKILNDONKEY,~~ EUEMERGENCYGEN

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate ~~EUKILNDONKEY and~~ EUEMERGENCYGEN in accordance with the following limits: **(40 CFR 63.6640(f))**
   a. There is no time limit on the use of emergency stationary RICE in emergency situations.
   b. Emergency stationary RICE may be operated for the purposes of maintenance checks and readiness testing up to 100 hours per year.
   c. Emergency stationary RICE may be operated up 50 hours per year in non-emergency situations, but those hours are to be counted towards the 100 hours per year for maintenance and readiness testing.

~~1.~~2. The permittee shall operate and maintain ~~EUKILNDONKEY and~~ EUEMERGENCYGEN according to the manufacturer's emission-related operation and maintenance instructions or a plan developed by the facility that provides for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 63.6625(e) and 40 CFR 63.6640(a), Table 6(9)(a))**

~~2.~~3. The permittee shall maintain ~~EUKILNDONKEY and~~ EUEMERGENCYGEN in accordance with the operational limits in Table 2c to Subpart ZZZZ of 40 CFR, Part 63 which includes: **(40 CFR 63.6602, and Tables 2c(1), 40 CFR 63.6625(h))**
   a. The oil and filter must be changed every 500 hours of operation or annually, whichever comes first. Optionally, if the oil is analyzed as described in SC VI.2 and found to be good, no oil change is needed.
   b. The air cleaner must be inspected every 1000 hours of operation or annually, whichever comes first.
   c. All hoses and belts must be inspected every 500 hours of operation or annually, whichever comes first, and replaced as necessary.

d. During periods of startup minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

1.4. The permittee shall comply with the following general duty requirements:

1.a. Compliance with applicable emission limits and operating requirements is required at all times. **(40 CFR 63.6605(a))**

2.b. At all times, the emergency stationary RICE, including any monitoring equipment, must be operated in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by this standard have been achieved. **(40 CFR 63.6605(b))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip ~~EUKILNDONKEY and~~ EUEMERGENCYGEN each with a non-resettable hour meter. **(40 CFR 63.6625(f))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain the following records for ~~EUKILNDONKEY and~~ EUEMERGENCYGEN:

1.a. A copy of each notification and report submitted, including supporting documentation must be kept. **(40 CFR 63.6655(a)(1) and 40 CFR 60.4245(a)(1))**

2.b. Records of the occurrence and duration of each malfunction of ~~EUKILNDONKEY and~~ EUEMERGENCYGEN. **(40 CFR 63.6655(a)(2))**

3.c. Records of all required maintenance performed on the monitoring equipment. **(40 CFR 63.6655(a)(4))**

4.d. Records to demonstrate continuous compliance with the operating limitations in condition III.1. **(40 CFR 63.6655(d))**

5.e. Records of the maintenance conducted on ~~EUKILNDONKEY and~~ EUMERGENCYGEN in order to demonstrate that the stationary RICE was operated and maintained according to the facility maintenance plan. **(40 CFR 63.6655(e)(2))**

6.f. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The records must document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non- emergency operation. **(40 CFR 63.6655(f))**

2. The permittee shall meet the following monitoring and recordkeeping requirements when utilizing an oil analysis program in order in order to extend the oil change frequency specified in SC III.3. **(40 CFR 63.6625(i))**

a. The analysis program for emergency stationary CI engines must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later.

b. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

VII. REPORTING

a.1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

b.2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i)), 40 CFR 63.6640(b), 40 CFR 63.6650)**

c.3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

d.4. The permittee shall submit a semiannual compliance report that includes each instance in which the operating limitations in SC III.3 were not met. If there were no deviations from the operating limits, the report shall include a statement that there were no deviations from the operating limits during the reporting period. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.6640(b), 40 CFR 63.6650, Table 7)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines. **(40 CFR, Part 63, Subparts A and ZZZZ)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGCOLDCLEANERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Emission Unit: EUCOLDCLEANER

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**

2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
   a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

1.4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
   a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
   b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
   c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

The following conditions apply to: FGPROJECT2016

DESCRIPTION:

Emission Units: EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUFINISHMILL4, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUCLINKERCOOL, EUINLINEKILN

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouses for particulate matter control and SNCR.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the annual emissions of SO_2 from FGPROJECT2016 described in Appendix 4, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of FGPROJECT2016 resumes operation and shall continue for ten (10) years. **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

VII. REPORTING

1. The permittee shall submit records of the annual emission of SO_2 from FGPROJECT2016 described in Appendix 4, in tons per calendar year, to the AQD District Supervisor and Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:

   a) The calendar year actual emission of SO_2 exceed the baseline actual emissions (BAE) by a significant amount, and
   b) The calendar year actual emissions differ from the pre-construction projection. (The pre-construction projection is the sum of the projected actual emissions from each existing emission unit and the potential emissions from each new emission unit included in the Hybrid Applicability Test used for FGPROJECT2016.)

   The report shall contain the name, address, and telephone number of the facility; the annual emissions as calculated pursuant to SC VI.1, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
FGQUARRY	40 CFR, Part 63, Subpart LLL	40 CFR 63.1340(c) states that the equipment is not subject to 40 CFR, Part 63, Subpart LLL.

APPENDICES

Appendix 1. Abbreviations and Acronyms

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

AQD	Air Quality Division	MM	Million
acfm	Actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	MW	Megawatts
BTU	British Thermal Unit	NA	Not Applicable
°C	Degrees Celsius	NAAQS	National Ambient Air Quality Standards
CAA	Federal Clean Air Act	NESHAP	National Emission Standard for Hazardous Air Pollutants
CAM	Compliance Assurance Monitoring	NMOC	Non-methane Organic Compounds
CEM	Continuous Emission Monitoring	NOx	Oxides of Nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	Carbon Monoxide	NSR	New Source Review
COM	Continuous Opacity Monitoring	PM	Particulate Matter
department	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns in diameter
dscf	Dry standard cubic foot	pph	Pound per hour
dscm	Dry standard cubic meter	ppm	Parts per million
EPA	United States Environmental Protection Agency	ppmv	Parts per million by volume
EU	Emission Unit	ppmw	Parts per million by weight
°F	Degrees Fahrenheit	PS	Performance Specification
FG	Flexible Group	PSD	Prevention of Significant Deterioration
GACS	Gallon of Applied Coating Solids	psia	Pounds per square inch absolute
GC	General Condition	psig	Pounds per square inch gauge
gr	Grains	PeTE	Permanent Total Enclosure
HAP	Hazardous Air Pollutant	PTI	Permit to Install
Hg	Mercury	RACT	Reasonable Available Control Technology
hr	Hour	ROP	Renewable Operating Permit
HP	Horsepower	SC	Special Condition
H_2S	Hydrogen Sulfide	scf	Standard cubic feet
HVLP	High Volume Low Pressure *	sec	Seconds
ID	Identification (Number)	SCR	Selective Catalytic Reduction
IRSL	Initial Risk Screening Level	SO_2	Sulfur Dioxide
ITSL	Initial Threshold Screening Level	SRN	State Registration Number
LAER	Lowest Achievable Emission Rate	TAC	Toxic Air Contaminant
lb	Pound	Temp	Temperature
m	Meter	THC	Total Hydrocarbons
MACT	Maximum Achievable Control Technology	tpy	Tons per year
MAERS	Michigan Air Emissions Reporting System	µg	Microgram
MAP	Malfunction Abatement Plan	VE	Visible Emissions
MDEQ	Michigan Department of Environmental Quality	VOC	Volatile Organic Compounds
mg	Milligram	yr	Year
mm	Millimeter		

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FGKILNRAWMILLS.

Method for Determining Clinker Production from Raw Feed Input

The formula for determining clinker production (CP) is:

CP = KF x CCF

Where:
CP = hourly clinker production.

KF = the hourly in-line kiln raw material feed rate, this number is derived from the 557 scale.

CCF = the clinker conversion factor (clinker production rate divided by the kiln raw feed rate), this number is a variable derived from historical periodic checks.

Clinker production determined from raw feed input is dependent on various parameters. The amount of clinker produced from raw feed is site specific based on fuels used and their ash content at the time of use, raw material characteristics such as amount of organic that can be driven off in the process such as shale that would have a higher loss on ignition than slag or bottom ash, and other parameters involved in determining the amount of clinker generated from a given volume of raw materials.

The process of determining the CCF number is as follows:

~~a.~~1. A macro change to raw materials being fed to the kiln could trigger a CCF review or audit.

2. Clinker production during a given time period would be diverted from the clinker cooler and be sent to outside storage location.

3. After the clinker has cooled, it would be sent to an onsite scale to determine the tonnage of clinker produced in a given time period.

4. This tonnage of clinker would be compared to the KF for the same period of time to generate the CCF.

The CCF is multiplied by the raw feed rate, on a continuous basis, to determine clinker production for the same time period. This calculation is done by the Kiln controls system and automatically stored therein. The historic site-specific CCF ranges from 0.45 to 0.75. All plant scales are calibrated periodically to assure accuracy.

If any review or audit determines more clinker was produced than was calculated using the above method, this information shall be used to determine CCF in the future. However, previously-recorded and previously-reported hourly clinker production shall not be adjusted based on review or audit results.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

The permittee shall use the following approved test plans, procedures, and averaging to measure the pollutant emissions for the applicable requirements referenced in FGKILNRAWMILLS.

SAMPLING PLAN FOR
Alternate Fuels

1.I. **Definitions**

a.A. **Fuels**

i.1. Asphalt Flake is defined as asphalt shingles with aggregate material removed, in any form that contains no asbestos and has no appreciable amount of paint, stain, or other types of coatings.

ii.2. Recyclable Plastic is defined as resin code numbers 1, 2, 4, 5, 6, and 7; which contains no polyvinyl chloride (PVC) and contains no more than 15,000 ppmw of chlorine.

b.B. **Batch**

a.1. A quantity of material contained in one storage unit (i.e., stockpile, barge, etc.) or production run with a maximum volume of 5000 tons (or other volume as approved by the District Supervisor).

c.C. **Source**

i.1. A process that generates material which can be used as alternate fuels.

d.D. **Supplier**

1. An entity with different ownership and/or address.

e.E. **Independent Laboratory**

A.1. Any independent laboratory used by the facility for sampling analyses shall develop a Quality Assurance Plan (QAP). Detailed in the QAP shall be the Quality Assurance/Quality Control (QA/QC) procedures, sample handling, storage, chain of custody procedures, analytical methods for all analyses, a description of the laboratory instrumentation, and the instrumental detection limits. The analytical methods used by the independent laboratory should be consistent with the methods used by the Department. The facility shall maintain a copy of the approved QAP on site or at the corporate offices and be available for AQD inspection.

2.II. **Permittee requirements for alternate materials for use as a fuel under federal and state regulations.**

a.A. **Pre-delivery Sampling Plan - Asphalt Flakes**

i.1. When the supplier creates a new batch of asphalt flakes, a sample of the asphalt flakes shall be collected during the batch creation and labeled with the unique batch identification number. The sample shall be sent to an independent laboratory to verify the maximum levels of Chromium, Lead, Manganese, and Mercury. The maximum allowable levels are as follows:

Contaminant	Maximum Allowable Level
Chromium	1000 ppmw
Lead	1000 ppmw
Manganese	2000 ppmw
Mercury	121 ppbw

b.B. **Delivery Documentation:**

I.1. **Asphalt Flakes**

The following documentation shall be included with each delivery of asphalt flakes and kept on file and made available to the AQD upon request:

1.a. **Certification of Quality**
Certification from the supplier stating the asphalt flakes contain no asbestos and no appreciable amount of paint, stain, or other types of coatings.

2.b. **Sampling Analysis Report**
Results of the approved sampling analysis with all associated analytical data from an approved laboratory. The results shall correspond to the unique batch identification number given at the time the batch was sampled.

3.c. **Manifest**
Supplier name, source, unique batch identification number, date of delivery, and approximate deliverable weight of the asphalt flakes.

II.2. **Recyclable Plastic**

The following documentation shall be included with each delivery of recyclable plastic and kept on file and made available to the AQD upon request:

1.a. **Certification of Quality**
Certification from the supplier stating the recyclable plastic is numbers 1, 2, 4, 5, 6 or 7, which contains no PVC.

2.b. **Sampling Analysis Report**
Not required upon delivery. However, if the supplier certification does not adequately provide that the recyclable plastic contains no PVC then the permittee shall be required to provide a sampling analysis as required in II.C.2 of this sampling plan.

3.c. **Manifest**
Supplier name, source, unique batch identification number, date of delivery, and approximate deliverable weight of the recyclable plastic.

~~c.~~C. **Batch Delivery Sampling Plan:**

~~I.~~1. **Asphalt Flakes**

~~I.~~a. Each batch of asphalt flakes shall contain a unique batch identification number. A sufficient amount of material shall be collected to provide three (3) samples, from the delivery vessel, prior to mixing with material in on-site storage, and labeled with the unique batch identification number. If required by the AQD District Supervisor, the sample shall be sent to an independent laboratory to verify the maximum allowable levels of Chromium, Lead, Manganese, and Mercury, as described in II.A.1 of this sampling plan. The remaining material shall be maintained by the facility until the end of the calendar year.

~~II.~~b. A record of all batches received including the sampling analysis report with any associated analytical data from the independent laboratory, shall be kept on file and made available to the AQD upon request.

~~II.~~2. **Recyclable Plastic**

~~1.~~a. Each batch of recyclable plastic shall contain a unique batch identification number. A sufficient amount of material shall be collected to provide three (3) samples, from the delivery vessel, prior to mixing with material in on-site storage, and labeled with the unique batch identification number. If required by the AQD District Supervisor, a sample shall be sent to an independent laboratory to verify the maximum allowable level of Chlorine is no more than 15,000 ppmw. The material shall be maintained by the facility until the end of the calendar year.

~~2.~~b. A record of all batches received including any sampling analysis report with any associated analytical data from the independent laboratory, shall be kept on file and made available to the AQD upon request.

Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-B1559-2008, Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-B1559-2008 is being reissued as Source-Wide PTI No. MI-PTI-B1559-2014.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
129-09	201200089*	Extraction, screening and re-use of alternative sand/soils from City of Charlevoix landfill within the quarry.	FGQUARRY; FGNONKILNFACILITY; FGKILNRAWMILLS; FGALTSAND/SOIL
204-09	201200089*	Use of alternative raw materials including aluminum pot furnace refractory and clear, brown and green glass.	FGNONKILNFACILITY; FGKILNRAWMILLS
248-10A	201200089*	Use of asphalt flake and recyclable plastic as a supplemental fuel in the in-line calciner.	FGKILNRAWMILLS
700-77K	NA	New baghouse for kiln bypass stack.	FGKILNRAWMILLS

Appendix 7. Emission Calculations

Specific emission calculation requirement procedures or methods are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or flexible group special conditions. Therefore, this appendix is not applicable.

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the MDEQ, AQD, Report Certification form (EQP 5736) and MDEQ, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

APPENDIX 4 – Recordkeeping
for Actual to Projected-Actual Applicability Test

Commented [YDM21]: Appendix 4 from PTI 140-15, needs to be renumbered for ROP.

All information in this Appendix shall be maintained pursuant to R 336.2818 and 40 CFR 52.21(r)(6)(i) for ten years after the emission unit(s) identified in Table C resume normal operations, and shall be provided to the Department for the first year and thereafter made available to the Department upon request.

A. Project Description: St. Marys Cement, Inc. is an existing Portland cement manufacturing facility, located at 16000 Bells Bay Road, Charlevoix, Michigan. The plant consists of quarry operations, primary and secondary crushing systems, raw material feed receiving and storage areas, raw mill grinding and drying, coal and petroleum coke fuel receiving/storage/crushing areas, a calciner (where calcining begins and raw feed preheating occurs), a rotating kiln, clinker cooler, clinker storage systems, finish mill systems, and a cement storage and shipping facility. The raw mill, calciner and kiln are identified as an "in-line kiln system."

St. Marys Cement, Inc. is proposing to upgrade their existing Portland cement plant. The upgrade will result in an increase in the plant's capability to produce Potland cement from a current nominal design capacity of 4,480 short tons of clinker per day to a nominal 6,000 short tons of clinker per day, based on a 12-month rolling average, which will result in an increased production design capacity by approximately 24 percent. The following is a list of the proposed changes: replace the existing gravity clinker cooler, the existing rotating kiln will be replaced with a shorter kiln shell, a new solid fuel processing mill added to the existing coal processing mill, a new raw feed blending silo with associated material handling equipment (currently included in PTI 115-15), a new horizontal rotary finish ball mill will be added to the three existing mills, miscellaneous conveyance equipment will be installed and upgrades to existing conveyance equipment will be made.

B. Applicability Test Description: Hybrid Test

C. Limitations: 6,300 tons of clinker per day from EUINLINEKILN on a 30-day rolling average and 6,000 tons of clinker per day from EUINLINEKILN on a 12-month rolling time period.

Table C

		Emissions (tpy)			
Emission Unit/Flexible Group ID	Pollutant	Baseline Actual	Projected Actual	Excluded	Reason for Exclusion

EUINLINEKILN	SO_2	2,828	4,037	1,176	Capable of accommodating clinker production rate. (The maximum 30 consecutive day clinker production during the baseline period of 02/12/2008 through 02/11/2010 was determined and annualized for a 12-month period.)

ROP No: MI-ROP-B1559-2014
Expiration Date: August 20, 2019
PTI No: MI-PTI-B1559-2014

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: 1559	Section Number (if applicable):

1. Additional Information ID
AI-Compliance Plan

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

As described in SMCs November 20, 2018 letter to the MDEQ, stack testing was performed September 18-21, 2018, which showed compliance with PM and Dioxin/Furan emission limits included in the Portland Cement Manufacturing: National Emission Standard for Hazardous Air Pollutants (PC MACT). However, the plant was unable to determine compliance with the PC MACT OHAP limit due to the bypass stack emissions less than the method detection limit.

In addition to the PC MACT compliance testing, SMC also tested PM10/PM2.5 emissions per PTI 140-15. For the coal mill, SMC passed the PM10/PM2.5 limits, although condensable emissions were reported for this emission unit, even though we do not believe the coal mill is a source of condensable emissions. The clinker cooler testing also identified condensable emissions, however according to the Portland Cement Association, clinker coolers are not a source of condensable. Therefore, we believe the condensable emissions in the clinker cooler are an anomaly, and without the condensable emissions the clinker cooler passes PM2.5/PM10 emission limits.

The main and bypass stacks were tested for PM2.5/PM10, and due to a number of reasons, including testing biases, excessive ammonia slip, increased raw material sulfur content causing increased SO2 emissions, which resulted in elevated condensable emissions. SMC does not believe these test results to be representative of kiln operations. SMC is investigating the ammonia slip, and will implement procedures to minimize ammonia slip.

Retesting EUINLINEKILN for OHAPs/PM2.5/PM10 and EUCLINKERCOOLER for PM2.5/PM10, will be rescheduled after the outage scheduled circa February through March, 2019.

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: 1559	Section Number (if applicable):

1. Additional Information ID
AI-PartC

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

C4. Criteria pollutant PTE calculations performed as part of PTI 140-15 application are included in this renewal application.

C9. MAP, OM, and the fugitive dust plan are attached

C10. 40 CFR, Part 63, Subpart LLL 63.1340(c) states that FGQUARRY equipment is not subject to 40 CFR, Part 63, Subpart LLL.

In Line Kiln System (Raw Mill, Calciner, Kiln)
NSR Regulated Pollutant Emissions
Air Permit to Install Application
Saint Marys Cement, Charlevoix, MI

Clinker Production	6,000	short tons/day
	1,927,200	short tons/year
Main Stack Air Flow	465,689	ACFM
BY-Pass Stack Air Flow	82,180	ACFM
Kiln Heat Input Capacity	374	*MMBtu/hr*
Calciner Heat Input Capacity	448	MMBtu/hr
Annual Capacity Factor	88%	

NSR Regulated Pollutant	*Main Stack*					*By-Pass Stack*					Both Stacks Total (tpy)
	Emission Factor		Short-Term Emissions (lb/hr)	Total Short-Term Emissions (lb/day)	Total Annual Emissions (tpy)	Emission Factor		Short-Term Emissions (lb/hr)	Total Short-Term Emissions (lb/day)	Total Annual Emissions (tpy)	
CO	6.05	lb/ton Clinker 1	1,513	36,300	5,829.78	0.29	lb/ton Clinker 1	71.5	1,716	275.59	6,105
NO_X	2.0	lb/ton Clinker 2	595	14,280	1,965.74	0.4	lb/ton Clinker 2	105.0	2,520	346.90	2,313
PM (Filterable)	0.06	lb/ton Clinker 4	14.88	357.00	57.33	0.01	lb/ton Clinker 3	2.63	63.00	10.12	67
PM_{10} (Filterable + Condensable)	0.20	lb/ton Clinker 5	48.88	1,173.00	188.38	0.03	lb/ton Clinker 4	8.63	207.00	33.24	222
$PM_{2.5}$ (Filterable + Condensable)	0.20	lb/ton Clinker 5	48.88	1,173.00	188.38	0.03	lb/ton Clinker 4	8.63	207.00	33.24	222
SO_2	3.4	lb/ton Clinker 3	956	22,950	3,268.05	0.6	lb/ton Clinker 2	168.8	4,050	576.71	3,845
VOC	0.17	lb/ton Clinker 1	41	990	158.99	4.4E-02	lb/ton Clinker 1	11.00	264.00	42.40	201
Lead	7.01E-05	lb/ton Clinker 6	0.02	0.42	0.07	1.2E-05	lb/ton Clinker 5	3.1E-03	0.07	0.01	0.08
H_2SO_4	0.03	lb/ton Clinker 7	8.31	199.42	32.03	0.006	lb/ton Clinker 6	1.47	35.19	5.65	38
CO_2	1,806.2	lb/ton Clinker 1	451,550	10,837,200	1,740,454	46.2	lb/ton Clinker 1	11,550	277,200	44,518	1,784,973
CH_4	0.02	lb/MMBtu 8	16.91	405.80	65.17	3.63E-03	lb/MMBtu 7	2.98	71.61	11.50	77
N_2O	0.003	lb/MMBtu 8	2.46	59.03	9.48	5.28E-04	lb/MMBtu 7	0.43	10.42	1.67	11
GHG as CO_2e		9	452,706	10,864,935	1,744,909		8	11,754	282,094	45,304	1,790,213

Emission Factor Notes

1 - SMC material Testing including a safety factor of 10%. Main stack emission rates are based on max emission rates between raw mill on and raw mill off.

2 - BART Limit of 2.4 lb/ton clinker for annual emissions & BART 2.8 lb/ton clinker for hourly/daily emissions and multiplied by the ratio of Stack Air Flows.

Main (lb/ton)	2.4	Bypass (lb/ton)	0.4

3 - Limit of 3.99 lb/ton clinker for annual emissions & Limit of 4.5 lb/ton clinker for hourly/daily emissions and multiplied by the ratio of Stack Air Flows.

Main (lb/ton)	3.8	Bypass (lb/ton)	0.7

4 - 40 CFR 63 Subpart LLL Table 1, Item 1, multiplied by the ratio of Stack Air Flows.

5 - AP42 Table Table 11.6-2 Condensable PM Factor (0.16 lb/ton clinker) + PM Filterable LLL Limit.

6 - MAER Emission Factor for SCC 30500606 controlled by Fabric Filter, mulitplied by 10% safety factor, multiplied by a ratio of stack air flows.

7 - The H_2SO_4 emission factor assumes approximately 0.8% of the SO_2 is emitted as SO_3 and then converts to H_2SO_4 in the presence of moisture. This is then multiplied by the ratio of the molecular weight of H_2SO_4 to SO_3 (which is 98/80).

8 - GHG Monitoing Rule Table C-2 Emission Factors in kg/MMBtu muliplied by 2.2 lb/kg and multiplied by the ratio of Stack Air Flows.

9 - CO_2 X 1 GWP + CH_4 X 25 GWP + N_2O X 298 GWP

In Line Kiln System (Raw Mill, Calciner, Kiln)
NSR Regulated Pollutant Emissions
Air Permit to Install Application
Saint Marys Cement, Charlevoix, MI

Emission Calculation Methods

Factor in lb/ton Clinker

Short term Emissions (lb/hr) = Clinker Production (ton/day) / 24 hr/day X Emission Factor lb/ton Clinker
Short term Emissions (lb/day) = Clinker Production (ton/day) X Emission Factor lb/ton Clinker
Annual Emissions (ton/yr) = Clinker Production (ton/yr) X Emission Factor lb/ton Clinker / 2000 lb/ton

Factor in lb/MMBtu

Short term Emissions (lb/hr) = [Kiln Heat Input (MMBtu/hr) + Calciner Heat Input(MMBtu/hr)] X Emission Factor lb/MMBtu
Short term Emissions (lb/day) = Short Termi Emission Rate (lb/hr) X 24 hr/day
Short term Emissions (tpy) = Short Termi Emission Rate (lb/hr) X 8760 hr/yr X Capacity Factor (%) / 2000 lb/ton

Particulate Emissions from Material Handling Operations
NSR Regulated Pollutant Emissions
Air Permit to Install Application
Saint Marys Cement, Charlevoix, MI

	Projected		2014	
Clinker Production	6,000	short tons/day		
	1,927,200	short tons/year	1,032,745	short tons/year
Raw Material[A]	9,395	short tons/day		
	3,017,828	short tons/day	1,617,189	short tons/day

Source	Emission ID	Applicable SCCs	Description	Control	Control Efficiency	Throughput				Emission Factors						Emissions					
						2014 Annual	Short Term (hourly)	Annual	Unit	PM		PM_{10}		$PM_{2.5}$		PM		PM_{10}		$PM_{2.5}$	
										lb/unit	Note	lb/unit	Note	lb/unit	Note	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Quarry Fugitive																					
Overburden	Quarry	30501030	Top Soil Removal	Wet material	80%	115,100	27.9 A	214,788 B	TON-TOPSOIL	6.00E-02	1	5.80E-02	3	8.78E-03	2	0.33	1.29	0.32	1.25	0.05	0.19
	Quarry	30501032	Top Soil Unloading	Wet material	80%	115,100	27.9 A	214,788 B	TON-TOPSOIL	4.00E-02	1	4.00E-02	3	6.06E-03	2	0.22	0.86	0.22	0.86	0.03	0.13
	Quarry	30501037	Truck Loading Over Burden	Wet material	80%	115,100	27.9 A	214,788 B	TON-OVERBURDEN	2.06E-02	2	1.50E-02	3	2.27E-03	2	0.11	0.44	0.08	0.32	0.01	0.05
Blasting	Quarry	30502009	Blasting Uncontrolled	Wet material / settles in quarry	90%	1,472,022	356.3 A	2,746,932 B	TON-STONE	7.60E-02	1	7.60E-02	3	1.15E-02	2	2.71	10.44	2.71	10.44	0.41	1.58
Drilling	Quarry	30502010	Wet Drilling Uncontrolled	Wet material	99%	1,472,022	356.3 A	2,746,932 B	TON-STONE	8.00E-05	1	8.00E-05	3	1.21E-05	2	2.85E-04	1.10E-03	2.85E-04	1.10E-03	4.32E-05	1.66E-04
Loading	Quarry	30502031	Truck unloading uncontrolled		-	1,472,022	356.3 A	2,746,932 B	TON-STONE	2.19E-05	2	1.60E-05	3	2.42E-06	2	7.82E-03	0.03	5.70E-03	0.02	8.63E-04	3.33E-03
	Quarry	30502033	Truck loading FEL uncontrolled		-	1,472,023	356.3 A	2,746,934 B	TON-STONE	1.37E-04	2	1.00E-04	3	1.51E-05	2	0.05	0.19	0.04	0.14	5.40E-03	0.02
Haul to Primary Crusher	Quarry	30502011	Hauling	FD Plan	85%	9,241	2.2 C	17,245 C	MILE-DEVICE	2.03E+01	5	6.20E+00	3	6.20E-01	5	6.80	26.19	2.08	8.02	0.21	0.80
Limestone to Finishmill	Limestone Conyeyor	30500612	Conyeyor	Wet material	80%	34,870	8.4 A	65,071 B	TON-CEMENT,RAW	2.06E-01	2	1.50E-01	3	2.27E-02	2	0.35	1.34	0.25	0.98	0.04	0.15
Sand Piles	Pile - Sand	30500608	Piles	Wet material	80%	46,575	11.3 A	86,913 B	TON-YR-CEMENT,RAW	1.65E-01	2	1.20E-01	6	1.82E-02	2	0.37	1.43	0.27	1.04	0.04	0.16
Quarry Crushing and Screening Operations																					
Hammer/Jaw	Quarry	30502001	Hammer/Jaw	Wet material	80%		19.6 D	150,891 D	TON-STONE	3.29E-03	2	2.40E-03	3	3.63E-04	2	0.01	0.05	9.40E-03	0.04	1.42E-03	5.48E-03
Primary Crushing	Quarry	30502001	Primary Crushing	Wet material	80%	1,617,189	391.5 A	3,017,828 B	TON-STONE	3.29E-03	2	2.40E-03	3	3.63E-04	2	0.26	0.99	0.19	0.72	0.03	0.11
Secondary Crushing	Secondary Crushing and Screening	30502002	Secondary Crushing	Fabric Filter	99%	1,617,189	391.5 A	3,017,828 B	TON-STONE	1.50E-02	11	1.50E-02	1	1.50E-02	11	0.06	0.23	0.06	0.23	0.06	0.23
Screening	Secondary Crushing and Screening	30502004	Screening	Fabric Filter	99%	1,617,189	391.5 A	3,017,828 B	TON-STONE	1.50E-02	11	1.50E-02	1	1.50E-02	11	0.06	0.23	0.06	0.23	0.06	0.23
Raw Material Handling and Storage																					
Received and Quarried Raw Material Unloading	Quarry	30500607	Raw Material Unloading	Damp Material	70%	388,472	94.0 A	724,926 B	TON-CEMENT,RAW	1.00E-01	11	1.00E-01	3	1.51E-02	2	2.82	10.87	2.82	10.87	0.43	1.65
Indoor and Outdoor Storage Piles	Pile - Raw	30500608	Raw Material Piles	Damp Material	90%	1,860,494	450.4 A	3,471,858 B	TON-YR-CEMENT,RAW	1.40E-01	11	1.40E-01	4, 6	2.12E-02	2	6.31	24.30	6.31	24.30	0.95	3.68
Conveyors to Material Silos	Conveyor	30500612	Raw Material Transfer	Damp Material/Enclosed	90%	1,860,494	450.4 A	3,471,858 B	TON-CEMENT,RAW	1.50E-01	11	1.50E-01	3	2.27E-02	2	6.76	26.04	6.76	26.04	1.02	3.94
Kiln Feed Systems																					
Raw Mill Feed	Raw Mill Feed	30500624	Feed elevators and conveyors into Raw Mill	Enclosed - Capture Efficiency	90%	1,689,734	409.0 A	3,153,204 B	TON-RAW MATERIALS	3.10E-03	11	3.10E-03	6	3.10E-03	11	0.13	0.49	0.13	0.49	0.13	0.49
Raw Feed from Raw Mill to Blending Silo	Raw Mill Feed	30500699	Raw Material Handling	Enclosed - Capture Efficiency	90%	1,689,734	409.0 A	3,153,204 B	TON-RAW MATERIALS	3.10E-03	11	3.10E-03	6	3.10E-03	11	0.13	0.49	0.13	0.49	0.13	0.49
Kiln Feed System	Raw Mill to Blending Silo	30500699	Blending Silo	Enclosed - Capture Efficiency	90%	1,689,734	409.0 A	3,153,204 B	TON-RAW MATERIALS	3.10E-03	11	3.10E-03	6	3.10E-03	11	0.13	0.49	0.13	0.49	0.13	0.49
Kiln Feed System	Blending Silo to Tower	30500624	Kiln feed from Blending Silo to Tower	Enclosed - Capture Efficiency	90%	1,689,734	409.0 A	3,153,204 B	TON-RAW MATERIALS	3.10E-03	11	3.10E-03	6	3.10E-03	11	0.13	0.49	0.13	0.49	0.13	0.49
Clinker Handling																					
Clinker Cooler	Clinker Cooler	30500614	Clinker Cooler	Baghouse		1,032,745	250.0 A	1,927,200 B	TON-CEMENT	2.00E-02	7	2.00E-02	8	2.00E-02	3	5.00	19.27	5.00	19.27	5.00	19.27
Clinker Storage	Clinker Transfer and Storage	30500615	Indoor Clinker Storage	Fabric Filter	99%	1,032,745	250.0 A	1,927,200 B	TON-CEMENT	1.20E-01	11	1.20E-01	6	1.20E-01	11	0.30	1.16	0.30	1.16	0.30	1.16
Clinker Storage	Pile - Clinker	30510302	Outdoor Clinker Storage (limited to 3 days per event).	FD Plan	80%	20,655	5 E	38,544 E	TON-CEMENT	1.20E-01	11	1.20E-01	6	1.20E-01	11	0.12	0.46	0.12	0.46	0.12	0.46
Clinker Transfer	FM Clinker Transfer	30500616	Conveyors and ladders, Feed to Finish Mill (Silo Feed)	Enclosed - Capture Efficiency	95%	1,032,745	250.0 A	1,927,200 B	TON-CEMENT	1.50E-01	11	1.50E-01	6	1.50E-01	11	1.88	7.23	1.88	7.23	1.88	7.23

Particulate Emissions from Material Handling Operations
NSR Regulated Pollutant Emissions
Air Permit to Install Application
Saint Marys Cement, Charlevoix, MI

	Projected		2014	
Clinker Production	6,000	short tons/day		
	1,927,200	short tons/year	1,032,745	short tons/year
Raw Material[A]	9,395	short tons/day		
	3,017,828	short tons/day	1,617,189	short tons/day

Source	Emission ID	Applicable SCCs	Description	Control	Control Efficiency	Throughput				Emission Factors						Emissions					
						2014 Annual	Short Term (hourly)	Annual	Unit	PM		PM_{10}		$PM_{2.5}$		PM		PM_{10}		$PM_{2.5}$	
										lb/unit	Note	lb/unit	Note	lb/unit	Note	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Finish Mills																					
Clinker Transfer	FM Clinker Transfer	30500616	From cooler interim storage to Finish Mills		0%	1,032,745	390.0 L	1,927,200 B	TON-CEMENT	1.40E-03	11	1.40E-03	6	1.40E-03	11	0.55	1.35	0.55	1.35	0.55	1.35
Grinding (3 existing)	Nos. 1, 2 & 3 FM	30500617	Grinding of Clinker with Additives	Baghouse	99.99%	1,112,975	270.0 K	1,151,861 H	TON-CEMENT	8.20E+01	11	8.20E+01	3	8.20E+01	3	2.21	4.72	2.21	4.72	2.21	4.72
Grinding (1 new Horizontal Mill)	No. 4 FM	30500617	Grinding of Clinker with Additives	Baghouse	99.99%	NA	120.0 F	925,056 G	TON-CEMENT	8.20E+01	11	8.20E+01	3	8.20E+01	3	0.98	3.79	0.98	3.79	0.98	3.79
Cement Handling																					
Cement Storage	Cement Transfer and Storage	30500618	Cement Silos & Dome	Fabric Filter	99.5%	1,181,993	390.0 L	2,205,711 B	TON-CEMENT	2.00E-01	11	2.00E-01	6	2.00E-01	11	0.39	1.10	0.39	1.10	0.39	1.10
Cement Loadout	Cement Loadout	30500619	Cement Shipped Off-site by truck, ship or barge	Fabric Filter	99%	1,351,163	390.0 L	2,521,398 B	TON-CEMENT	2.00E-01	11	2.00E-01	3	2.00E-01	3	0.78	2.52	0.78	2.52	0.78	2.52
CKD Handling																					
CKD Handling	Pile - Landfill	30500699	CKD shipped to landfill or sold	FD Plan	80%	18,829	4.6 A	35,137 B	TON-CEMENT	2.00E-01	11	2.00E-01	6	2.00E-01	11	0.18	0.70	0.18	0.70	0.18	0.70
Coal, Pet Coke System																					
Coal and Pet Coke Storage	Pile - Coal/PetCoke	30510403	Coal/Pet Coke Storage Piles from barge	Wet material	80%	163,343	38.5 A	296,760 I	TON-COAL or PET COKE	1.40E-01	11	1.40E-01	6	1.40E-01	11	1.08	4.15	1.08	4.15	1.08	4.15
Coal/Pet Coke Transfer	Raw Coal/Petcoke Transfer	30510503	From Storage Piles to Indoor Storage	Wet material	85%	134,147	31.6 A	243,717 J	TON-COAL or PET COKE	1.50E-01	11	1.50E-01	6	1.50E-01	11	0.71	2.74	0.71	2.74	0.71	2.74
Coal/Pet Coke Mill	Coal/Petcoke Mill	30501010	New Pet Coke Mill	Baghouse	NA	NA	31.6 A	243,717 J	TON-COAL or PET COKE	4.04E-02	9	3.39E-02	9	1.21E-02	9	1.28	4.92	1.07	4.13	0.38	1.47
Pulverized Coal/Pet Coke Transfer	Coal/Pet Coke Transfer and Storage	30500621	Coal / Pet Coke Mill into Kiln	Fabric Filter	99%	134,147	31.6 A	243,717 J	TON-COAL or PET COKE	1.50E-01	11	1.50E-01	6	1.50E-01	11	0.05	0.18	0.05	0.18	0.05	0.18
Aluminum Source Handling and Storage	Fly Ash Transfer and Storage	30500699	Aluminum Source Handling and Storage	Fabric Filter	99%	23	0.0 A	43 B	TON-FLYASH	1.50E-01	11	1.50E-01	6	1.50E-01	11	8.35E-06	3.22E-05	8.35E-06	3.22E-05	8.35E-06	3.22E-05
														TOTAL		43.23	161.19	37.99	140.97	18.47	65.74
														TOTAL HAUL		6.80	26.19	2.08	8.02	0.21	0.80
														TOTAL W/O HAUL		36.44	134.99	35.91	132.95	18.26	64.93

Throughput Notes
A - Projected Short term Clinker Throughput (tons/day) / Projected Clinker Production (tons/yr) X Annual Throughput (tons/year) / 24 hr/day
B - 2014 Throughput / 2014 Clinker Production X Projected Clinker Production
C - Raw Material (tons/day) / 175 tons/mile
D - Assume only 5% of material goes through jaw
E - 2% of Clinker Produced
F - Estimated Short term production rate
G - Short Term Production rate (tons/hr) X 8760 hr/day X 88% Capacity
H - Throughput calculated per Note B minus New Horizontal Mill Throughput
I - Maximum Coal and Pet Coke Fuel Throughputs muliplied by 2014 Pile to 2014 Usage Ratio (see Appx 5.1)
J - See Maximum Coal and Pet Coke Fuel Throughputs
K - Short term Capacity, used for short term modeled emissions.
L - Sum of Finish Mill throughputs

Emission Factor Notes
1 - MAERS Mineral Product Processes Fact Sheet
2 - Ratio of PM10 Factor to Particle Size Multiplier given in 13.2.4 Aggregate Handling And Storage Piles (page 4) 11/06 : PM10 (K)= 0.4 PM2.5 (K)= ### PM (K) = 0.5
3 - MDEQ MAERS Emission Factor Set
4 - 10% of emission factor for SCC 30500608 (1.4 lb/ton) to take into account indoor storage
5 - PM10 MAERS factor (6.2 lb/VMT) X Ap-42 K factor for PM or PM2.5 (lb/VMT) / AP-42 k factor for PM10
6 - Historic Factor used in MAERS as accepted by MDEQ-AQD
7- 40 CFR 63 Subpart LLL Table 1, Item 9
8 - PM Emission Factor plus condensable factor of
9 - Used controlled emission factor from EPA Webfire for SCC 30503811 (Industrial Processes > Mineral Products > Pulverized Mineral Processing > Coarse and Fine Grinding (Dry Mode))
10 - PM Emission Factor plus condensable factor of 1.7E-02 from EPA Webfire SCC 30500614 for PM condensables controlled by a fabric filter
11 - Set equal to PM10

Calculations
Emissions (lb/hr) = Short term Throughput (unit/hr) X Emission Factor (lb/Unit) X (1- Control Efficiency)
Emissions (tpy) = Annual Throughput (unit/yr) X Emission Factor (lb/Unit) / 2000 lb/ton X (1 - Control efficiency)

Malfunction Abatement Plan
for
Fabric Filter Baghouses and SNCR

St. Marys Cement U.S. LLC
Charlevoix, Michigan

Project No. 180985
November 2018




Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors

Malfunction Abatement Plan
for
Fabric Filter Baghouses and SNCR

Prepared For:
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November 2018
Project No. 180985

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engineers I scientists I architects I constructors

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List of Abbreviations/Acronyms

CEMS	continuous emissions monitoring system
°F	degrees Fahrenheit
FTCH	Fishbeck, Thompson, Carr & Huber, Inc.
HAP	hazardous air pollutant
MAP	Malfunction Abatement Plan
MDEQ	Michigan Department of Environmental Quality
N_2	nitrogen
NO_X	nitrogen oxides
PM	Preventive Maintenance
PTI	Permit to Install
ROP	Renewable Operating Permit
SMC	St Marys Cement U.S. LLC
SNCR	selective non-catalytical reduction
SO_2	sulfur dioxide

1.0 Introduction

This MAP, has been prepared to comply with the requirements of PTI 115-15, PTI 140-15, ROP MI-ROP-B1559-2014, as well as Michigan Air Pollution Control Rules 910 and 911. The purpose of this Plan is to define actions that will be taken by St Marys Cement U.S. LLC (SMC) in the event of a malfunction or equipment breakdown which could result in an exceedance of emission limitations.

Michigan Rule 910 requires the proper installation, maintenance, and operation of air pollution control systems. The Rule reads:

> *An air-cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with these rules and existing law.*

Michigan Rule 911 specifies that, upon request of the MDEQ, a facility must prepare a MAP to prevent, detect, and correct malfunctions or equipment failures resulting in emissions exceeding any applicable emission limitation. Rule 911 states:

> *(1) Upon request of the department, a person responsible for the operation of a source of an air contaminant shall prepare a malfunction abatement plan to prevent, detect, and correct malfunctions or equipment failures resulting in emissions exceeding any applicable emission limitation.*
>
> *(2) A malfunction abatement plan required by subrule (1) of this rule shall be in writing and shall, at a minimum, specify all of the following:*
>
> *(a) A complete preventative maintenance program, including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.*
>
> *(b) An identification of the source and air cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.*
>
> *(c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.*
>
> *(3) A malfunction abatement plan required by subrule (1) of this rule shall be submitted to the department and shall be subject to review and approval by the department. If, in the opinion of the commission, the plan does not adequately carry out the objectives as set forth in subrules (1) and (2) of this rule, then the department may disapprove the plan, state its reasons for disapproval, and order the preparation of an amended plan within the time period specified in the order. If, within the time period specified in the order, an amended plan is submitted which, in the opinion of the department, fails to meet the objective, then the department, on its own initiative, may amend the plan to cause it to meet the objective.*
>
> *(4) Within 180 days after the department approves a malfunction abatement plan, a person responsible for the preparation of a malfunction abatement plan shall implement the malfunction abatement plan required by subrule (1) of this rule.*

2.0 Defining Malfunctions

Rule 113(a) defines a **malfunction** as:

> *Malfunction means any sudden, infrequent and not reasonably preventable failure of a source, process, process equipment, or air pollution control equipment to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.*

A true malfunction must have a reasonable potential to cause:

- An operating parameter to stray from an acceptable range or value that has been established to indicate compliance with an emission limit
  or
- An exceedance in emissions or operating parameter

Most malfunctions of the control equipment will not result in emissions exceedances. However, the systems must be returned to service as soon as possible to maintain maximum emission control. If a malfunction or failure occurs that cannot be corrected by an operator, then a Work Order will be issued to repair the system.

Following is a list of malfunction events covered by this Plan.

- Failure of emission control system components (e.g., monitoring and data acquisition equipment)
- Bag failure (e.g., due to rips/tears, bag blinding due to moisture in gas, timer failure, magnahelic failure, manometer failure)
- Power failure
- Plugging of conveyors
- Sudden and unavoidable failure of control or process equipment, not due to poor operation or maintenance procedures

3.0 Source Description

SMC is a Portland Cement manufacturing facility that consists of quarry operations, crushing systems, raw feed receiving and storage areas, raw mill systems, fuel receiving and storage areas, a calciner, a kiln system, clinker cooler, clinker storage systems, finish mill systems, and a cement storage and shipping facility. The manufacture of Portland cement primarily involves crushing, grinding, and blending of limestone and other raw materials into a chemically proportioned mixture which is then heated by an inline calciner followed by a rotary kiln at extremely high temperatures (2,800°F) to produce pellets that are approximately 0.5 to 2 inches in diameter. The pellets, known as clinker, are cooled and ground in ball mills together with 5% to 10% gypsum to produce the final product, Portland cement. The plant utilizes more than 45 air-cleaning devices to limit the emissions of dust from process equipment and operations.

Table 1 Identifies the Emission Units that are subject to the requirements of this MAP and the applicable emission limits.

In addition, SMC is subject to 40 CFR Part 63 Subpart LLL National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry.

4.0 Emission Control Devices

SMC utilizes SNCR systems and baghouses to control NO_X and particulate emissions, which are generated by the Portland cement manufacturing processes.

4.1 Fabric Filters and Dust Collectors

The fabric filters currently in operation at SMC are described in Table 2. The fabric filters remove dust from the exhaust gases by a mechanical filtering mechanism. As dust builds up on the collecting fabric, the filtering efficiency improves, to the point where the dust builds up too high and the fan has trouble drawing air through the filter, which increases the pressure drop across the fabric filter. A majority of the accumulated dust is removed from the fabric at regular intervals by using a shaking, reverse air, or jet pulse mechanism. The dust that is shaken or blown off the bags drops into a hopper, from which it is periodically removed and, when practical, returned to the process.

The critical criteria for the operation of the fabric filters in general depends on the source they are controlling. They may include 1) high differential pressure, 2) high fabric filter inlet temperature, 3) low fabric filter outlet temperature, 4) opacity, 5) low compartment pressure, and 6) broken bag detectors. For the SMC collectors that operate at or near ambient temperature conditions, the only three critical factors are high differential pressure, low compartment pressure, and opacity. High differential pressure can indicate plugging of the fabric; low compartment pressure and alarming broken bag detectors can indicate a leak in a bag; and high opacity will generally indicate leak(s) in one or more bags. For the baghouses that were installed to control dust emissions from the main kiln exhaust and the bypass exhaust; the inlet and outlet temperature are also important. The fabric is designed to withstand a certain maximum temperature; if the temperature at the inlet is higher than the bags operating temperature, then the fabric can be destroyed. If the outlet temperature is too low, then condensation and subsequent plugging of the fabric could occur.

4.2 Selective Non-Catalytic Reduction System

NO_X emissions from the kiln are controlled by an SNCR system. SNCR is based on the chemical reduction of NO_X to N_2 and water. Ammonia is used as the reducing agent and is injected into the inline kiln at the point in the system with the proper temperature profile. The ideal temperature for NO_X conversion using SNCR is approximately 1800°F. The amount of ammonia injected is based on the NO_X concentrations, which are determined by the CEMS.

5.0 Responsible Personnel

The Responsible Personnel for this MAP is the Environmental Manager. Maintenance Department technicians and Shift Supervisors perform preventive maintenance tasks. Appendix 1 includes the current organizational chart for SMC. Appendix 1 will be updated as needed; a copy of the most recent updated organizational chart will be maintained at the plant. Changes to applicable personnel will be submitted to the MDEQ upon request.

6.0 PMP, Operational Variables, and Corrective Procedures

Preventative maintenance will include equipment inspections, scheduled replacement of parts, and maintaining an inventory of critical spare parts. The facility will track and maintain records of each preventative maintenance action completed. As part of the normal operations at SMC, equipment is monitored to ensure proper functioning of the process and control equipment. If plant personnel notice an equipment malfunction or variation in the normal operating variables, they are instructed to inform the Maintenance Manager or Area Supervisor. Fluctuation in the normal operating variables can signify equipment, system(s), or control(s) issues, which may lead to an environmental excursion. Table 3 lists the general preventative maintenance schedule for the fabric filters.

6.1 Equipment Inspections and Operational Variables

The facility is required to monitor the opacity and differential pressure of the fabric filter baghouses and the ammonia flow of the SNCR to ensure proper operation of the control equipment. Maintenance of these systems is handled through the Electronic Maintenance Management Route Order system or by a contractor, if necessary. The plant's electronic maintenance planning and record keeping system tracks and maintains records of each PM action and/or repair completed and will track maintenance and repairs performed. Table 4 summarizes the operating variables and frequency for common inspections of the fabric filters.

The frequency and scope of PM inspections depend on the manufacturer recommendations and operator experience. When conducting PM activities, technicians use checklists from the plant's electronic maintenance planning and record keeping system that lists PM tasks, steps, and instructions. The technician finishes the PM checklist and returns the form to Maintenance, who verifies that the tasks on the checklist have been finalized and logs the completed checklist into the plant's electronic maintenance planning and record keeping system. Electronic verification of the completed checklist is maintained for a minimum of five years following completion of the PM items or inspections.

6.2 Fabric Filters and Dust Collectors

The SMC Shift Supervisors make daily opacity observations of the equipment that is operational (not a formal reading); upon these observations, they create maintenance work notifications as needed. A change in the opacity may indicate broken bags. It is recommended to observe opacity during the cleaning cycle when possible. When a compartment is being cleaned, it does not participate in the particulate removal. If opacity is noticeably lower during part of the cleaning cycle, the compartment being cleaned likely has broken bags.

In addition to the routine inspections, damage to the filter cloth must be located at the earliest possible time and the defective bag replaced. There are two basic inspection techniques:

- First, visual inspection of all bags. The first indication of a bag failure is often an accumulation of dust in the bottom of the failed bag. This is particularly true if the bag failure occurs near the bottom; however, those failures near the top of the bags are unlikely to provide any tell-tale dust accumulation; in this case, it will be necessary to inspect the full length and circumference of each bag looking for the failures. Dust patterns can be of assistance in at least locating the general area of the failed bag.
- A second technique is the use of a tracer power and ultraviolet light (Visolite®). In this instance, a black-light sensitive powder is fed into the compartment while the system is on line. The compartment is then brought off line and is scanned with an ultraviolet light. The light-sensitive material will glow and immediately identify the location of leaks. It will probably be necessary to search the full area of each bag.

A record of all inspections and maintenance work will be maintained via the routine management system and can be located with the maintenance department.

6.3 SNCR System

NO_X emissions are measured by a CEMS system, which plant operators can monitor for a change in emissions. A change in the NO_X emissions may indicate plugging of the spray nozzles. SMC will maintain the preventative maintenance and inspections of the SNCR system through the electronic Maintenance Management System Route Order System. The PM of the system is designed to minimize downtime, ensure proper operation of the system, and avoid emissions exceedances.

6.4 Corrective Action

If a malfunction occurs which causes, or may cause, excess emissions during plant operations, the equipment causing the potential excess emission rate will be evaluated – as soon as practicable in accordance with safe operating procedures – to determine the proper procedure to correct the issue or determine that the malfunction will not cause excess emissions.

If a malfunction occurs, the Plant Manager (or designee) and if necessary with the assistance of the Environmental Manager, will determine whether affected equipment can continue to operate consistent with the requirements of the ROP. If not, appropriate plant personnel will follow the procedure outlined below:

- Define and correct the issue, which may include investigating the following conditions:
  - Bag failure (e.g., due to rips/tears, bag blinding due to moisture in gas, timer failure, magnahelic failure, and manometer failure)
  - Power failure
  - Plugging of conveyers
  - Failure of emission control system components (e.g. dust collectors and associated water sprays)
- Determine if equipment can continue to operate within compliance of the limitations specified in the facility's PTI and/or ROP. If not, action shall be taken to correct the issue in accordance with safe operating procedures.
- Notify the appropriate staff of any issues that occur and/or if there are any questions regarding compliance or action(s) which should be taken to correct the issue.
- If the issue is one that calls for immediate corrective action, contact the Plant Manager and/or the Environmental Manager.

Excess emissions can be prevented by following the proper procedures for operating all equipment.

Records of any malfunctions are prepared immediately to ensure all required notifications and reports are completed; Appendix 2 contains an example *Abnormal Conditions/Malfunction Follow-Up Report Form*. The Environmental Department will review each incident to determine if emissions exceeded permit limits for more than two hours for criteria pollutants or more than one hour for TACs (if applicable). If so, a malfunction will be reported to the MDEQ Air Quality Division in accordance with Rule 912.

All corrective actions will be documented in the electronic Maintenance Management System.

6.5 Preventative Maintenance Records

SMC uses Route Orders issued via an electronic Maintenance Management System, for scheduling and recording routine maintenance tasks. Upon completion of the Route Order, the paperwork is returned to the maintenance clerk and the work order is closed out as part of the maintenance process. An example of a *Route Order* is attached as Appendix 3.

6.6 Common Control System Malfunctions

Table 5 summarizes common symptoms associated with fabric filter baghouse control system malfunctions, their potential causes, and typical solutions.

Table 6 summarizes common symptoms associated with SNCR systems, their potential causes, and typical solutions.

7.0 Reporting Malfunctions and Abnormal Conditions

Michigan Rules 912(2)-(5) require facilities to report of certain abnormal conditions, start-up, shutdown, or malfunctions associated with process and/or emission control systems subject to air quality requirements.

Michigan Rule 912(2) addresses reporting requirements for sources releasing emissions of HAPs and/or TACs in excess of applicable limitations for one hour or more. The requirement reads:

> *The owner or operator of a source, process, or process equipment shall provide notice of an abnormal condition, start-up, shutdown, or a malfunction that results in emissions of a hazardous air pollutant which continue for more than 1 hour in excess of any applicable standard or limitation established by the clean air act or the emissions of a toxic air contaminant which continue for more than 1 hour in excess of an emission standard established by a rule promulgated under the air pollution act or an emission limitation specified in a permit issued or order entered under the air pollution act.*

Michigan Rule 912(3) addresses reporting requirements for sources releasing emissions of any air contaminant in excess of allowable emission rates for two hours or more. The rule reads:

> *The owner or operator of a source, process, or process equipment shall provide notice and a written report of an abnormal condition, start-up, shutdown, or a malfunction that results in emissions of any air contaminant continuing for more than 2 hours in excess of a standard or limitation established by any applicable requirement.*

Rule 912(4) establishes the reporting timelines. The rule reads:

> *The notices required by this rule shall be provided to the department as soon as reasonably possible, but not later than 2 business days after the start-up or shutdown or after discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication.*

The content requirements for reports submitted under Rule 912 are specified in Rule 912(5). The Rule reads:

> *The written reports required under this rule shall be submitted within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the following information:*
> *(a) The time and date, the probable causes or reasons for, and the duration of the abnormal conditions, start-up, shutdown, or malfunction.*
> *(b) An identification of the source, process, or process equipment that experienced abnormal conditions, was started up or shut down, or which malfunctioned and all other affected process or process equipment that have emissions in excess of an applicable requirement, including a description of the type and, where known or where it is reasonably possible to estimate, the quantity or magnitude of emissions in excess of applicable requirements.*
> *(c) Information describing the measures taken and air pollution control practices followed to minimize emissions.*

(d) For abnormal conditions and malfunctions, the report shall also include a summary of the actions taken to correct and to prevent a reoccurrence of the abnormal conditions or malfunction and the time taken to correct the malfunction.

SMC will report abnormal conditions or malfunctions associated with process and/or emission control systems in accordance with the requirements of Rule 912. An example form is included as Appendix 2.

8.0 Replacement Parts Inventory

Lists of spare parts for the various fabric filters and SNCR are stored in the maintenance system software and can be retrieved by the Maintenance Clerk or from various local vendors during normal business hours. Additional spray nozzles for the SNCR are kept onsite.

Tables

Table 1 – Emission Units and Emission Limits
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, Michigan

Emission Unit/Flexible Group	Controls	Pollutant	Emission Limit	Monitoring
EUSOLIDFUELSYSTEM	Fabric filter baghouse	Opacity PM PM10 PM2.5	10% 0.010 gr/dscf 3.93 pph 1.86 pph	BLDS
EUINLINEKILN	conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses	Opacity PM PM10 PM2.5 NOX SO2 Hg	10% 0.25 lb/1000 lb exhaust gas 57.5 pph 57.5 pph 700 pph 2.8 lb/ton clinker (30-day) 2.4 lb/ton clinker (annual) 1,175 pph 106 lb/yr	CPMS, COMs, NOX CEMS, SO2 CEMS, Hg CEMS
EUCLINKERCOOL	Fabric filter baghouse	Opacity PM PM10 PM2.5	10% 0.02 lb/ton clinker 5.0 pph 5.0 pph	CPMS, VE
FGFINISHMILLS (1-3)	Fabric filter baghouses	Opacity	10%	VE
EUFINISHMILL4	Fabric filter baghouse	Opacity PM PM10 PM2.5	10% 0.25 lb/1000 lb exhaust gas 6.24 pph 6.24 pph	VE
FGNONKILNFACILITY	Fabric filter baghouses	Opacity PM PM10/PM2.5	10% 0.15 lb/1000 lb exhaust gas Baghouse dependant	VE

Table 2 – Fabric Filters

Malfunction Abatement Plan

St. Marys Cement, Charlevoix, Michigan

Site Plan ID	Emission Point
1	Secondary Crusher (Screen House)
2	North Steel Raw Mat Tank BV
3	Cartridge Air slide Post RM
4	Raw Meal Elev DC
5	Cartridge Air slide Pre Homo Elev
6	Homo Silo DC (Top)
7	Blend Silo DC (bottom)
8	Lower Raw Feed Bucket Elev DC
9	Upper Raw Feed Bucket Elev DC
10	Cartridge Air Slide Feed to New Side
11	FF Coal Mill Bin Vent
12	IDF Coal Mill Bin Vent
13	Clinker Cooler DC
14	Clinker Apron Conv DC
15	Clinker Transport DC
16	Clinker Location Selector DC
17	Clinker Dome #1 DC
18	Clinker Dome #2 DC
19	Old M3 DC (north)
20	New M3 DC (south)
21	Main Stack
22	Bypass Stack
23	CKD truck loadout (pug system)
24	No. 1 Finish Mill
25	No. 2 Finish Mill
26	No. 3 Finish Mill
27	No. 4 Finish Mill
28	No. 4 Finish Mill Elev DC
29	Clinker Silos (M-855B) - E
30	Clinker Silos (M-855C) - W
31	Clinker Silos (M-855D) - N
32	#1 Finish Mill Clinker Feeder #1 & #2 (M161B & M163B)
33	#2 Finish Mill Clinker Feeder #1 (M194B)
34	#2 Finish Mill Clinker Feeder #2 (M196B)
35	#3 Finish Mill Clinker Feeder #1 (M063B)
36	#3 Finish Mill Clinker Feeder #2 (M067B)
37	Cement Silo No. 1
38	Cement Silo No. 2
39	Cement Silo No. 3
40	Bucket Elevator New Silos (M-1105)
41	Cement Silo 4 Pack DC

Site Plan ID	Emission Point
42	Cement Dome (old)
43	Cement Dome (New)
44	Ship Loading (Internal Vent under 12 pack)
45	Truck loading (Internal Vent under 12 pack)

Table 3 – Fabric Filter Preventative Maintenance Schedule
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, Michigan

Item	Activity	Equipment Status	Frequency
Discharge Vent	10-minute opacity readings using Method 22	On line	Monthly, or alternate schedule allowed under PC MACT
	30-minute opactiy readings using Method 9	On line	Within 1 hour of Method 22 reading showing visible emissions.
Hopper Heaters	1. Check for proper operation.	On or off line	Quarterly
	2. Check with ammeter.	On or off line	Quarterly
	3. Calibrate thermostat.	Off line	Annually
Fabric Filter Outlet Bypass Damper	1. Inspect bearings and stuffing boxes	Off line	Annually
	2. Inspect damper blade(s) for abrasion	Off line	Annually
	3. Check operation of damper and actuator	Off line	Annually
	4. Check for leakage	Off line	Annually
	5. Tighten bolts	Off line	Annually
Inlet Butterfly Isolation Dampers	1. Inspect damper bearings	Off line	Annually
	2. Inspect blades and seals for abrasion	Off line	Annually
	3. Check operation of damper and actuator	Off line	Annually
	4. Tighten bolts	Off line	Annually
Hopper Vibrators (if installed)	1. Inspect Integrity	Off line	Annually
	2. Ensure proper operation	On or off line	Annually
Instrumentation	1. Check hopper level switches for proper operation	Off line	Annually
	2. Adjust cleaning cycle (if necessary)	On line	As required
	3. Calibrate all instruments	Off line	As required
Spare Parts	1. Inventory spares and check against recommendations	Off line/Cycle count	Annually
Expansion Joints	1. Check for holes	On line	Annually
	2. Tighten bolts	Off line	Annually
	3. Internal inspection for wear	Off line	Annually
Filter Medium	1. Inspect bags	Off line	Annually
	2. Inspect manifolds for dust buildup	Off line	Annually
	3. Replace defective bags	Off line	As needed
	4. Check bag suspension	Off line	Annually
	5. Isolate each module and check opacity	On line	As needed
Casing, Ducts and Hoppers	1. Inspect for cracks, leaks, cracked welds, or presence of foreign material	Off line	Annually
	2. Inspect support structure	Off line	Annually
	3. Check for defective gaskets	Off line	Annually
	4. Inspect elbows and turning vanes for abrasion	Off line	Annually
	5. Mechanically remove all deposits from hoppers	Off line	Annually
Insulation	1. Inspect for presence of moisture, loose lagging, loose connections	On or off line	As Needed
Doors and Gaskets	1. Check for blown or loose gaskets	On line	As needed
	2. Inspect for leaks (Openings can be detected by listening for hissing sounds, which would indicate that air is being drawn into the unit.)	On line	As needed

Table 4 – Operating Variables
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, MI

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
Secondary Crusher (Screen House)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
New Flyash Tanks	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Cartridge Air Slide Post RM	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Raw Meal Elevator DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cartridge Air Slide Pre Homo Elev	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Homo Silo DC (top)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Blending Silo-DC (Bottom)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Lower Raw Meal Bucket Elev DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Upper Raw Meal Bucket Elev DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
Cartridge Air Slide Meal to new side	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Flash Furnace Bin Vent	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Kiln End Coal Bin Vent	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Clinker Cooler DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Apron Conv. DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Transport DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	4 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Location Selector DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	5 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Dome #1 (West)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Dome #2 (East)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Reclaim M-3 (North)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
Clinker Reclaim M-3 (South)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Main	FF	Pressure Drop	Magnehelic gage or manometer	Continuous	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Continuous	0-20%		
Main - Raw Mill Operating		Temp Inlet	Thermocouple	Continuous	> 210 ° F	No emissions impact.	Production Supervisor
Main - Raw Mill Not Operating		Temp Inlet	Thermocouple	Continuous	< 400 ° F (actual temperature be established every 30 months per the PCMACT)	Reduce temperature to protect equipment by altering fans, water sprays and fuel and feed rate alternations.	
Bypass	FF	Pressure Drop	Magnehelic gage or manometer	Continuous	2 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system.	Production Supervisor
		Opacity	Visible Emissions Check	Continuous	0-20%		
Bypass - Raw Mill Operating		Temp Inlet	Thermocouple	Continuous	> 210 ° F	No emissions impact.	Production Supervisor
Bypass - Raw Mill Not Operating		Temp Inlet	Thermocouple	Continuous	< 400 ° F (actual temperature be established every 30 months per the PCMACT)	Reduce temperature to protect equipment by altering fans, water sprays and fuel and feed rate alternations.	
CKD Truck Loadout (Pug System)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
No. 1 Finish Mill	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
No. 2 Finish Mill	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
No. 3 Finish Mill	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
No. 4 Finish Mill	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	4 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
No. 4 Finish Mill Elev DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	5 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Silos (M-855B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Silos (M-855C)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Clinker Silos (M-855D)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
#1 Finish Mill Clinker Feeder #1 & #2 (M161B & M163B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
#2 Finish Mill Clinker Feeder #1 (M194B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
#2 Finish Mill Clinker Feeder #2 (M196B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
#3 Finish Mill Clinker Feeder #1 (M063B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
#3 Finish Mill Clinker Feeder #2 (M067B)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Silo No. 1	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
Cement Silo No. 2	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Silo No. 3	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Bucket Elevator New Silos (M-1105)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Silo 4 Pack DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Dome Old	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Cement Dome New	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Ship Loading	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Truck loading	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Table 4 – Operating Variables
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, Michigan

Process	Device Description	Operating Variable	Monitoring Method	Frequency	Normal Operating Range	Corrective Procedure or Operational Change in the Event of a Malfunction	Responsible Supervisor
Bucket Elevator New Silos (M-1105)	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Silo 4 Pack DC	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Cement Dome Old	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Cement Dome New	FF-BV	Opacity	Visible Emissions Check	Daily	0-5%	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
Ship Loading	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		
Truck loading	FF	Pressure Drop	Magnehelic gage or manometer	As Needed	3 to 7 inches	Prepare work order for repair of dust collector. Track work order in computerized maintenance system. Examples of corrective actions shown in Table 5.	Production Supervisor
		Opacity	Visible Emissions Check	Daily	0-5%		

Table 5 – Fabric Filter Malfunction Abatement Summary
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, MI

Condition	Possible Cause	Means of Detection	Remedial Action
High differential pressure	Unusual rate of filter cake buildup due to high grain loading. Blockage of flow into compartment due to high dust in hoppers. Blockage of ductwork due to dust buildup. Blinding of bags or operation at temperature close to dewpoint. Loss of cleaning function due to cleaning sequence failure. Failure of compartment outlet dampers in fully or partially closed position. Plugging of differential pressure sensor lines.	Fabric filter differential pressure indication on control panel. Fabric filter differential pressure alarm. Automatic bypass.	Manually initiate the cleaning mode. Purge the differential pressure lines with compressed air. If the damper position indicators on the Control Panel indicate closed inlet or outlet dampers on compartments which should be operating, attempt to open them manually. Check the level of dust in the hopper. Remove dust if required. Inspect bags for blinding.
High Fabric Filter Inlet Temperature (Kiln FF only)	High kiln outlet temperature due to unusual combustion or other operating conditions.	Fabric filter inlet temperature thermocouple, as indicated on Control Panel.	The fabric filter will automatically be put into bypass mode by the control system, if temperature exceeds 400 ºF an emergency air damper will open.
Low Fabric Filter Outlet Temperature	Cracks in ductwork or casing, causing substantial inleakage of outside air. Failure of the fabric filter outlet thermocouple. Failure of inlet, outlet, or reverse air dampers to seat properly when a compartment is isolated for maintenance, allowing inleakage of outside air. Access doors left open or not adequately closed. Rupture of expansion joints. Failure of insulation. Substantial inleakage through failed door gaskets.	Baghouse outlet temperature thermocouple, as indicated on Control Panel.	***To avoid potential condensation, fabric filter should be put into bypass mode?*** Repair or replace thermocouples as required. Repair dampers for compartment currently off-line to achieve less leakage. Replace door gaskets. Repair or replace expansion joints. Check for hot spots around exterior of casing, hoppers, ducts, and reverse air system. Repair or replace insulation. Check for inleakage. Repair cracks.
High Opacity	Bag failures. Over cleaning the bags. Failure of bypass damper to seat properly. Leakage across bypass damper.	Visible plume from the stack. High outlet opacity alarm.	Check compartment differential pressures. An abnormally low differential pressure may indicate an inadequate filter cake or broken bag. Identify and replace broken bags. If broken bags exist in only one or two compartments, the compartment(s) can be located by monitoring the stack during a cleaning cycle. At the time that a compartment with failed bags is brought off-line, the opacity will be reduced. When it returns on-line, the opacity will increase. Check for other potential causes of leakage if there are no apparent bag failures. Welds in the wall separating the inlet and outlet manifolds, around the thimbles, or in the tube sheets can be a source of leaks. Adjust bypass damper linkage or damper actuator to seat damper in closed position.
Low compartment pressure	Bag failures Air leakage	Manometer, connected to tube sheet pressure taps. Compare each compartment tube sheet differential pressure. If one consistently lower than others, and opacity is poor, compartment with low reading likely has broken bags	Replace broken bags.

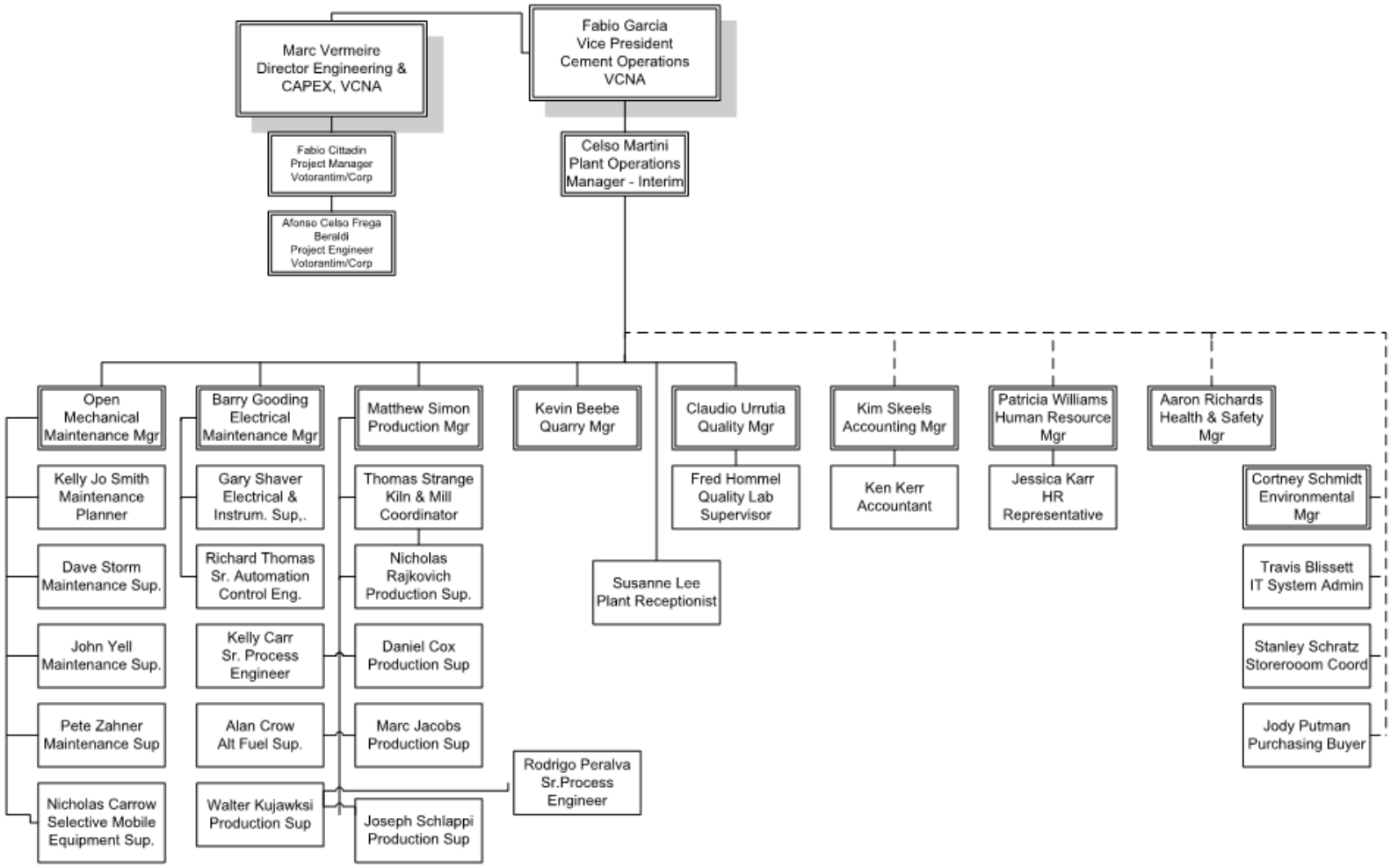
Table 6 – SNCR Malfunction Abatement Summary
Malfunction Abatement Plan
St. Marys Cement, Charlevoix, MI

Condition	Possible Cause	Means of Detection	Remedial Action
Corrosion	Localized corrosion at liquid injected SNCR facilities is a problem. Generally located in immediate vicinity of injector ports Especially problematic for fuels with high chloride and sulfur.	Visual Inspections Increased NOX emissions	Reduce liquid impingement Extended wall injectors Higher air pressure/flow Lower water flow
Detached Plume Formation	Quite common in non-scrubbed flue gas (ie raw mill down) Most often detached from the stack Caused by condensation/combination at lower temperatures. Ammonium chloride, ammonium bisulfate, etc	Visual Inspections Increased Opacity and COMs alarms	Slip reduction – keep less than 10 ppm Nozzle orientation/operation key. Get good stack and operational data.
Air Heater Pluggage	Ammonium Bisulfate is a liquid above 300F Sticky material - difficult to remove. Not a problem with low sulfur fuels	Visual Inspections Increased NOX emissions	Minimize Slip
Nozzle Failure	Plugging High Temperature Corrosion Erosions	Visual Inspections Increased NOX emissions	Preventative Maintenance and replace as needed.

Appendix 1

St Marys Cement - Charlevoix Plant

June 27, 2018



Appendix 2

Appendix 2 – Example Reporting Form

ABNORMAL CONDITIONS/MALFUNCTION FOLLOW-UP REPORT
St Marys Cement U.S. LLC

Date of Incident:_____ Time of Incident:_____ Duration of Incident:_____

Average Opacity (If applicable): _____

Emissions (if applicable): _____ Applicable Limit:_____

Explanation of Incident ***(Include Identification of the Source, Type and Quantity or Magnitude of Excess Emissions and Probable Cause):***

Immediate Actions Taken To Minimize Emissions:

Corrective Action Taken ***To Minimize or Prevent Recurrence:***

AGENCY NOTIFICATION AND REPORTING
The Environmental Manager or his delegate will notify the MDEQ-AQD within 2 days of the occurrence:

MDEQ-AQD Cadillac District Office
Phone: 231.775.3960 Fax: 231.775.1511

Date and Time Contacted:_____ **Person(s) Contacted:**_____

NOTE: ***During off hours, contact the Pollution Emergency Alert System 800.292.4706***

A written follow-up report must be completed including cause and corrective/preventive actions and submitted to the MDEQ-AQD within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first.

Appendix 3

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Order Description: INSP-FM DC ROUTE-2 (CYCLE 1-TUES) **Revision Code:** **Order Type:** RT01

Priority: Normal Within 15 D **M. Plan:** 285512 **Activity Type:** Visual inspection

Inventory N°: 4606 **Downtime Required:** 4606

Equipment:

Functional Location: 4606 CHARLEVOIX CEMENT PLANT

Superior Functional Location:

Location:

CC: 2AK210 **Status:** -

Object Link Code	Linked To	Linked Object Description

Scheduled Start Date: 05/22/2018 00:00:00 **Schedule Finish Date:** 05/22/2018 **24:00:00** **Planner Group:** VC1

Work Center: MM-GEN

Activity
INSP-FM DC ROUTE-2 (CYCLE 1-TUES) DC ROUTE - WEEK 1, TUESDAY

Op.	Work Center	Person Responsible	Planned Duration

Operation	Production Resource	PRT Description	PRT Quantity	Actual Quantity

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Operation: 0010 DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P01 DUST COLLECTOR, 1 FM MAIN

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923591	Z1P01DUST COLLECTOR, 1 FM MAINEM-PRD-R0002-0260	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0010	DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE

DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Operation: 0020 DUST COLLECTOR, 14 FEEDER, PULSE JET **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P11 DUST COLLECTOR, 14 FEEDER

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923714	Z1P11DUST COLLECTOR, 14 FEEDERMM-INS-R0002-0390	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0020	DUST COLLECTOR, 14 FEEDER, PULSE JET

DUST COLLECTOR, 14 FEEDER, PULSE JET
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0030 UST COLLECTOR, 19 FEEDER, PULSE JET **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P21 DUST COLLECTOR, 19 FEEDER

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923715	Z1P21DUST COLLECTOR, 19 FEEDERMM-INS-R0002-0391	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0030	UST COLLECTOR, 19 FEEDER, PULSE JET

UST COLLECTOR, 19 FEEDER, PULSE JET
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0040 DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM2-Z2P01 DUST COLLECTOR, 2 FM MAIN

Superior Functional Location: 4606-06-FIM2 #2 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923593	Z2P01DUST COLLECTOR, 2 FM MAINEM-PRD-R0003-0262	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0040	DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE

DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE

110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0050 DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM3-Z3P01 DUST COLLECTOR, 3 FM MAIN M910

Superior Functional Location: 4606-06-FIM3 #3 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923595	Z3P01DUST COLLECTOR, 3 FM MAIN M910EM-PRD-R0004-0264	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0050	DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE

DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:

60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:

Confirmation

Op.	Personnel no.	Start Date	Finish Date	Start Time	Finish Time	Activity Type

Maintenance Plan Revision Required: (___)No (___)Yes, Report on notes

Notes:

Responsible for Execution
Personnel no.:_____
Signature:_____
Date:____/_____/_____

Maintenance Approval
Personnel no.:_____
Signature:_____
Date:_____/_____/_____

Requested by Approval
Personnel no.:_____
Signature:_____
Date:_____/_____/_____

Operation and Maintenance Plan

St. Marys Cement U.S. LLC

Charlevoix, Michigan

Project No. 180985
December 2018




Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors

Operation and Maintenance Plan

As Required by the National Emission Standards for Hazardous Air Pollutants for the
Portland Cement Manufacturing Industry
40 CFR Part 63, Subpart LLL
(PC MACT)

Prepared For:
St Marys Cement U.S. LLC
Charlevoix, Michigan

December 2018
Project No. 180985

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List of Abbreviations/Acronyms

AQD	Air Quality Division of the MDEQ
$CaCO_3$	calcium carbonate
CaO	calcium oxide
$Ca(OH)_2$	calcium hydroxide
$CaSO_3$	calcium sulfite
$CaSO_4$	calcium sulfate
CO_2	carbon dioxide
CO	carbon monoxide
CFR	Code of Federal Regulations
COMS	continuous opacity monitoring system
CEMS	continuous emissions monitoring system
CMPS	continuous parameter monitoring system
CKD	cement kiln dust
DAA	dry absorbent addition
°C	degrees Celsius
°F	degrees Fahrenheit
FG	Flexible Group
FGD	flue gas desulfurization
FTCH	Fishbeck, Thompson, Carr & Huber, Inc.
gpm	gallon(s) per minute
HAP	hazardous air pollutant
KG	Kiln Group
MACT	Maximum Achievable Control Technology
MAP	Malfunction Abatement Plan
MDEQ	Michigan Department of Environmental Quality
MMBtu/hr	million British thermal units per hour
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NO_X	nitrogen oxides
OMP	Operations and Maintenance Plan
PC	Portland cement
PM	particulate matter
PM_{10}	fine particulate matter less than 10 microns
$PM_{2.5}$	fine particulate matter less than 2.5 microns
PTI	Permit to Install
QC/QC	Quality Assurance/Quality Control (Plan)
ROP	Renewable Operating Permit
SMC	St. Marys Cement U.S. LLC
SNCR	selective non-catalytic reduction
SO_2	sulfur dioxide
SOP	Standard Operating Procedure
SSM	Startup, Shutdown, Malfunction (Plan)
TAC	toxic air contaminant
VE	visible emission(s)
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1.0 Introduction

The air quality regulatory requirements applicable to St Marys Cement U.S. LLC (SMC) are consolidated in ROP No. MI-ROP-B1559-YEAR and PTI Nos. 140-15 and 115-15 issued by the MDEQ-AQD and include the NESHAP for the Portland Cement Manufacturing Industry (PC MACT) and other applicable requirements. Emission units subject to the PC MACT must develop an OM Plan, including:

- Preventive Maintenance for each control device
- Corrective Action Procedures for the CPMS associated with control devices on the clinker cooler
- Corrective Actions associated with excess opacity identified when performing Method 9 readings
- Fugitive Dust Control Measures associated with the storage of clinker in outdoor piles

This Plan applies to control devices associated with the emission units included in:

- Raw Material Feed
- In-Line Kiln/Raw Mill System
- Storage Equipment for Raw Material, Clinker, & Finished Product
- Clinker Handling Systems
- Clinker Cooler
- Finish Grind System
- Conveying System Transfer Points (Including Coal Handling)
- Truck and Ship Bulk Load-Out Systems

In accordance with Michigan Air Pollution Control Rules 910 and 911, MAP information has also been included in this document, as the requirements of these Rules overlap with PC MACT OM Plan requirements. Additional operating requirements intended to limit emissions during startups and shutdowns are also included. It should be noted that, as described in 40 CFR 63.1348(d), SMC has a responsibility to minimize emissions during the operation of all emission units and corresponding air pollution control and monitoring equipment. In following the plant's SOPs, SMC will ensure compliance with its air permit.

2.0 Process Description

2.1 Source Ownership and Permitting

Facility Name: St. Marys Cement U.S. LLC

Facility Address: 16000 Bells Bay Road
Charlevoix, Michigan 49720

Permitting: ROP: MI-ROP-B1559-YEAR
PTIs: 140-15 and 115-15
SRN: B1559

2.2 Plant Description

SMC operates a Portland cement manufacturing facility located in Charlevoix, Michigan. This site covers approximately 1,370 acres and has been in operation since 1966. The plant operates on dry process rotary kiln, which typically operates 24 hours per day, 7 days a week. The kiln is rated at 6,000 tons of clinker per day or 1.927 million tons per year. The fuel for the kiln is a combination of coal, petroleum coke, alternative fuels and propane. Raw materials, including various materials from onsite and offsite sources, are ground and mixed to

produce the final product. The majority of raw materials are obtained from SMC onsite quarrying operations; all offsite materials are brought to the site by trucks and ships/barges.

The site includes: the quarry operations, conveying and storage systems for raw materials, systems for grinding and blending the raw materials, a preheater tower, a kiln, a clinker cooler, clinker conveying, storage, and grinding, cement storage systems, and shipping facilities.

Particulate from the kiln process is controlled by baghouses on both the main and bypass exhaust systems. Dust collectors, engineered controls, and/or dust suppression systems have been installed at various locations throughout the facility to control particulate matter from other processes. An SNCR system is used to control NO_X emissions from the in-line kiln.

3.0 Visible Emissions and Opacity Monitoring

Several emission units are subject to VE and opacity monitoring as described in 40 CFR 63.1350(f); an excerpt from this rule is included as Appendix 1. The PC MACT requires opacity monitoring using a combination of USEPA Reference Method 22 and Method 9 for emission units that are not using COMS to demonstrate compliance with the applicable opacity standard. A list of emission units subject to this opacity monitoring, along with the frequency of monitoring required for each is included as Appendix 2. A copy Method 22 is included as Appendix 3, though a non-certified reading simply involves observing the emission source and noting whether VEs are present (yes/no). The monthly VE readings are performed by the Environmental Manager or their designee.

3.1 Monthly Method 22 Visible Emissions Readings

Monthly VE readings, using the USEPA Method 22, of 40 CFR Part 60, Appendix A, are required for affected sources with limitations on opacity under 40 CFR 63.1350. SMC performs the required monthly VE readings to determine if there are VEs present. Example Method 22 forms used by SMC for these monthly visible emission readings are included as Appendix 4.

The affected sources at SMC are:

- Each raw material, clinker, or finished product storage bin
- Each conveying system transfer point
- Each bagging system
- Each bulk loading or unloading system
- Each existing raw material dryer

The monthly VE readings must be 10 minutes in duration. The PC MACT allows for reducing the frequency of observations from an affected source from monthly to semiannually if no VEs are observed for 6 consecutive monthly tests. The frequency of observation can be further reduced from semiannually to annually if no VEs are observed during the semiannual test for the affected source. If VEs are observed during any of the semiannual or annual observations, the SMC must resume monthly observations until no VEs are observed for six consecutive monthly tests.

In addition, for any affected source for which VEs are observed, SMC must initiate corrective action(s) within one hour, as specified in the SMC SOPs.

3.2 Follow-Up Method 9 Visible Emissions Readings

When VEs are observed during any of the required readings, an additional Method 9 reading must be taken within 1-hour of the VE observation, unless the system is taken out of service. A Method 9 Observation Form must be completed by a certified reader; an example of this Form is included as Appendix 5.

3.3 Raw Mill or Finish Mill Visible Emission Readings

Daily VE readings, using Method 22, are required for the raw mill and finish mills. Specifically, this applies to the mill sweep and air separator particulate matter control device of these affected sources. The mill sweep and air separator must be operating at their representative performance conditions. The readings must be six minutes in duration. If the shift supervisor sees VE more than 10% opacity at the discharge of the finish mill dust collector, they will initiate the corrective action of shutting down the source of the discharge and generating a Work Order to have Maintenance inspect and repair the offending dust collector. If the opacity is less than 10%, the finish mill may continue to operate; however, a Work Order will be generated to have Maintenance investigate the cause of the opacity at the next available routine maintenance down day. Under no condition, other than safety, will the mill be allowed to operate if the opacity exceeds 10% opacity. These SOPs meet and exceed the requirements set forth in 40 CFR 63.1350(a)(2).

If VE are detected, then the following will be performed by SMC:

- Within one hour the corrective actions specified in the SMC SOPs will be initiated.
- Within 24 hours after the end of a Method 22 test in which VE were detected, a follow-up Method 22 reading will be performed. If there are VEs detected during this subsequent reading, a follow-up Method 9 reading will be performed.

3.4 In-Line Kiln System Visible Emissions Monitoring

Both the main stack and bypass stack each have a certified COMS. The VE limit for the in-line kiln system is 10%. If there is a reading above this limit, SMC will implement corrective actions in accordance with their SOPs.

4.0 In-Line Kiln Combustion System Inspection

4.1 Combustion System Overview

The in-line kiln combustion system consists of one burner for the rotary kiln and two injection ports for the pre-calciner. The calciner also preheats the raw feed prior to its entering the rotating kiln. The calciner provides longer internal retention time to use lower volatility fuels, such as pet coke, and an increased rate of alternative fuels. The increased residence time will also allow the operation to consume the fuels in a lower oxygenated state, thus minimizing the formation of NO_X. The burners are capable of burning multiple fuels, which consist of propane (used for an initial cold start of the kiln system for preheating), fuel oil, recycled used oil, pet coke, and coal, as well as alternative fuels. Each fuel has a delivery system for transporting the fuel from onsite storage to the kiln and pre-calciner. Propane is stored in pressurized tank(s); fuel oil and recycled used oil are stored in dedicated tanks; pet coke and coal are stored outside in separate piles. The propane and fuel oils have their own piping and delivery systems in which these fuels are delivered directly to the in-line kiln system's burners. The pet coke and coal are transported via loaders to conveying systems, pulverized, and then transported to the solid fuel storage silos. The solid fuels are then swept from the storage silos into piping that feeds to the in-line kiln system burners.

The burner systems include fuel injection into the kiln and pre-calciner, with combustion air added to ensure proper combustion of the fuels.

When work has been performed on the refractory for the typical in-line kiln system, the startup sequence begins with firing propane gas, followed by oil firing, and then, when the system approaches normal operating temperature, solid fuels begin to be fired. If there has been no work done on the in-line kiln system, the typical startup procedure begins with oil firing, and then proceeds directly to solid fuel firing when the system approaches normal operating temperature.

4.2 Burner Descriptions

The rotary kiln is equipped with an indirect firing system for solid fuels. With the indirect firing system, the solid fuels are first pulverized, transferred to a storage silo, from which the pulverized solid fuel is metered into the kiln combustion burner at a controlled rate. This eliminates the extra air that was conventionally blown in and reduces the amount fuel required per ton of clinker production.

The pre-calciner burner system also incorporates an indirect firing system for solid fuels, similar to the rotary kiln. The calciner provides adequate residence time to burn lower volatile fuels. Calcination removes the carbon and most of the oxygen from the limestone (the molecular formula for limestone [or calcium carbonate] is $CaCO_3$) that results in CaO with CO_2 driven off through the in-line kiln system exhaust gas system.

4.3 Burner Inspection Procedures

Table 1 describes the process that SMC uses to inspect the kiln system's combustion system each year. This is required by 40 CFR 63.1347(a)(3).

Table 1 – Annual Inspection of Kiln Combustion System

Item	Inspection Method
Solid Fuel-Firing Systems	Trained technicians will inspect system and replace excessively worn parts as needed.
Fueling Nozzles	Trained technicians check for wear and replace as needed.
Infiltration (pre-heater/ calciner systems)	Inspect ports, flanges, and expansion joints for fresh air infiltration in the pre-heater/calciner tower.

5.0 OM Plan Requirements

SMC emission units subject to the PC MACT are subject to the OM Plan requirements as outlined in 40 CFR 63.1347; an excerpt from this rule is included in Appendix 6. SMC is required to establish procedures to ensure proper operation of the affected emission sources and associated air pollution control equipment as well as corrective actions, including fugitive dust control measures for open clinker piles. Specific procedures are included in plant SOPs, the MAP, and the SSM Plan.

Corrective Actions to be taken when VE is observed are described in Section 3.0 – *Visible Emissions and Opacity Observations*.

Procedures to be used during an inspection of the components of the combustion system of the in-line kiln raw mill are described in Section 4.0 - *In-Line Kiln Combustion System Inspection*.

Operation and maintenance of the continuous emissions monitoring systems are described in the CEMS QA/QC Plan.

The following sections describe proper operation and maintenance of the affected source and air pollution control devices required to meet the emissions operating limits, including periods of startup and shutdown.

6.0 Maintenance of Affected Emission Units and Associated Emission Control Systems

SMC operates emission units and their associated air pollution control devices in the following areas that are regulated under the PC MACT:

- Raw Material Feed
- In-Line Kiln/Raw Mill System
- Storage Equipment for Raw Material, Clinker, & Finished Product
- Clinker Handling Systems
- Clinker Gravity Cooler
- Finish Grind System
- Conveying System Transfer Points (Including Coal Handling)
- Truck and Ship Bulk Load-Out Systems

SMC has developed SOPs to ensure proper operation of these systems and compliance with applicable emission limits. These SOPs explain proper emission unit operation and are used for job-specific training. Copies of these procedures are available to plant operators. In addition, copies of these procedures are available in the plant's Environmental Department.

A separate plan has been developed that addresses all startup, shutdown, and malfunction events (the SSM Plan), which is incorporated by reference into this OM Plan.

Proper maintenance of affected equipment is also essential to achieving compliance with the applicable emission limits. All maintenance activities, included maintenance required on air pollution control equipment, is scheduled through Route Orders issued via the facility's electronic Maintenance Management System for scheduling and recording routine maintenance tasks. Upon completion of the Route Order, the paperwork is returned to the Maintenance Clerk and the Work Order is closed out as part of the maintenance process. An example of a Route Order is attached as Appendix 7.

Table 2 describes emission units, controls, and monitoring used by SMC.

Table 2 – Emission Units, Controls, and Monitoring

Emission Unit/Flexible Group	Controls	Pollutant	Emission Limit	Monitoring
EUSOLIDFUELSYSTEM: Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos	Fabric filter baghouse	Opacity PM PM_{10} $PM_{2.5}$	0% 0.010 gr/dscf 3.93 pph 1.86 pph	BLDS
EUINLINEKILN: The in-line raw mill kiln system uses a proportioning system for grinding and mixing sources of iron, silica, calcium, and alumina. These raw materials are added to the raw mill where the material is ground, and heated creating a kiln feed mixture, which is conveyed to EUBLENDSILO for blending and storage. Kiln Feed is transferred from EUBLENDSILO via the kiln feed belt scale, elevator, and fed to upper stages of the pre-heating tower. The kiln feed is calcined in the preheater tower; the source of heat for this reaction is generated in both the calciner and kiln, the kiln is the location where the feed is heated to a point where the calcined feed is melted and then cooled to start the formation of clinker. A tertiary duct transfers hot exhaust gases from the clinker cooler to the calciner portion of the preheater tower. Control equipment associated with in-line kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse, and other smaller baghouses. The calciner and kiln have been designed to use traditional solid and liquid fuels and various alternative fuels including asphalt flakes, plastic and small quantities of cellulose fibers.	Conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses	Opacity PM PM_{10} $PM_{2.5}$ NO_X SO_2 Hg D/F HCl THC (OHAP)	10% 0.25 lb/1,000 lb exhaust gas 0.07 lb/ton Clinker 57.5 pph 57.5 pph 700 pph 2.8 lb/ton clinker (30-day) 2.4 lb/ton clinker (annual) 1,175 pph 106 lb/yr 0.2 ng/dscm (TEQ) corrected to 7 percent oxygen 3 ppm dry @ 7% O2 24 ppm dry @ 7% O2 (12 ppm dry @ 7% O2)	COMs, CPMS NO_X FTIR CEMS, SO_2 FTIR CEMS, Hg Sorbent Trap System, Temperature Monitoring System FTIR CEMs FID CEMS

Table 2 – Emission Units, Controls, and Monitoring

Emission Unit/Flexible Group	Controls	Pollutant	Emission Limit	Monitoring
EUCLINKERCOOL: The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and baghouse.	Fabric filter baghouse	Opacity PM PM_{10} $PM_{2.5}$	10% 0.02 lb/ton clinker 5.0 pph 5.0 pph	VE CPMS
FGFINISHMILLS (1-3): This Flexible Group deals with pulverizing the clinker after it has left the kiln and cooling area. The clinker is ground in the mills, which are horizontal steel tubes filled with steel balls. As the tubes rotate, the steel balls tumble and crush the clinker into a superfine gray powder known as Portland cement. A small amount of gypsum is added during the final grinding to control the set upon use of the cement.	Fabric filter baghouses	Opacity	10%	VE
EUFINISHMILL4: Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.	Fabric filter baghouse	Opacity PM PM_{10} $PM_{2.5}$	10% 0.25 lb/1,000 lb exhaust gas 6.24 pph 6.24 pph	VE
FGNONKILNFACILITY: This flexible group covers handling the materials, gases, fuels, and dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand, clinker cooler gases, coal, pet coke, and the finished cement product.	Fabric filter baghouses	Opacity PM $PM_{10}/PM_{2.5}$	10% 0.15 lb/1,000 lb exhaust gas Baghouse dependent	VE

7.0 Maintenance

SMC has prepared a MAP. The MAP satisfies the maintenance requirements of 40 CFR 63.1347(a) for the affected sources subject to the requirements of the PC MACT at SMC. The MAP is incorporated by reference into this OM Plan.

8.0 Startup Shutdown Plan

SMC has prepared a SSM Plan. The SSM Plan satisfies the maintenance requirements of 40 CFR 63.1347(a)(1) for the affected sources subject to the requirements of the PC MACT at SMC. The SSM Plan is incorporated by reference into this OM Plan.

9.0 Record Keeping/Reporting

9.1 Record Keeping

Monitoring, burner inspections, and VE observation records will be maintained for a period of five years, with the most recent two years to be kept onsite. The remaining three years may be kept offsite.

9.2 Reporting

SMC will report any instances where they have failed to comply with this OM Plan in their semiannual reporting, as required by 40 CFR 63.1354(9)(v).

Furthermore, 40 CFR 63.10(d)(3) requires reporting the results of any opacity or VE observations within 30 days following the observation.

10.0 Outdoor Storage of Clinker

The PC MACT requires that this OM Plan address the outdoor open storage of clinker, in particular:

- Fugitive dust emission control measures for open clinker storage piles
- Location of current and future clinker storage piles

In general, SMC has not, stored clinker in outdoor open clinker storage piles and has no intention of doing so in the future. Clinker is stored indoors within the Clinker Storage Domes. It should be noted that storage of uncovered clinker outdoors for up to three days and then covered is considered *temporary storage* and would not trigger the requirements of this Plan.

In the event that SMC needs to store clinker outside for brief periods due to lack of space in the Clinker Storage Domes because of shipping delays caused by weather conditions, SMC will take the following measures to ensure minimize fugitive emissions:

Location. Clinker will be stored on the ground in an area that provides the best protection from wind; it will be covered within the three days after the pile is created. When reclaiming this pile, the cover may be removed over parts of the pile that are actively being reclaimed.

Transportation. Clinker will generally be loaded into trucks inside the Clinker Storage domes but may be loaded outside when loading in domes is not feasible.

Staging Area. At times the clinker will be staged on the ground near the Clinker Domes to facilitate transfer to silos and to minimize transportation and handling.

Dust Suppression. Dust suppressants around the clinker storage area and on the roads will be used as needed.

During transportation and storage of clinker, SMC takes every reasonable precaution to ensure that fugitive emissions are minimized. Qualified observers are available to oversee the movement of clinker and any activity that causes excess emissions will be stopped immediately. The importance of proper dust control will be stressed to the qualified observers and all plant staff involved in the project.

11.0 Periodic Review and Update of This Plan

The Environmental Manager (or a designated representative) will review this document once every five years for adequacy and to ensure it remains current. Documentation of any Review or Update will be retained in Environmental Department files for 5years in accordance with the ROP. The Environmental Manager (or a designated representative) will update this Plan if deficiencies are identified. A copy of this plan will be submitted with each ROP Renewal Application.

12.0 Combined OM MAP Revision History

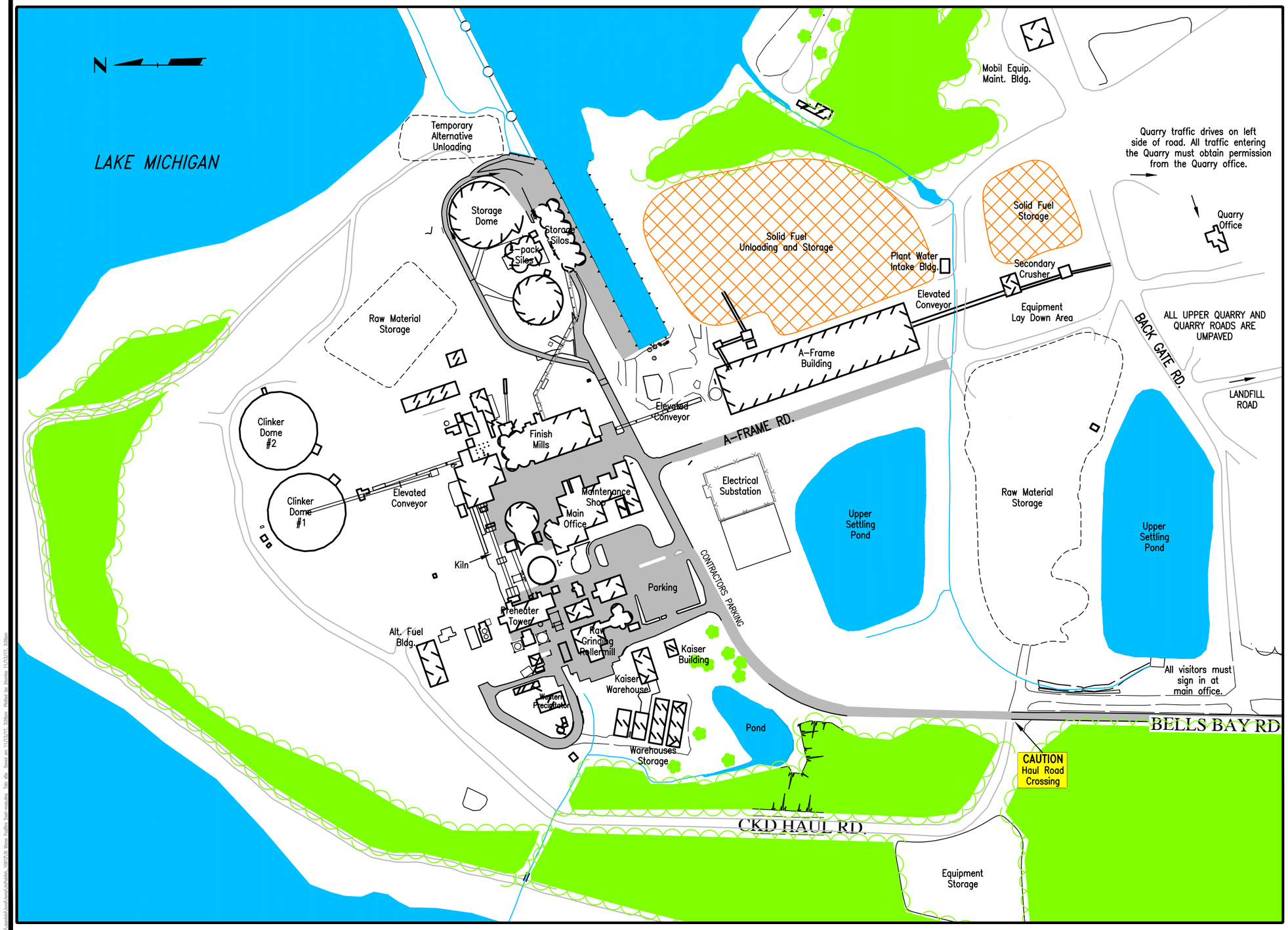
	Revision	Date	Purpose
0.	Original Document	2009	Required by ROP
1.	Complete Revision/New Formatting	2018	Plant Upgrades

Figures

ST. MARYS CEMENT

ST MARYS

CHARLEVOIX PLANT FUGITIVE DUST PLAN SITE MAP



GENERAL LEGEND

- STRUCTURES
- WATER
- TREES / WOODED
- PAVED SURFACE
- UNPAVED SURFACE
- FUEL STORAGE

REVISED: 11/13/2017

Appendix 1

APPENDIX 1
Visible Emissions and Opacity Requirements Included in the PC MACT

***63.1350(f) Opacity monitoring requirements**. If you are subject to a limitation on opacity under §63.1345, you must conduct required opacity monitoring in accordance with the provisions of paragraphs (f)(1)(i) through (vii) of this section and in accordance with your monitoring plan developed under §63.1350(p). You must also develop an opacity monitoring plan in accordance with paragraphs (p)(1) through (4) and paragraph (o)(5), if applicable, of this section.*

(1)

- *(i) You must conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22 of appendix A-7 to part 60 of this chapter. The performance test must be conducted while the affected source is in operation.*
- *(ii) If no visible emissions are observed in six consecutive monthly tests for any affected source, the owner or operator may decrease the frequency of performance testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, you must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.*
- *(iii) If no visible emissions are observed during the semi-annual test for any affected source, you may decrease the frequency of performance testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual performance test, the owner or operator must resume performance testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.*
- *(iv) If visible emissions are observed during any Method 22 performance test, of appendix A-7 to part 60 of this chapter, you must conduct 30 minutes of opacity observations, recorded at 15-second intervals, in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The Method 9 performance test, of appendix A-4 to part 60 of this chapter, must begin within 1 hour of any observation of visible emissions.*
- *(v) Any totally enclosed conveying system transfer point, regardless of the location of the transfer point is not required to conduct Method 22 visible emissions monitoring under this paragraph. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.*
- *(vi) If any partially enclosed or unenclosed conveying system transfer point is located in a building, you must conduct a Method 22 performance test, of appendix A-7 to part 60 of this chapter, according to the requirements of paragraphs (f)(1)(i) through (iv) of this section for each such conveying system transfer point located within the building, or for the building itself, according to paragraph (f)(1)(vii) of this section.*
- *(vii) If visible emissions from a building are monitored, the requirements of paragraphs (f)(1)(i) through (f)(1)(iv) of this section apply to the monitoring of the building, and you must also test visible emissions from each side, roof, and vent of the building for at least 10 minutes.*

(2)

- *(i) For a raw mill or finish mill, you must monitor opacity by conducting daily visible emissions observations of the mill sweep and air separator PM control devices (PMCD) of these affected sources in accordance with the procedures of Method 22 of appendix A-7 to part 60 of this chapter. The duration of the Method 22 performance test must be 6 minutes.*

(ii) Within 24 hours of the end of the Method 22 performance test in which visible emissions were observed, the owner or operator must conduct a follow up Method 22 performance test of each stack from which visible emissions were observed during the previous Method 22 performance test.

(iii) If visible emissions are observed during the follow-up Method 22 performance test required by paragraph (f)(2)(ii) of this section from any stack from which visible emissions were observed during the previous Method 22 performance test required by paragraph (f)(2)(i) of the section, you must then conduct an opacity test of each stack from which emissions were observed during the follow up Method 22 performance test in accordance with Method 9 of appendix A-4 to part 60 of this chapter. The duration of the Method 9 test must be 30 minutes.

(3) If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (2) of this section, you must initiate, within one-hour, the corrective actions specified in your operation and maintenance plan as required in §63.1347.

(4) The requirements under paragraph (f)(2) of this section to conduct daily Method 22 testing do not apply to any specific raw mill or finish mill equipped with a COMS or BLDS.

(i) If the owner or operator chooses to install a COMS in lieu of conducting the daily visible emissions testing required under paragraph (f)(2) of this section, then the COMS must be installed at the outlet of the PM control device of the raw mill or finish mill and the COMS must be installed, maintained, calibrated, and operated as required by the general provisions in subpart A of this part and according to PS-1 of appendix B to part 60 of this chapter.

(ii) If you choose to install a BLDS in lieu of conducting the daily visible emissions testing required under paragraph (f)(2) of this section, the requirements in paragraphs (m)(1) through (m)(4), (m)(10) and (m)(11) of this section apply.

Appendix 2

APPENDIX 2

List of Emission Units and Monitoring Frequency

Check Is Source Operating? (Y/N)	Month / Year: **Sept/2018** Emission Point Name	Initial upon Completion	Length of Method 22 reading	Max Opacity	Length of Method 9 reading	Within X hours
	Quarry (road / piles)		1 min	5%	6 min	1
	Rock Hammer (Primary)		1 min	15%	6 min	1
	Secondary Crusher		1 min/30min	20%	6 min	1
	North SPL Tank BV		10 min	10%	30 min	1
	Roller Mill Bldg - West Side		10 min	10%	30 min	1
	Roller Mill Bldg - South Side		10 min	10%	30 min	1
	Roller Mill Bldg - East Side		10 min	10%	30 min	1
	Roller Mill Bldg - North Side		10 min	10%	30 min	1
	~ Roller Mill Bldg - Roof		10 min	10%	30 min	1
	RM transfer cartridge DC		10 min	10%	30 min	1
	Raw Meal Elev DC (shorter)		10 min	10%	30 min	1
	RM Elev to Elev transfer Cart. DC		10 min	10%	30 min	1
	Top of Blend Silo DC		10 min	10%	30 min	1
	Bottom of Blend Silo DC		10 min	10%	30 min	1
	2nd Floor Preheater DC		10 min	10%	30 min	1
	9th Floor Preheater DC		10 min	10%	30 min	1
	FF Coal Mill Bin Vent		10 min	10%	30 min	1
	IDF Coal Mill Bin Vent		10 min	10%	30 min	1
	Clinker Cooler DC		10 min	10%	30 min	1
	Clinker Apron Conv DC		10 min	10%	30 min	1
	Clinker Transfer lower DC		10 min	10%	30 min	1
	Clinker Transfer Upper DC		10 min	10%	30 min	1
	Dome #1 DC		10 min	10%	30 min	1
	Dome #2 DC		10 min	10%	30 min	1
	Old M3 DC (north)		10 min	10%	30 min	1
	New M3 DC (south)		10 min	10%	30 min	1
	* ^ Finish Mill Bldg - North Side		10 min	10%	30 min	1
	* % Finish Mill Bldg - West Side		10 min	10%	30 min	1
	* Finish Mill Bldg - South Side		10 min	10%	30 min	1
	* ! Finish Mill Bldg - East Side		10 min	10%	30 min	1
	* ~ Finish Mill Bldg - Roof		10 min	10%	30 min	1
	#1 12 pk Silo DC		10 min	10%	30 min	1
	#2 12 pk Silo DC		10 min	10%	30 min	1
	#3 12 pk Silo DC		10 min	10%	30 min	1
	1120 Elev DC		10 min	10%	30 min	1
	NEW 4 pk Silo DC		10 min	10%	30 min	1
	Old Cement Dome 100K DC		10 min	10%	30 min	1
	New Cement Dome 75K DC		10 min	10%	30 min	1
	12 Pack E & W Door -Shp Loading		10 min	10%	30 min	1
	12 Pack E & W Door -Trk Loading		10 min	10%	30 min	1

* All these DC/transfers are monitored via Finish Mill Bldg observation

% 40 belt to 315 belt transfer
! Clinker Silos 855B (discharge E)
%Clinker Silos 855C (west M40)
^Clinker Silos 855D (discharg N)
^FM #1 Clinker Feed DC
! FM #2 Clinker Feed DC - N
! FM #2 Clinker Feed DC - S
%FM #3 Clinker Feed DC - N
%FM #3 Clinker Feed DC - S

~ You must be in a position when doing the sides and roof to see all the vents.

Appendix 3

Method 22 - Visual Determination of Fugitive Emissions From Material Sources and Smoke Emissions From Flares

Note: This method is not inclusive with respect to observer certification. Some material is incorporated by reference from Method 9.

1.0 Scope and Application

This method is applicable for the determination of the frequency of fugitive emissions from stationary sources, only as specified in an applicable subpart of the regulations. This method also is applicable for the determination of the frequency of visible smoke emissions from flares.

2.0 Summary of Method

2.1 Fugitive emissions produced during material processing, handling, and transfer operations or smoke emissions from flares are visually determined by an observer without the aid of instruments.

2.2 This method is used also to determine visible smoke emissions from flares used for combustion of waste process materials.

2.3 This method determines the amount of time that visible emissions occur during the observation period (*i.e.*, the accumulated emission time). This method does not require that the opacity of emissions be determined. Since this procedure requires only the determination of whether visible emissions occur and does not require the determination of opacity levels, observer certification according to the procedures of Method 9 is not required. However, it is necessary that the observer is knowledgeable with respect to the general procedures for determining the presence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training is to be obtained from written materials found in References 1 and 2 or from the lecture portion of the Method 9 certification course.

3.0 Definitions

3.1 *Emission frequency* means the percentage of time that emissions are visible during the observation period.

3.2 *Emission time* means the accumulated amount of time that emissions are visible during the observation period.

3.3 *Fugitive emissions* means emissions generated by an affected facility which is not collected by a capture system and is released to the atmosphere. This includes emissions that (1) escape capture by process equipment exhaust hoods; (2) are emitted during material transfer; (3) are emitted from buildings housing material processing or handling equipment; or (4) are emitted directly from process equipment.

3.4 *Observation period* means the accumulated time period during which observations are conducted, not to be less than the period specified in the applicable regulation.

3.5 *Smoke emissions* means a pollutant generated by combustion in a flare and occurring immediately downstream of the flame. Smoke occurring within the flame, but not downstream of the flame, is not considered a smoke emission.

4.0 Interferences

4.1 Occasionally, fugitive emissions from sources other than the affected facility (*e.g.*, road dust) may prevent a clear view of the affected facility. This may particularly be a problem during periods of high wind. If the view of the potential emission points is obscured to such a degree that the observer questions the validity of continuing observations, then the observations shall be terminated, and the observer shall clearly note this fact on the data form.

5.0 Safety

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method may not address all of the safety problems associated with its use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

6.0 Equipment

6.1 Stopwatches (two). Accumulative type with unit divisions of at least 0.5 seconds.

6.2 Light Meter. Light meter capable of measuring illuminance in the 50 to 200 lux range, required for indoor observations only.

7.0 Reagents and Supplies[Reserved]

8.0 Sample Collection, Preservation, Storage, and Transfer[Reserved]

9.0 Quality Control[Reserved]

10.0 Calibration and Standardization[Reserved]

11.0 Analytical Procedure

11.1 Selection of Observation Location. Survey the affected facility, or the building or structure housing the process to be observed, and determine the locations of potential emissions. If the affected facility is located inside a building, determine an observation location that is consistent with the requirements of the applicable regulation (*i.e.*, outside observation of emissions escaping the building/structure or inside observation of emissions directly emitted from the affected facility process unit). Then select a position that enables a clear view of the potential emission point(s) of the affected facility or of the building or structure housing the affected facility, as appropriate for the applicable subpart. A position at least 4.6 m (15 feet), but not more than 400 m (0.25 miles), from the emission source is recommended. For outdoor locations, select a position where the sunlight is not shining directly in the observer's eyes.

11.2 Field Records.

11.2.1 Outdoor Location. Record the following information on the field data sheet (Figure 22–1): Company name, industry, process unit, observer's name, observer's affiliation, and date. Record also the estimated wind speed, wind direction, and sky condition. Sketch the process unit being observed, and note the observer location relative to the source and the sun. Indicate the potential and actual emission points on the sketch.

11.2.2 Indoor Location. Record the following information on the field data sheet (Figure 22–2): Company name, industry, process unit, observer's name, observer's affiliation, and date. Record as appropriate the type, location, and intensity of lighting on the data sheet. Sketch the process unit being observed, and note the observer location relative to the source. Indicate the potential and actual fugitive emission points on the sketch.

11.3 Indoor Lighting Requirements. For indoor locations, use a light meter to measure the level of illumination at a location as close to the emission source(s) as is feasible. An illumination of greater than 100 lux (10 foot candles) is considered necessary for proper application of this method.

11.4 Observations.

11.4.1 Procedure. Record the clock time when observations begin. Use one stopwatch to monitor the duration of the observation period. Start this stopwatch when the observation period begins. If the observation period is divided into two or more segments by process shutdowns or observer rest breaks (see Section 11.4.3), stop the stopwatch when a break begins and restart the stopwatch without resetting it when the break ends. Stop the stopwatch at the end of the observation period. The accumulated time indicated by this stopwatch is the duration of observation period. When the observation period is completed, record the clock time. During the observation period, continuously watch the emission source. Upon observing an emission (condensed water vapor is not considered an emission), start the second accumulative stopwatch; stop the watch when the emission stops. Continue this procedure for the entire observation period. The accumulated elapsed time on this stopwatch is the total time emissions were visible during the observation period (*i.e.,* the emission time.)

11.4.2 Observation Period. Choose an observation period of sufficient length to meet the requirements for determining compliance with the emission standard in the applicable subpart of the regulations. When the length of the observation period is specifically stated in the applicable subpart, it may not be necessary to observe the source for this entire period if the emission time required to indicate noncompliance (based on the specified observation period) is observed in a shorter time period. In other words, if the regulation prohibits emissions for more than 6 minutes in any hour, then observations may (optional) be stopped after an emission time of 6 minutes is exceeded. Similarly, when the regulation is expressed as an emission frequency and the regulation prohibits emissions for greater than 10 percent of the time in any hour, then observations may (optional) be terminated after 6 minutes of emission are observed since 6 minutes is 10 percent of an hour. In any case, the observation period shall not be less than 6 minutes in duration. In some cases, the process operation may be intermittent or cyclic. In such cases, it may be convenient for the observation period to coincide with the length of the process cycle.

11.4.3 Observer Rest Breaks. Do not observe emissions continuously for a period of more than 15 to 20 minutes without taking a rest break. For sources requiring observation periods of greater than 20 minutes, the observer shall take a break of not less than 5 minutes and not more than 10 minutes after every 15 to 20 minutes of observation. If continuous observations are desired for extended time periods, two observers can alternate between making observations and taking breaks.

11.5 Recording Observations. Record the accumulated time of the observation period on the data sheet as the observation period duration. Record the accumulated time emissions were observed on the data sheet as the emission time. Record the clock time the observation period began and ended, as well as the clock time any observer breaks began and ended.

12.0 Data Analysis and Calculations

If the applicable subpart requires that the emission rate be expressed as an emission frequency (in percent), determine this value as follows: Divide the accumulated emission time (in seconds) by the duration of the observation period (in seconds) or by any minimum observation period required in the applicable subpart, if the actual observation period is less than the required period, and multiply this quotient by 100.

13.0 Method Performance[Reserved]

14.0 Pollution Prevention[Reserved]

15.0 Waste Management[Reserved]

16.0 References

1. Missan, R., and A. Stein. Guidelines for Evaluation of Visible Emissions Certification, Field Procedures, Legal Aspects, and Background Material. EPA Publication No. EPA–340/1–75–007. April 1975.

2. Wohlschlegel, P., and D.E. Wagoner. Guideline for Development of a Quality Assurance Program: Volume IX—Visual Determination of Opacity Emissions from Stationary Sources. EPA Publication No. EPA–650/4–74–005i. November 1975.

17.0 Tables, Diagrams, Flowcharts, and Validation Data

FUGITIVE OR SMOKE EMISSION INSPECTION
OUTDOOR LOCATION

Company Location Company Rep.	Observer Affiliation Date
Sky Conditions Precipitation	Wind Direction Wind Speed
Industry	Process Unit

Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.

OBSERVATIONS	Clock Time	Observation period duration, min:sec	Accumulated emission time, min:sec
Begin Observation			
End Observation			

Figure 22-1

FUGITIVE OR SMOKE EMISSION INSPECTION
INDOOR LOCATION

Company Location Company Rep.	Observer Affiliation Date
Industry	Process Unit

Light type (fluorescent, incandescent, natural)
Light location (overhead, behind observer, etc.)
Illuminance (lux or footcandles)
Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.

OBSERVATIONS	Clock Time	Observation period duration, min:sec	Accumulated emission time, min:sec
Begin			
End Observation			

Figure 22-2

Appendix 4

APPENDIX 4
Method 22 Forms

St Marys Cement Inc., Charlevoix Plant Method 22 Visual Emission Observations				
Initials:				
Stack Name:				
Date & Time:				
Wind Speed and Direction:				
Sky Condition:				
	0	15	30	45
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Did Stack Pass YES NO				

Make a Sketch, note your location to the source and the sun, make note of any emission points.

St Marys Cement Inc., Charlevoix Plant Method 22 Visual Emission Observations				
Initials:				
Stack Name:				
Date & Time:				
Wind Speed and Direction:				
Sky Condition:				
	0	15	30	45
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Did Stack Pass YES NO				

Make a Sketch, note your location to the source and the sun, make note of any emission points.

Monthly 10-minute visible emissions observations using USEPA Method 22 shall be conducted on each emission point of FGNONKILNFACILITY while operating. If visible emissions are observed, 30 minutes of opacity observations, recorded at 15-second intervals must be conducted in accordance with USEPA Method 9. The USEPA Method 9 test shall begin within one hour of any observation of VE.

APPENDIX 4
Method 22 Forms

St Marys Cement Inc., Charlevoix Plant Method 22 Visual Emission Observations				
Initials:				
Stack Name:				
Date & Time:				
Wind Speed and Direction:				
Sky Condition:				
	0	15	30	45
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Did Stack Pass YES NO				

Make a Sketch, note your location to the source and the sun, make note of any emission points.

St Marys Cement Inc., Charlevoix Plant Method 22 Visual Emission Observations				
Initials:				
Stack Name:				
Date & Time:				
Wind Speed and Direction:				
Sky Condition:				
	0	15	30	45
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Did Stack Pass YES NO				

Make a Sketch, note your location to the source and the sun, make note of any emission points.

Monthly 10-minute visible emissions observations using USEPA Method 22 shall be conducted on each emission point of FGNONKILNFACILITY while operating. If visible emissions are observed, 30 minutes of opacity observations, recorded at 15-second intervals must be conducted in accordance with USEPA Method 9. The USEPA Method 9 test shall begin within one hour of any observation of VE.

Appendix 5

EPA
VISIBLE EMISSION OBSERVATION FORM 1

Form Number							Page	Of
Continued on VEO Form Number								

Method Used (Circle One)
Method 9 203A 203B Other: _____

Company Name		
Facility Name		
Street Address		
City	State	Zip

Process	Unit #	Operating Mode
Control Equipment		Operating Mode

Describe Emission Point	
Height of Emiss. Pt. Start End	Height of Emiss. Pt. Rel. to Observer Start End
Distance to Emiss. Pt. Start End	Direction to Emiss. Pt. (Degrees) Start End

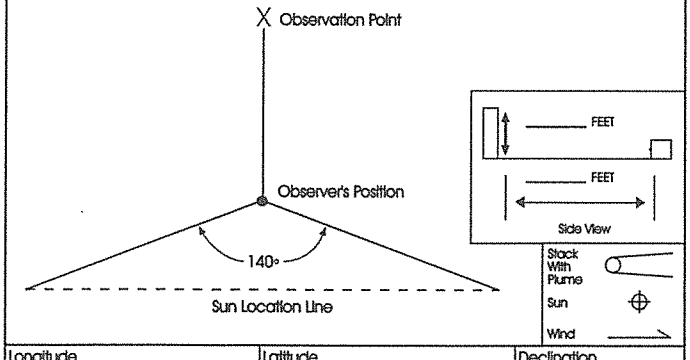
Vertical Angle to Obs. Pt. Start End	Direction to Obs. Pt. (Degrees) Start End
Distance and Direction to Observation Point from Emission Point Start End	

Describe Emissions Start End	
Emission Color Start End	Water Droplet Plume Attached ☐ Detached ☐ None ☐

Describe Plume Background Start End		
Background Color Start End	Sky Conditions Start End	
Wind Speed Start End	Wind Direction Start End	
Ambient Temp. Start End	Wet Bulb Temp.	RH Percent

Source Layout Sketch

Draw North Arrow
☐ TN ☐ MN



Longitude	Latitude	Declination

Additional Information

Observation Date	Time Zone	Start Time	End Time

Min \ Sec	0	15	30	45	Comments
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Observer's Name (Print)	
Observer's Signature	Date
Organization	
Certified By	Date

Appendix 6

APPENDIX 6
§63.1347 Operation and Maintenance Plan Requirements[1]

(a) You must prepare, for each affected source subject to the provisions of this subpart, a written operations and maintenance plan. The plan must be submitted to the Administrator for review and approval as part of the application for a part 70 permit and must include the following information:

(1) Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emissions limits and operating limits, including Your operations and maintenance plan must address periods of startup and shutdown.

(2) Corrective actions to be taken when required by paragraph §63.1350(f)(3);

(3) Procedures to be used during an inspection of the components of the combustion system of each kiln and each in-line kiln raw mill located at the facility at least once per year.

(b) Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard.

[1] 75 FR 55054, Sept. 9, 2010, as amended at 78 FR 10040, Feb. 12, 2013; 80 FR 44781, July 27, 2015

Appendix 7

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Order Description: INSP-FM DC ROUTE-2 (CYCLE 1-TUES) **Revision Code:** **Order Type:** RT01

Priority: Normal Within 15 D **M. Plan:** 285512 **Activity Type:** Visual inspection

Inventory N°: 4606 **Downtime Required:** 4606

Equipment:

Functional Location: 4606 CHARLEVOIX CEMENT PLANT

Superior Functional Location:

Location:

CC: 2AK210 **Status:** -

Object Link Code	Linked To	Linked Object Description

Scheduled Start Date: 05/22/2018 00:00:00 **Schedule Finish Date:** 05/22/2018 **24:00:00** **Planner Group:** VC1

Work Center: MM-GEN

Activity
INSP-FM DC ROUTE-2 (CYCLE 1-TUES) DC ROUTE - WEEK 1, TUESDAY

Op.	Work Center	Person Responsible	Planned Duration

Operation	Production Resource	PRT Description	PRT Quantity	Actual Quantity

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Operation: 0010 DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P01 DUST COLLECTOR, 1 FM MAIN

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923591	Z1P01DUST COLLECTOR, 1 FM MAINEM-PRD-R0002-0260	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0010	DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE

DUST COLLECTOR, 1 FM MAIN, PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

Operation: 0020 DUST COLLECTOR, 14 FEEDER, PULSE JET **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P11 DUST COLLECTOR, 14 FEEDER

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923714	Z1P11DUST COLLECTOR, 14 FEEDERMM-INS-R0002-0390	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0020	DUST COLLECTOR, 14 FEEDER, PULSE JET

DUST COLLECTOR, 14 FEEDER, PULSE JET
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0030 UST COLLECTOR, 19 FEEDER, PULSE JET **ABCInd.:**

Functional Location: 4606-06-FIM1-Z1P21 DUST COLLECTOR, 19 FEEDER

Superior Functional Location: 4606-06-FIM1 #1 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923715	Z1P21DUST COLLECTOR, 19 FEEDERMM-INS-R0002-0391	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0030	UST COLLECTOR, 19 FEEDER, PULSE JET

UST COLLECTOR, 19 FEEDER, PULSE JET
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:145544695

ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0040 DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM2-Z2P01 DUST COLLECTOR, 2 FM MAIN

Superior Functional Location: 4606-06-FIM2 #2 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923593	Z2P01DUST COLLECTOR, 2 FM MAINEM-PRD-R0003-0262	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0040	DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE

DUST COLLECTOR, 2 FM MAIN, PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:
60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE

110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
170-INSPECT FAN MOTOR FOR EXCESSIVE VIBRATION, NOISE OR TEMPERATURE
180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Operation: 0050 DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE **ABCInd.:**

Functional Location: 4606-06-FIM3-Z3P01 DUST COLLECTOR, 3 FM MAIN M910

Superior Functional Location: 4606-06-FIM3 #3 FINISH MILL

Equipment:

Measuring Point	Measuring Point Description	Target Value	Lower Range Limit	Upper Range Limit	Measurement
1923595	Z3P01DUST COLLECTOR, 3 FM MAIN M910EM-PRD-R0004-0264	0	0	0	

Item OK?	Any Action Taken?	Follow-up Notification M4 Required?	Priority
(___)OK (___)Not OK (___)Not Executed	(___)Yes (___) No	(___)Yes (___)No	(_____)

Operation	Operation Description
0050	DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE

DUST COLLECTOR, 3 FM MAIN , PLENUM PULSE
DC ROUTE - WEEK 1, MONDAY
10-SAFETY - WEAR PROPER PPE
20-DISCONNECT DP TUBING FROM PRESSURE GAUGE AND BLOW OUT TUBING TO DC WITH COMPRESSED AIR
30-CHECK AIR PRESSURE, SHOULD BE BETWEEN 60 AND 90 PSIG. IF OUT OF THIS RANGE OPEN A NOTIFICATION TO REPAIR
40-CHECK DIFFERENTIAL PRESSURE: DP IN H20 - IT OPERATES BETWEEN 3-6IN W.C. FOR FABRIC FILTER BAGS AND BETWEEN 2-4 IN W.C. FOR CARTRIDGES. IF DP IS OUT OF THIS RANGE OPEN A NOTIFICATION FOR REPAIR
50-INSPECT COMPRESSED AIR PULSING SYSTEM AS FOLLOWS:

60-A. INSPECT PILOT TUBING, DIAPHRAGM VALVES, AND AIR MANIFOLD FOR LEAKS
70-B. VERIFY THAT SYSTEM CYCLES CORRECTLY AND THAT ALL PULSERS ARE FIRING
80-C. VERIFY THAT AIR IS NOT LEAKING BY DIAPHRAGM VALVES WHEN NOT PULSING
90-D. INSPECT AND DRAIN AIR WATER FILTER
100-INSPECT FAN DUCTWORK FOR CORROSION, HOLES, OR OTHER EXTERNAL DAMAGE
110-INSPECT FAN DISCHARGE FOR VISIBLE EMISSIONS
120-INSPECT FAN, FAN HOUSING, BEARINGS, DRIVE BELTS FOR DAMAGE OR ABNORMALITIES:
130-A. INSPECT FAN BASE BOLTS FOR TIGHTNESS
140-B. INSPECT FAN FOR EXCESSIVE VIBRATION
150-C. IF FAN INBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
160-D. FAN OUTBOARD BEARING TEMP IS ABOVE 180F WRITE A NOTIFICATOIN TO ADD AIR TO BEARING OR TO REPAIR
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180-INSPECT DUST COLLECTOR HOUSING, HOPPER, AND ACCESS DOORS FOR DAMAGE, CRACKS, OR AIR LEAKS
190-INSPECT DUST DISCHARGE SYSTEM, AIRSLIDES, TIPPING VALVES, SCREWS, FEEDERS, AND COMPONENTS
200-INSPECT ALL EQUIPMENT GUARDS TO INSURE THAT THEY ARE IN PLACE AND FREE FROM DAMAGE
210-INSPECT DUST COLLECTION PICK-UP POINTS FOR PROPER FUNCTIONING
220-NOTIFY SUPERVISOR OF CONDITIONS REQUIRING A NOTIFICATION

Votorantim Cimentos

Route Order

Plant: 4606 **Risk:** C3

Order:

Confirmation

Op.	Personnel no.	Start Date	Finish Date	Start Time	Finish Time	Activity Type

Maintenance Plan Revision Required: (___)No (___)Yes, Report on notes

Notes:

Responsible for Execution
Personnel no.:_____
Signature:_____
Date:____/_____/_____

Maintenance Approval
Personnel no.:_____
Signature:_____
Date:_____/_____/_____

Requested by Approval
Personnel no.:_____
Signature:_____
Date:_____/_____/_____

ST. MARYS CEMENT

ST MARYS

CHARLEVOIX PLANT
FUGITIVE DUST PLAN
SITE MAP

LAKE MICHIGAN

Storage Dome
Storage Silos
4-pack Silos
One-way Traffic
Solid Fuel Unloading and Storage
Solid Fuel Storage
Quarry traffic drives on left side of road. All traffic entering the Quarry must obtain permission from the Quarry office.
Quarry Office
Secondary Crusher
Elevated Conveyor
A-Frame Building
Main Substation
ALL QUARRY ROADS ARE GRAVEL COVERED.
G-Cooler
Clinker Dome #2
First Aid [2nd Floor]
Gravel Beds
Finish Mills
Elevated Conveyor
Burner Building
Clinker Dome #1
Coal System
Kiln
Coal Flash Furnace Bldg.
Preheater Tower
Electrical Shop
Main Office
Maintenance Shop
Electrical Substation
Health & Safety Office
Sub-station 7
Raw Grinding Rollermill
Sub-station 4
Western Precipitator
Kaiser Building
Kaiser Warehouse
Alternative Fuel Storage Area
All visitors must sign in at main office.
CAUTION Haul Road Crossing
New Haul Road

GENERAL LEGEND

- STRUCTURES
- WATER
- TREES / WOODED
- PAVED SURFACE
- GRAVEL SURFACE
- FUEL STORAGE

REVISED: 05/11/2011

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: 1559	Section Number (if applicable):

1. Additional Information ID
AI-PartF

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

F2. PTI No 140-15 includes changes to EUCLINKERCOOLER, EUCEMENTHAND&STO, EUCKDHANDSTOR, EURAWMILLS, EUKILN, FGKILNRAWMILLS, FGFINISHMILLS, and FGNONKILNFACILITY.

F3. PTIs 140-15 and 115-15 attached show the new emission units and flex groups to be incorporated into the ROP.

F4. SVFM4 (EUFINISHMILL4), SVCOKEMIL1 (EUSOLIDFUELSYSTEM), SVMAIN and SVBYPASS (EUINLINEKILN) were installed in 2018. These stacks will be added to the RY2018 MAERS report.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

July 24, 2015

PERMIT TO INSTALL
115-15

ISSUED TO
St. Marys Cement, Inc. (US)

LOCATED AT
16000 Bells Bay Road
Charlevoix, Michigan

IN THE COUNTY OF
Charlevoix

STATE REGISTRATION NUMBER
B1559

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **July 2, 2015**	
DATE PERMIT TO INSTALL APPROVED: **July 24, 2015**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Section **Page**

Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO_2e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO_x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO_2	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUBLENDSILO	Raw feed from the raw mill is transferred to the blending silo where it will be stored and stirred to obtain a more uniform mixture of the various ingredients before it is transferred to the kiln system (at the top of the calciner/preheater). Particulate Matter emissions are controlled by two pulse-jet baghouses at the transfer point of raw feed from the raw mill into the silo and the transfer point of blended and uniform raw feed from the silo out to the conveyance equipment which delivers the raw feed to the top of the calciner/preheater.	7/24/2015	FGNONKILNFACILITY, FGALTSAND/SOIL
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

The following conditions apply to: EUBLENDSILO

DESCRIPTION: Raw feed from the raw mill is transferred to the blending silo where it will be stored and stirred to obtain a more uniform mixture of the various ingredients before it is transferred to the kiln system (at the top of the calciner/preheater).

Flexible Groups: FGNONKILNFACILITY, FGALTSAND/SOIL

POLLUTION CONTROL EQUIPMENT: Two pulse-jet baghouses at the transfer point of raw feed from the raw mill into the silo and the transfer point of blended and uniform raw feed from the silo out to the conveyance equipment which delivers the raw feed to the top of the calciner/precalciner.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test Protocol	Each emission point of transfer for EUBLENDSILO	SC V.1, SC VI.1	40 CFR 60.62(c), 40 CFR 63.1345
2. PM	0.15 lb/1000 lb of exhaust gases	Test Protocol	Each emission point of transfer for EUBLENDSILO	GC 13	R 336.1331

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUBLENDSILO unless the associated enclosures or fabric filters are installed, maintained and operated in a satisfactory manner. The permittee shall equip each fabric filter with a bag leak detector system or an alternative monitoring method as approved in writing by the AQD District Supervisor. Satisfactory manner includes operating and maintaining each fabric filter control device in accordance with an approved Malfunction Abatement Plan. **(R 336.1205, R 336.1225, R 336.1301, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon start-up of EUBLENDSILO, the permittee shall comply with the National Emission Standards for Hazardous Air Pollutants which require evaluation of visible emissions from each emission point of FGNONKILNFACILITY, at owner's expense, in accordance with 40 CFR Part 63 Subparts A and LLL. The Method 9 performance test may be reduced to one hour if there is no individual readings greater than ten percent opacity and there are no more than three readings of ten percent for the first one hour period. Visible emission observation procedures must have prior approval by the AQD District Office. Verification of visible emissions includes the submittal of a complete report of opacity observations to the District Office within 30 days following the last date of the test. **(R 336.1301, 40 CFR 63.1349(b)(2), 40 CFR Part 60 Subparts A & LLL)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon start-up of EUBLENDSILO, monthly 10-minute visible emissions observations using USEPA Method 22 shall be conducted on each emission point of FGNONKILNFACILITY while operating. If visible emissions are observed, 30 minutes of opacity observations, recorded at 15-second intervals must be conducted in accordance with USEPA Method 9. The USEPA Method 9 test shall begin within one hour of any observation of VE. The test frequency shall be semiannual for each emission point for which there are no visible emissions observed over six consecutive monthly tests. The test frequency shall be annually if there are no visible emissions observed for an emission point during the semiannual test for the emission point. If any visible emissions are observed in the semiannual or annual visible emissions observations for an emission point, the facility shall resume monthly testing until the emission point again meets the requirements for semiannual or annual testing. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, 40 CFR 63.1350(f)(1))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVSILOIN	30	250	R 336.2803 R 336.2804
2. SVSILOOUT*	22	32	R 336.2803 R 336.2804

*Stack is discharged downward.

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the applicable provisions of the Federal New Source Performance Standards as specified in 40 CFR Part 60 Subparts A and F, as they apply each emission unit of EUBLENDSILO. **(40 CFR Part 60 Subparts A & F)**

2. The permittee shall comply with the applicable provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and LLL, as they apply each emission unit of EUBLENDSILO. **(40 CFR Part 63 Subparts A & LLL)**

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

April 1, 2016

PERMIT TO INSTALL
140-15

ISSUED TO
St. Marys Cement, Inc. (U.S.)

LOCATED AT
16000 Bell Bay Road
Charlevoix, Michigan

IN THE COUNTY OF
Charlevoix

STATE REGISTRATION NUMBER
B1559

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **December 22, 2015**	
DATE PERMIT TO INSTALL APPROVED: **April 1, 2016**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
		gr	Grains
EU	Emission Unit	HAP	Hazardous Air Pollutant
FG	Flexible Group	Hg	Mercury
GACS	Gallons of Applied Coating Solids	hr	Hour
GC	General Condition	HP	Horsepower
GHGs	Greenhouse Gases	H_2S	Hydrogen Sulfide
HVLP	High Volume Low Pressure*	kW	Kilowatt
ID	Identification	lb	Pound
IRSL	Initial Risk Screening Level	m	Meter
ITSL	Initial Threshold Screening Level	mg	Milligram
LAER	Lowest Achievable Emission Rate	mm	Millimeter
MACT	Maximum Achievable Control Technology	MM	Million
MAERS	Michigan Air Emissions Reporting System	MW	Megawatts
MAP	Malfunction Abatement Plan	NMOC	Non-methane Organic Compounds
MDEQ	Michigan Department of Environmental Quality	NO_x	Oxides of Nitrogen
		ng	Nanogram
MSDS	Material Safety Data Sheet	PM	Particulate Matter
NA	Not Applicable	PM10	Particulate Matter equal to or less than 10 microns in diameter
NAAQS	National Ambient Air Quality Standards		
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonable Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO_2	Sulfur Dioxide
SCR	Selective Catalytic Reduction	TAC	Toxic Air Contaminant
SNCR	Selective Non-Catalytic Reduction	Temp	Temperature
SRN	State Registration Number	THC	Total Hydrocarbons
TEQ	Toxicity Equivalence Quotient	tpy	Tons per year
USEPA/EPA	United States Environmental Protection Agency	µg	Microgram
		µm	Micrometer or Micron
VE	Visible Emissions	VOC	Volatile Organic Compounds
		yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUSOLIDFUELSYSTEM	Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos.	To Be Determined (TBD)	FGNONKILNFACILITY
EUINLINEKILN	The in-line Raw Mill kiln system uses a proportioning system for grinding and mixing sources of iron, silica, calcium, and alumina. These raw materials are added to the Raw Mill where the material is ground, and heated creating a Kiln Feed mixture, which is conveyed to EUBLENDSILO for blending and storage. Kiln Feed is transferred from EUBLENDSILO via the kiln feed belt scale, elevator, and fed to upper stages of the pre-heating tower. The Kiln Feed is calcined in the preheater tower, the source of heat for this reaction is generated in both the Calciner and Kiln, the Kiln is the location where the feed is heated to a point where the calcined feed is melted and then cooled to start the formation of clinker. A tertiary duct transfers hot exhaust gases from the clinker cooler to the calciner portion of the preheater tower. Control equipment associated with in-line kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses. The calciner and kiln have been designed to use traditional solid and liquid fuels and various alternative fuels including asphalt flakes, plastic and small quantities of cellulose fibers.	2/23/1978 TBD	NA
EUCLINKERCOOL	The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and baghouse.	TBD	NA

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUFINISHMILL4	Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.	TBD	FGFINISHMILLS, FGNONKILNFACILITY
EUCEMENTHAND&STO	Includes: pneumatic conveyors; silos #1- 12, 26-29, 6A; air slides #1-12 & below silos #1-6; dust collectors top of old silos #1-3, new silo #4, and below silos #1-6; bucket elevator with dust collector; storage dome & dust collector; truck loading & dust collector, and ship loading.	2/1/1978 12/1/1999 TBD	FGNONKILNFACILITY
EURAWMATHANDSTOR	Raw material loading, unloading and raw material transfer, including the material handling equipment that takes a feed into the kiln feed shelf. Also contains spill conveyors under the bottom ash feeder.	6/1/1967 TBD	FGNONKILNFACILITY
EUCKDHANDSTOR	Equipment associated with handling and storage of cement kiln dust. Includes: cement kiln dust elevator, north pug tank, south pug tank, and pug mill. Also includes all truck loading at 80 percent removal efficiency.	2/23/1978 10/1/1985 TBD	FGNONKILNFACILITY
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

The following conditions apply to: EUSOLIDFUELSYSTEM

DESCRIPTION: Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
COKEMIL1 - Petcoke Mill baghouse

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.1 SC VI.2	R 336.1301, 40 CFR 60.254
2. PM	0.010 gr/dscf	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.2	R 336.1331, 40 CFR 60.254
3. PM10	3.93 pph	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.3	R 336.2803, R 336.2804
4. PM2.5	1.86 pph	Test protocol*	SVCOKEMIL1 of EUSOLIDFUELSYSTEM	SC V.3	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall maintain and operate EUSOLIDFUELSYSTEM according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUSOLIDFUELSYSTEM unless the fabric filter with broken bag leak detectors or an alternative monitoring method approved in writing by the AQD District Supervisor is installed and/or implemented, maintained and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with a PM/MAP. **(336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup of EUSOLIDFUELSYSTEM, the permittee shall comply with federal Standards of Performance for New Stationary Sources which require evaluation of visible emissions from SVCOKEMIL1 of EUSOLIDFUELSYSTEM, at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Y. Thereafter, a new performance test must be conducted within 90 operating days of the previous test if the 6-minute average opacity reading exceeded half the applicable opacity limit or within 12 calendar months of the previous test if the 6-minute average opacity reading was equal to or less than half the applicable opacity limit. Visible emission observation procedures must have prior approval by the AQD Technical Programs Unit and District Office. No less than ten (10) days prior to the anticipated test date, the permittee shall notify the AQD District Supervisor of the test date. If after the anticipated test date has been submitted, there is a delay in conducting the test, the permittee shall submit to the AQD District Supervisor notice of the new test date. This notification shall take place a minimum of three (3) days prior to the rescheduled test taking place. Verification of visible emissions includes the submittal of a complete report of opacity observations to the AQD Technical Programs Unit and District Office within 30 days following the last date of the test. As an alternative to this performance test the permittee may elect to comply with daily observations and performance testing once every 5 years, as described in SC VI.1 and VI.2. **(R 336.1301, 40 CFR 60.255(b)(2), 40 CFR 60.257, 40 CFR Part 60 Subparts A & Y)**

2. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUSOLIDFUELSYSTEM, the permittee shall verify PM emission rates from SVCOKEMIL1 of EUSOLIDFUELSYSTEM concurrently with visual emissions test, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Y. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1331, 40 CFR 60.255(d), 40 CFR 60.257, 40 CFR Part 60 Subpart Y)**

3. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUSOLIDFUELSYSTEM, the permittee shall verify PM10 and PM2.5 emission rates from SVCOKEMIL1 of EUSOLIDFUELSYSTEM by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing of once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. As an alternative to visual emissions performance testing in SC V.1, the permittee may elect to do the following monitoring for SVCOKEMIL1 of EUSOLIDFUELSYSTEM:
   a) Conduct one daily 15-second observation each operating day (during normal operation) when the solid fuel preparation and processing plant is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in §2.3 of Method 22 of appendix A-7 of 40 CFR Part 60. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from SVCOKEMIL1 of EUSOLIDFUELSYSTEM. If visible emissions are observed, a Method 9, of appendix A-4 of 40 CFR Part 60, performance test must be conducted within 45 operating days.
   b) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.
   c) Conduct a performance test using Method 9 of appendix A-4 of this part at least once every 5 calendar years for each affected facility. **(40 CFR 60.255(f)(1), 40 CFR Part 60 Subpart Y)**

2. As an alternative to visual emissions performance testing in SC V.1, the permittee may elect to do the following monitoring for SVCOKEMIL1 of EUSOLIDFUELSYSTEM:

   Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the Administrator or delegated authority. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods (during normal operation) every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, *see* OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer- Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. The monitoring plan approved by the Administrator or delegated authority shall be implemented by the owner or operator. **(40 CFR 60.255(f)(2), 40 CFR Part 60 Subpart Y)**

3. The permittee shall maintain and record a logbook for SVCOKEMIL1 of EUSOLIDFUELSYSTEM, in a satisfactory manner, with the records as specified below:
   a) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted.
   b) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted.
   c) The amount and type of coal processed each calendar month.
   d) The amount of chemical stabilizer or water purchased for use in the coal preparation and processing plant.
   e) Monthly certification that the dust suppressant systems were operational when any coal was processed and that manufacturer's recommendations were followed for all control systems. Any variance from the manufacturer's recommendations, if any, shall be noted.
   f) Monthly certification that the fugitive coal dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive coal dust emissions control plan and any letters from the Administrator providing approval of any alternative control measures shall be maintained with the logbook. Any actions, e.g., objections, to the plan and any actions relative to the alternative control measures, e.g., approvals, shall be noted in the logbook as well.
   g) For each bag leak detection system, the owner or operator must keep the records specified below:
      i) Records of the bag leak detection system output;
      ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection settings; and
      iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.
   h) A copy of any applicable monitoring plan for a digital opacity compliance system and monthly certification that the plan was implemented as described. Any variance from plan, if any, shall be noted. **(40 CFR 60.258, 40 CFR Part 60 Subpart A and Y)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification of EUSOLIDFUELSYSTEM authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUSOLIDFUELSYSTEM. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOKEMILL1	63	119	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Y, as they apply to EUSOLIDFUELSYSTEM. **(40 CFR Part 60 Subparts A & Y)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

The following conditions apply to: EUINLINEKILN

DESCRIPTION: The in-line raw mill kiln system uses a proportioning system for grinding and mixing limestone, shale, sand, cement kiln dust (CKD), and overburden, in addition to sourced slag, calcium, aluminum, iron and silica. These raw materials are added to the raw mill where the material is ground, and heated creating a kiln feed mixture, which is conveyed to EUBLENDSILO for blending and storage.

Commented [YDM1]: EUBLENDSILO is covered by PTI 115-15

Kiln feed is transferred from EUBLENDSILO via the kiln feed belt scale, elevator, and fed to upper stages of the pre-heating tower.

The kiln feed is calcined in the preheater tower, the source of heat for this reaction is generated in both the calciner and kiln, the kiln is the location where the feed is heated to a point where the calcined feed is melted and then cooled to start the formation of clinker.

A tertiary duct transfers hot exhaust gases from the clinker cooler to the calciner portion of the preheater tower.

Control equipment associated with in-line kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses.

The calciner and kiln have been designed to use traditional solid and liquid fuels and various alternative fuels including asphalt flakes, plastic and small quantities of cellulose fibers. Propane is utilized for refractory curing but not for production of clinker.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: The in-line raw mill kiln system includes conditioning towers prior to downstream equipment (for modulating temperatures), SNCR, the main stack baghouse, bypass stack baghouse and other smaller baghouses.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.25 lb per 1000 lbs exhaust gas	Test Protocol*	Each SVMAIN and SVBYPASS of EUINLINEKILN	SC V.1, VI.9	R 336.1331(1)(a)
2. PM	0.07 lbs/ton of clinker produced		EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.5, V.8	40 CFR 63.1343(b)(1)
2. PM10	57.5 pph	Test Protocol*	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.6	R 336.2803, R 336.2804
3. PM2.5	57.5 pph	Test Protocol*	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.6	R 336.2803, R 336.2804
4. SO_2	1,175 pph	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.5, VI.7	R 336.2803, R 336.2804

Commented [SAJ2]: PM CPMS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
5. SO_2	7.5 lb/ton of clinker produced	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.5, VI.7	40 CFR 52.1183(h)
6. NO_x	700 pph	Hourly, as the average of each calendar day's emissions over the time of operation.	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.6, VI.8	R 336.2803, R 336.2804
7. NO_x (as NO_2)	2.8 lbs/ton of clinker produced	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.6, VI.8	R 336.1801(4)(e), 40 CFR 52.1183(h)
8. NO_x (as NO_2)	2.4 lbs/ton of clinker produced	12-month average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC VI.2, VI.6, VI.8	R 336.1801(4)(e), 40 CFR 52.1183(h)
9. D/F**	0.2 ng/dscm (TEQ) corrected to 7 percent oxygen***		EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.6, V.9	40 CFR 63.1343(b)(1)
~~9~~10. Mercury	106 lbs/yr	12-month rolling time period	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC V.7, VI.15	R 336.1228
11. Mercury	55 lbs/million tons of clinker produced	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.7	40 CFR 63.1343(b)(1)
12. OHAP	12 ppmvd corrected to 7 percent oxygen	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.8, V.11	40 CFR 63.1343(b)(1) foot note 4 alternative
13. HCl	3 ppmvd corrected to 7 percent oxygen	30-day rolling average	EUINLINEKILN (SVMAIN and SVBYPASS combined)	SC IV.9, V.	40 CFR 63.1343(b)(1)
~~10~~14. Opacity	10 percent	Test Protocol*	Each SVMAIN and SVBYPASS of EUINLINEKILN	SC VI.4	R 336.1301, 40 CFR 63.1343(b)(13)

*Test protocol shall establish averaging time.
** **Dioxin and furans, as defined in 40 CFR 63.1341**
***If the average temperature at the inlet to the first PM control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less, this limit is changed to 0.40 ng/dscm (TEQ).

Commented [SAJ3]: CEMS

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II. MATERIAL LIMITS

1. The permittee may use clear, brown or green glass as a raw material in EUINLINEKILN. Other glass containing emerald and fluorescent colored green glass using chromium or uranium and "leaded" glass shall be prohibited. **(R 336.1225)**

2. The permittee may use aluminum based refractory as a raw material in EUINLINEKILN. This aluminum based refractory shall not come from a source that combusts hazardous waste. **(R 336.1225)**

3. The permittee may use coal, petroleum coke, recyclable plastics, cellulose fibers, asphalt flakes, fuel oil, and propane as fuels in the EUINLINEKILN. **(R 336.1205(1), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804)**

4. The permittee shall not burn any fuel with asbestos tailing or asbestos containing waste materials as defined in 40 CFR 61.141 in EUINLINEKILN. **(R 336.1224, R 336.1225, R 336.1901, 40 CFR 61.141)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not produce more than 6,300 tons of clinker per day from EUINLINEKILN on a 30-day rolling average as determined at the end of each calendar day. **(R 336.1205(1)(a)(i), R 336.2803, R 336.2804)**

2. The permittee shall not produce more than 6,000 tons of clinker per day from EUINLINEKILN on a 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a)(i), R 336.2803, R 336.2804)**

3. The permittee shall not discharge exhaust gases through SVBYPASS unless the SVBYPASS baghouse is installed, maintained and operated ~~in a satisfactory manner~~properly. Proper operation of the baghouse shall include following the AQD approved Operations and Maintenance Plan for EUINLINEKILN and operating the dust collector during start-up and shutdown.2 **(R 336.1910, 40 CFR 63.1347**)

4. The permittee shall install, operate and maintain a differential pressure drop gauge to determine the pressure drop across each SVMAIN and SVBYPASS baghouses of EUINLINEKILN. **(R 336.1910)**

5. The permittee shall maintain and operate EUINLINEKILN according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

6. The temperature of the gases at the inlet of MAIN and BYPASS stack baghouses shall not exceed the respective levels established during the most recent performance testing conducted pursuant to 40 CFR, Part 63.1349(b)(3), as follows:

   a) When the raw mill is operating, the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.
   b) When the raw mill is not operating, the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was not operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.
   c) the temperature of the gases at the inlet of the MAIN baghouse established during the performance test when the raw mill was operating shall not be exceeded, except during startup and shutdown when the temperature limit may be exceeded by no more than 10%.

   (40 CFR 63.1346(a))

7. No in-line kiln/raw mill may use as a raw material or fuel any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent unless the facility can demonstrate the use of the fly ash shall not result in an increase in mercury emissions over baseline emissions (i.e. emissions not using the fly ash). The facility has the burden of proving there has been no emissions increase over baseline. Once the kiln is in compliance with a mercury emissions limit specified in SC I.11, this paragraph no longer applies. **(40 CFR 63.1346(f))**

8. During periods of startup and shutdown the permittee shall meet the following requirements:

   a) During startup the permittee shall use any one or combination of the following clean fuels: natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD) until the in-line kiln reaches a temperature of 1200 degrees Fahrenheit.
   b) Combustion of the primary kiln fuel may commence once the kiln temperature reaches 1200 degrees Fahrenheit.

c) All dry sorbent and activated carbon systems that control hazardous air pollutants shall be turned on and operating at the time the gas stream at the inlet to the baghouse reaches 300 degrees Fahrenheit (five minute average) during startup. Temperature of the gas stream shall be measured at the inlet of the baghouse every minute. The injection systems may be turned off during shutdown. Particulate control and all remaining devices that control hazardous air pollutants should be operational during startup and shutdown.

(40 CFR 63.1346(g))

9. As part of the application for a ROP, the permittee shall submit to the AQD District Supervisor, an approvable operation and maintenance plan. The plan shall contain all information required by 40 CFR 63.1347(a), as applicable, which includes the following:

a) Procedures for proper operation and maintenance of EUINLINEKILN and associated air pollution control devices in order to meet the emissions limits and operating limits of §§63.1343, and 63.1346. The permittees operations and maintenance plan must address periods of startup and shutdown.
b) Corrective actions to be taken when required by paragraph §63.1350(f)(3);
c) Procedures to be used during an inspection of the components of the combustion system of in-line kiln raw mill located at the facility at least once per year.

(40 CFR 63.1347)

~~5.~~

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The CEMS and COMS shall be installed, calibrated, maintained and operated, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR 60.13 and Performance Specification 1 (PS-1) for visible emissions, Performance Specification 2 (PS-2) for NO_x and SO_2, and Performance Specification 3 (PS-3) for Oxygen. These Performance Specifications are located in 40 CFR, Part 60, Appendix B. **(40 CFR 60.13, R 336.2150)**

2. The span value for the NO_x and SO_2 CEMS shall be 2.0 times the lowest emission standard or as specified in the federal regulations. **(40 CFR 60.13, R 336.2154)**

3. The permittee shall not operate EUINLINEKILN unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUINLINEKILN. **(R336.1301, R336.1331, R 336.1910, R 336.2803, R 336.2804)**

4. The permittee shall install, maintain, and operate a SNCR in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUINLINEKILN. **(R 336.1910, R 336.2803, R 336.2804)**

5. The permittee shall install, calibrate, maintain, and continuously operate a PM CPMS, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR Part 63 Subpart LLL. (40 CFR 63.1350)

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6. The permittee shall install, calibrate, maintain, and continuously operate a CMS to record the temperature of the exhaust gases from the kiln and alkali bypass, at the inlet to, or upstream of, the kiln and/or alkali bypass PM control devices. (40 CFR 63.1350)

7. The permittee shall install and operate a mercury continuous emissions monitoring system (Hg CEMS) in accordance with Performance Specification 12A (PS 12A) of appendix B to 40 CFR Part 60 or an integrated sorbent trap monitoring system in accordance with Performance Specification 12B (PS 12B) of appendix B to 40 CFR Part 60 of this chapter. The permittee must monitor mercury continuously according to 63.1350(k)(1) through (5). The permittee shall develop an emissions monitoring plan in accordance with 63.1350(p)(1) through (4). (40 CFR 63.1350)

8. The permittee shall install, operate, and maintain a THC continuous emission monitoring system in accordance with Performance Specification 8 or Performance Specification 8A of appendix B to 40 CFR Part 60 and comply with all of the requirements for continuous monitoring systems found in the general provisions, 40 CFR Part 63 subpart A. The owner or operator must operate and maintain each CEMS

according to the quality assurance requirements in Procedure 1 of appendix F in 40 CFR Part 60. For THC continuous emission monitoring systems certified under Performance Specification 8A, conduct the relative accuracy test audits required under Procedure 1 in accordance with Performance Specification 8, Sections 8 and 11 using Method 25A in appendix A to 40 CFR part 60 as the reference method; the relative accuracy must meet the criteria of Performance Specification 8, Section 13.2. (40 CFR 63.1350)

9. The permittee shall install, calibrate, maintain, and continuously operate an HCl CEMS, for EUINLINEKILN, in accordance with the procedures set forth in 40 CFR Part 63 Subpart LLL. (40 CFR 63.1350)

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify PM emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense in accordance with Department requirements. Monitoring and recording of SVMAIN and SVBYPASS baghouse differential pressure during the test is required. Testing thereafter shall be coordinated with the ROP testing once every five (5) years. **(R 336.1331(1)(a), R 336.2001, R 336.2003)**

2. The permittee shall verify each shipment of recyclable plastic is acceptable to use as fuel in EUINLINEKILN, by testing at owner's expense, in accordance with Department requirements and as specified in Appendix 5. **(R 336.2001, R 336.2003)**

3. The permittee shall perform an annual audit of the COMS using the procedures set forth in Procedure 3 Appendix F of 40 CFR, Part 60, "Quality Assurance Procedures – QC Requirements", or other procedure acceptable to the AQD. **(R 336.1301, 40 CFR Part 60 Appendix F)**

4. Each calendar quarter, the permittee shall perform the NO_x Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60. **(40 CFR 60.13, Appendix F)**

5. Each calendar quarter, the permittee shall perform the SO_2 Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR, Part 60. **(40 CFR 60.13, Appendix F)**

6. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify PM10 and PM2.5 emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense, in accordance with Department requirements. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

7. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUINLINEKILN, the permittee shall verify mercury emission rates from SVMAIN and SVBYPASS of EUINLINEKILN by testing at owner's expense, in accordance with Department requirements. The test results will be used in developing emission factors to determine compliance with SC I.9. Verification shall be performed annually thereafter or until a mercury CEMs has been installed and a petition, in writing, requesting the use of the CEMS has been submitted to the AQD district Supervisor. **(R 336.1228, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

8. The permittee shall verify PM emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 5 or Method 5I at appendix A-3 to 40 CFR Part 60, annually. The PM CPMS shall be used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test shall be repeated annually to reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in 40 CFR Part 63, Subpart LLL. The permittee shall also repeat the test if there's a change in the analytical range of the instrument, or if the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration is replaced.[2] **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

9. The permittee shall demonstrate initial compliance with D/F emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 23 of appendix A-7 to part 40 CFR Part 60. The permittee shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. You may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is

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operating or not operating.

(i) Each performance test must consist of three separate runs conducted under representative conditions. The duration of each run must be at least 3 hours, and the sample volume for each run must be at least 2.5 dscm (90 dscf).

(ii) The temperature at the inlet to the kiln or in-line kiln/raw mill PMCD, and, where applicable, the temperature at the inlet to the alkali bypass PMCD must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

(iii) Average temperatures must be calculated for each run of the performance test.

(iv) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report and will determine the applicable temperature limit in accordance with §63.1346(b).[2] **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

10. The permittee shall demonstrate initial compliance with D/F emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 23 of appendix A-7 to part 40 CFR Part 60. The permittee shall conduct simultaneous performance tests of the kiln or in-line kiln/raw mill exhaust and the alkali bypass. You may conduct a performance test of the alkali bypass exhaust when the raw mill of the in-line kiln/raw mill is operating or not operating. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

11. The permittee shall demonstrate compliance with organic HAP emission rates from EUINLINEKILN by testing, at owner's expense, in accordance with Method 320, Method 18, or ASTM D6348-03 or a combination of the methods. Method 320 and ASTM D6348-03 both employ an FTIR instrument that can detect a number of organic HAP simultaneously; however, interferences in some spectra exist such that Method 18 may be necessary to target individual HAP and conduct GC analysis of the sample.

(a) Instead of conducting the performance test specified in paragraph V.11, you may conduct a performance test to determine emissions of total organic HAP by following the procedures in 63.1349(b)(7)(i) through (v). **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)**

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the kiln feed rate in tons of dry feed per hour through EUINLINEKILN with instrumentation acceptable to the AQD. The kiln feed production rate is determined from the kiln feed weigh scale. All records shall be made available to the Department upon request. **(R 336.1205)**

2. The permittee shall calculate and record the production rate in tons of clinker produced per hour and per day from EUINLINEKILN on a daily basis using the equation in Appendix 3A or as approved by the AQD District Supervisor. **(R 336.1801, R 336.2803, R 336.2804)**

3. On a quarterly basis, the permittee shall determine, record, and maintain a record of the accuracy of the kiln feed weigh scale used for measuring hourly kiln feed rates. **(R 336.1205)**

4. The permittee shall continuously monitor and record visible emissions of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a COM system located in both SVMAIN and SVBYPASS. The permittee shall maintain a QA/QC program as specified in 40 CFR Part 60 and comply with the requirements as specified in PS 1, Appendix B of 40 CFR, Part 60. **(40 CFR 60.13, R 336.2150)**

5. From EUINLINEKILN, the permittee shall continuously monitor and continuously demonstrate compliance with the PM emissions standard by complying with the requirements of 40 CFR Part 63, Subpart LLL, included in Appendix 3.5. **(40 CFR 63.1350(b))**

6. For each emission unit that is equipped with a CPMS, maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.[2] **(40 CFR 63.1350(a))**

~~5.~~7. To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.[2] **(40 CFR 63.1350(b))**

~~6.~~8. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:
   a. Within 48 hours of the exceedance, visually inspect the APCD;
   b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
   c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.2 (40 CFR 63.1350(b))

9. The permittee shall continuously monitor and record the SO_2 emissions of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a CEM system. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR Part 60 and to comply with the requirements as specified in PS 2, Appendix B of 40 CFR Part 60. **(40 CFR 60.13, R 336.1205(1)(a)(ii)(E))**

10. The permittee shall continuously monitor and record the NO_x emissions and volumetric flow of the exhaust gases from EUINLINEKILN routed through SVMAIN and SVBYPASS with a CEM system. The permittee shall maintain a QA/QC program as specified in Appendix F of 40 CFR Part 60 and to comply with the requirements as specified in PS 2, Appendix B of 40 CFR Part 60. **(R 336.1205(1)(a)(ii)(E), R 336.1801(8), 40 CFR 60.13)**

11. The permittee shall keep, in a satisfactory manner, pounds per hour, tons per month, and 12-month rolling time period SO_2 emission records from the SO_2 CEM system for EUINLINEKILN. **(R 336.2803, R 336.2804)**

12. The permittee shall keep, in a satisfactory manner, NO_x emission records in pounds per ton of clinker produced, using the NO_x CEM system and clinker produced for EUINLINEKILN. **(R 336.1801, R 336.2803, R 336.2804)**

13. The permittee shall monitor and record the pressure drop on SVMAIN and SVBYPASS baghouses of EUINLINEKILN to verify operation is within the range as described in the MAP. The compliant differential pressure range shall be established during stack testing to verify PM emission rates. **(R 336.1331)**

14. The permittee shall keep records of the amount and type of glass used as a raw material and the amount and type of refractory used as a raw material in EUINLINEKILN. **(R 336.1225)**

15. The permittee shall retain and record the supplier certificates of quality, sampling analysis results, and manifests for each delivery (as described in Appendix 5) of alternate fuels used in EUINLINEKILN. All documentation shall be made available to the AQD upon request. **(R 336.1225, R 336.1228)**

16. The permittee shall continuously monitor the alternate fuels feed rate to EUINLINEKILN using an in-line belt scale or other method, as approved by the AQD District Supervisor. The alternate fuels feed rate of EUINLINEKILN shall be continuously recorded (as described in Appendix 3A) in tons per hour as determined on a daily average using the plants electronic (computer) monitoring system and make all records available to the Department upon request. **(R 336.1205(1), R 336.1225)**

17. The permittee shall keep all sampling and/or testing results for the alternate materials used as fuel for EUINLINEKILN. The permittee shall use a recordkeeping method acceptable to the AQD District Supervisor and make all records available to the Department upon request. **(R 336.1225)**

18. The permittee shall verify that any material processed by EUINLINEKILN does not contain asbestos tailings or asbestos containing waste materials. **(R 336.1225)**

19. The permittee shall calculate, in a satisfactory manner acceptable to the AQD, the mercury emissions from EUINLINEKILN. The permittee shall use Appendix 6, or other method as approved by the AQD, to determine the monthly and 12-month rolling time period mercury emissions, as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the AQD upon request. **(R336.1228)**

VII. REPORTING

1. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of the NO_x Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60). **(40 CFR 60.13, Appendix F)**

2. ~~On or before March 15th of each year after entry of Consent Decree Case No. 1:06-cv-607 until its termination, the permittee shall submit to the USEPA and the MDEQ an annual report for the preceding year that shall include a discussion of the status of the installation of the main stack baghouse and a discussion of the permittee's progress in satisfying their obligations in connection with the indirect firing system. At a minimum the report shall include a narrative description of activities undertaken and an itemization (with copies of supporting documentation) of costs incurred since the previous report. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.a)**~~

3. ~~If the permittee violates, or has reason to believe that it may have violated, any requirement of the Consent Decree Case No. 1:06-cv-607, the permittee shall notify the MDEQ of such violation and its likely duration in writing within ten working days of the day the permittee first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, and/or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the permittee shall include a statement to that effect in the report. The permittee shall investigate to determine the cause of the violation and then shall submit an amendment to the report, including a full explanation of the cause of the violation, within 30 days of the day the permittee becomes aware of the cause of the violation. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.23.b)**~~

4. ~~In the case of any violation of Consent Decree Case No. 1:06-cv-607 or other event that may pose an immediate threat to the public health or welfare or the environment, the permittee shall notify the MDEQ orally or by electronic or facsimile transmission as soon as possible, but not later than 24 hours after the permittee first knew of the violation or event. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**~~

5. ~~Each report submitted by the permittee pursuant to Consent Decree Case No. 1:06-cv-607 shall be signed by the responsible official of the submitting party and include the following certification: I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gathered and presented the information contained therein. I further certify, based on my personal knowledge or on my inquiry of these individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing and willful submission of a materially false statement. **(Consent Decree Case No. 1:06-cv-607, Paragraph VII.24)**~~

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~~6.~~2. Prior to emissions testing, the permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.2001(3))**

~~7.~~3. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated emissions test date. **(R 336.2001(4))**

~~8.~~4. No less than 30 days prior to the performance evaluation of the COM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the COM system complies with the requirements of PS 1. **(40 CFR 60.7, R 336.2170)**

~~9.~~5. No less than 30 days prior to the SO_2 performance evaluation of the CEM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEM system complies with the requirements of PS 6. **(40 CFR 60.13, 40 CFR Part 60, Appendix B)**

~~10.~~6. No less than 30 days prior to the performance evaluation of the NO_x CEM system, a complete test plan must be submitted to the AQD. The final test plan must have approval prior to the testing. The permittee shall submit to the AQD, within 60 days of completion, two copies of the final report demonstrating the CEM system complies with the requirements of PS 6. **(40 CFR Part 60, Appendix B, R 336.1801(11), 40 CFR 60.13)**

~~11.~~7. The daily clinker production rate shall be submitted to the AQD District Supervisor within one month after the end of the calendar quarter. All records, including data generated during reviews and audits of clinker production as referred to in Appendix 3A or as approved by the AQD District Supervisor, shall be made available to the Department upon request. **(R 336.1205)**

~~12.~~8. Within 30 days of written request by the AQD District Supervisor, the permittee shall submit to the District Supervisor a written summary of the results of any review or audit of clinker production. The summary shall compare the tons of clinker produced as determined in the review or audit to the tons of clinker produced as calculated using Appendix 3A or as approved by the AQD District Supervisor. **(R 336.1205)**

~~13.~~9. Within 30 days following the end of each calendar quarter, the permittee shall submit the results of NOx and SO_2 Quality Assurance Procedures to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR, Part 60). **(40 CFR 60.13, Appendix F)**

~~14.~~10. The permittee shall notify the AQD District Supervisor, when receiving plastic fuel from a new supplier and/or new source (as defined in Appendix 5), or a supplier and/or source that has not been used in the last two years. The notification shall include the following information within the timeframe listed:

a) Name of the new material supplier and/or source – 30 days before delivery.
b) Description of what the material was generated for or from – 30 days before delivery.
c) A sampling analysis summary of the material identifying the constituents as described in Appendix 5 – upon delivery. **(R 336.1225)**

15. The permittee shall submit all applicable notification and reports as required by 40 CFR Part 63, Subpart LLL. (40 CFR 63.1354)

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VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVMAIN	132	323	R 336.1225, R 336.2803, R 336.2804
2. SVBYPASS	78	225	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

~~1.~~ ~~Upon the February 7, 2018 compliance date, the stationary source will be subject to all future applicable requirements of a State or Federal plan to be promulgated implementing the emission guidelines of 40 CFR Part 60, Subpart DDDD, Commercial and Industrial Solid Waste Incineration (CISWI) units that commenced construction on or before November 30, 1999.~~ ~~**(40 CFR Part 60, Subpart DDDD)**~~ The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subpart A and Subpart LLL, as they apply to EUINLINEKILN. (40 CFR Part 63, Subparts A & LLL)

2. The permittee shall comply with all applicable requirements of the Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60, Subpart A and Subpart F, as they apply to EUINLINEKILN. (40 CFR Part 60, Subpart A & F)

~~1.~~3. The permittee shall comply with all applicable requirements of the Regional Haze Regulations requiring Best Available Retrofit Technology (BART) effective January 1, 2017. **(40CFR 52.1183(h))**

~~2.~~4. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

The following conditions apply to: EUCLINKERCOOL

DESCRIPTION: The new clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including: clinker cooler, clinker heat exchanger, and fabric filter baghouses.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
COOLER – Clinker Cooler

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	EUCLINKERCOOLER	SC VI.3	R 336.1301, 40 CFR 63.1343(b)
2. PM	0.02 lb/ton of clinker throughput	Test protocol*	EUCLINKERCOOLER	SC V.1, SC VI.1	40 CFR 60.62(b), 40 CFR 63.1343(b)
3. PM10	5.0 pph	Test protocol*	EUCLINKERCOOLER	SC V.2	R 336.2803, R 336.2804
4. PM2.5	5.0 pph	Test protocol*	EUCLINKERCOOLER	SC V.2	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall develop a site-specific monitoring plan according to the following requirements:
   a) Installation of the continuous monitoring system (CMS) sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);
   b) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and
   c) Performance evaluation procedures and acceptance criteria (e.g., calibrations),
   d) Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR 63.8(c)(1), (c)(3), and (c)(4)(ii);
   e) Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR 63.8(d);
   f) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR 63.10(c), (e)(1), and (e)(2)(i).

   The plan must be submitted at least 30 days before the initial performance evaluation of the PM continuous parametric monitoring system (CPMS). **(40 CFR 60.63(i))**

2. The permittee shall maintain and operate EUCLINKERCOOLER according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912)**

3. The permittee shall install and operate a PM continuous parametric monitoring system (CPMS) for EUCLINKERCOOLER in accordance with 40 CFR Part 63, Subpart LLL.2 (40 CFR 63.1350(b))

4. The permittee shall not operate FG CLINK COOL unless the AQD approved Operations and Maintenance Plan is implemented and maintained.2 (R 336.1911, 40 CFR 63.1347)

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IV. DESIGN/EQUIPMENT PARAMETERS

1. A PM CPMS shall be installed, calibrated, maintained, and operated for EUCLINKERCOOLER in accordance with the procedures set forth in 40 CFR Part 60. **(40 CFR 60.63(c), 40 CFR 63.~~13491~~1350(b))**

2. The permittee shall not operate EUCLINKERCOOLER unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUCLINKERCOOLER. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUCLINKERCOOLER, the permittee shall verify PM emission rates from EUCLINKERCOOLER and while concurrently monitoring continuous performance through the use of a PM CPMS to establish a site specific operating limit, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and F. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1331, 40 CFR 60.64, 40 CFR 63.1349)**
2. The permittee shall verify PM emission rates from EUCLINKERCOOLER by testing, at owner's expense, in accordance with the AQD requirement, annually. The PM CPMS shall be used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test shall be repeated annually to reassess and adjust the site-specific operating limit in accordance with the results of the performance test using the procedures in 40 CFR Part 63, Subpart LLL. The permittee shall also repeat the test if there's a change in the analytical range of the instrument, or if the instrument itself or any principle analytical component of the instrument that would alter the relationship of output signal to in-stack PM concentration is replaced.2 (R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.1349, 40 CFR 63.1350)

~~1.~~3. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup EUCLINKERCOOLER, the permittee shall verify PM10 and PM2.5 emission rates from EUCLINKERCOOLER by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

~~1. The permittee shall continuously monitor and record the PM emissions using a PM CPMS for EUCLINKERCOOLER. (40 CFR 60.63(c), 40 CFR 63.1350)~~

~~2. The permittee shall monitor and record the pressure drop on the baghouses of EUCLINKERCOOLER to verify operation is within the range as described in the MAP. The compliant differential pressure range shall be established during stack testing to verify PM emission rates. (R 336.1331)~~

~~3.~~1. ~~The permittee shall perform and document non-certified visible emissions observations as required in SC I.1 on a daily basis when EUCLINKERCOOLER is operating. If during the observation there are any visible emissions detected from an emission point, an EPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, EPA Method 9 observations that are performed, the reason~~

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for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1910, R 336.1911, 40 CFR 60.64, 40 CFR 63.1349(b)(2))**

1. From EUCLINKERCOOLER, the permittee shall continuously monitor and continuously demonstrate compliance with the PM emissions standard by complying with the requirements of 40 CFR Part 63, Subpart LLL, included in Appendix 3.5. (40 CFR 63.1350(f)(2), 40 CFR 64.6(c)(1)(iii))

2. For each emission unit that is equipped with a CPMS, maintain the average emissions or the operating parameter values within the operating parameter limits established through performance tests.2 (40 CFR 63.1350(a))

3. To determine continuous compliance, you must use the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.2 (40 CFR 63.1350(b))

4. For any exceedance of the 30 process operating day PM CPMS average value from the established operating parameter limit, you must:
   a. Within 48 hours of the exceedance, visually inspect the APCD;
   b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
   c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days. You are not required to conduct additional testing for any exceedances that occur between the time of the original exceedance and the PM emissions compliance test required under this paragraph.2 (40 CFR 63.1350(b))

5. The permittee shall determine the hourly clinker production in one of two methods:
   a. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy, or
   b. Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed must be maintained within ±5 percent accuracy. Calculate your hourly clinker production rate using a kiln-specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. Update this ratio monthly. Note that if this ratio changes at clinker reconciliation, you must use the new ratio going forward, but you do not have to retroactively change clinker production rates previously estimated.2 (40 CFR 63.1350(d))

6. The permittee shall determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production (or feed mass flow if applicable) before initial use (for new sources) or by the effective compliance date of this rule (for existing sources). During each quarter of source operation, you must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production (or feed mass flow).2 (40 CFR 63.1350(d))

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VII. REPORTING

1. Within 60 days after the date of completing each performance test (see 40 CFR 60.8) as required by 40 CFR Part 60 Subpart F, the permittee shall submit the results of the performance tests conducted to demonstrate compliance with 40 CFR Part 60 Subpart F. **(40 CFR 60.64(d), 40 CFR Part 60 Subparts A & F)**

2. For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run. **(40 CFR 60.64(d), 40 CFR Part 60 Subparts A & F)**

3. Each owner or operator required to install a CPMS or CEM system under sections 40 CFR 60.63(c) through (e) shall submit reports of excess emissions. The content of these reports must comply with the requirements in 40 CFR 60.7(c). Notwithstanding the provisions of 40 CFR 60.7(c), such reports shall be submitted semiannually. **(40 CFR 60.65(a), 40 CFR Part 60 Subparts A &F)**

4. Each owner or operator of facilities subject to the provisions of 40 CFR 60.63(c) through (e) shall submit semiannual reports of the malfunction information required to be recorded by 40 CFR 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in deenergization of any device controlling clinker cooler emissions or in the venting of emissions directly to the atmosphere. **(40 CFR 60.65(b), 40 CFR Part 60 Subparts A & F)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOOLER	132	134	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable requirements of the federal Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60 Subparts A and F, as they apply to EUCLINKERCOOLER. **(40 CFR Part 60 Subparts A & F)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subparts A and LLL as they apply to EUCLINKERCOOLER. **(40 CFR Part 63, Subparts A & LLL)**

3. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

The following conditions apply to: EUFINISHMILL4

DESCRIPTION: Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.

Flexible Group ID: FGFINISHMILLS, FGNONKILNFACILITY

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouse for particulate matter control.
FM4 – Finishmill No. 4

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	EUFINISHMILL4	SC VI.1	R 336.1301, 40 CFR 60.62(c), 40 CFR 63.1345
2. PM	0.15 lb/1000 lbs exhaust gas	Test protocol*	EUFINISHMILL4	SC V.1	R 336.1331
3. PM10	6.24 pph	Test protocol*	EUFINISHMILL4	SC V.2	R 336.2803, R 336.2804
4. PM2.5	6.24 pph	Test protocol*	EUFINISHMILL4	SC V.2	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall maintain and operate EUFINISHMILL4 according to the procedures outlined in the preventative maintenance/malfunction abatement plan (PM/MAP). The plan shall be updated within 180 days of issuance of this PTI and describe how emissions will be minimized during all startups, shutdowns, and malfunctions. **(R 336.1911, R 336.1912**)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUFINISHMILL4 unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for EUFINISHMILL4. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUFINISHMILL4, the permittee shall verify PM emission rates from EUFINISHMILL4 by testing at owner's expense, in accordance with Department requirements. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.1331(1)(a), R 336.2001, R 336.2003)**

Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EUFINISHMILL4, the permittee shall verify PM10 and PM2.5 emission rates from EUFINISHMILL4 by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. Testing thereafter shall be coordinated with the ROP testing once every five years. **(R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall perform and document non-certified visible emissions observations as required in SC I.1 on a daily basis when EUFINISHMILL4 is operating. If during the observation there are any visible emissions detected from an emission point, an EPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, EPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD and made available upon request. **(R 336.1910, R 336.1911, 40 CFR 60.64, 40 CFR 63.1349(b)(2))**

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VII. REPORTING

1. The permittee shall submit all applicable reports as described in the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants as they apply to EUFINISHMILL4. **(40 CFR 63.1354, 40 CFR 60.65)**

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VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVFM4	98.5	141	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable requirements of the federal Standards of Performance for Portland Cement Plants as specified in 40 CFR Part 60 Subparts A and F, as they apply to EUFINISHMILL4. **(40 CFR Part 60 Subparts A & F)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subparts A and LLL as they apply to EUFINISHMILL4. **(40 CFR Part 63, Subparts A & LLL)**

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3. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGNONKILNFACILITY	This flexible group covers handling the materials, gases, fuels, and dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand; clinker cooler gases; coal and petroleum coke; and the finished cement product.	EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUCOALSYSTEM, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUFINISHMILL4
FGPROJECT2016	Upgrades at the existing Portland cement plant to increase the production capacity. A Hybrid applicability analysis was used to determine a non-significant emission increase.	EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUFINISHMILL4, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUCLINKERCOOL, EUINLINEKILN

The following conditions apply to: FGNONKILNFACILITY

DESCRIPTION: This Flexible Group covers handling the materials, gasses, fuels, and dust associated with the production of cement. Included are limestone, bottom ash, fly ash, sand; clinker cooler gasses; coal and petroleum coke; and the finished cement product that is shipped for sale.

Emission Units: EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUCOALSYSTEM, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUFINISHMILL4

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouses for particulate matter control.
NEW009 – Raw Mill Blending Silo Extraction
NEW0009-1 – PH Bucket Tower Inlet
NEW010 – Top of PH Tower Feed
NEW013 – Clinker Conveyor
NEW014 – Clinker Conveyor Transfer
NEW014-1 – Clinker Conveyor Transfer #2
NEW015 – Cement Mill 4 Feed Conveyor
NEW015-1 – Cement Mill 4 Feed Conveyor #2
NEW015-2 – Cement Mill 4 Feed Conveyor #3
NEW017 – Cement Air Slides to Cement Cooler
NEW018 – Cement Silos Feed

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Opacity	10 percent	Test protocol*	FGNONKILNFACILITY	SC VI.1	R 336.1301, 40 CFR 63.1345
2. PM	0.15 lb/1000 lbs exhaust gas	Test protocol*	FGNONKILNFACILITY	SC VI.1	R 336.1331
3. PM10	0.37 pph	Test protocol*	Each for SVNEW015, SVNEW015-1, SVNEW015-2 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
4. PM2.5	0.37 pph	Test protocol*	Each for SVNEW015, SVNEW015-1, SVNEW015-2 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
5. PM10	0.041 pph	Test protocol*	SVNEW017 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
6. PM2.5	0.041 pph	Test protocol*	SVNEW017 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
7. PM10	0.016 pph	Test protocol*	SVNEW018 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
8. PM2.5	0.016 pph	Test protocol*	SVNEW018 of EUCEMENTHAND&STOR	SC VI.1	R 336.2803, R 336.2804
9. PM10	0.0167 pph	Test protocol*	Each for SVNEW013, SVNEW014, SVNEW014-1 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804

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Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
10. PM2.5	0.0167 pph	Test protocol*	Each for SVNEW013, SVNEW014, SVNEW014-1 of EUCLINKERHAND	SC VI.1	R 336.2803, R 336.2804
11. PM10	0.042 pph	Test protocol*	Each for SVNEW009, SVNEW009-1, SVNEW010 of EURAWMATHANDSTOR	SC VI.1	R 336.2803, R 336.2804
12. PM2.5	0.042 pph	Test protocol*	Each for SVNEW009, SVNEW009-1, SVNEW010 of EURAWMATHANDSTOR	SC VI.1	R 336.2803, R 336.2804
*Test protocol shall determine averaging time.					

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The requirement to conduct Method 22 visible emissions monitoring pursuant to SC VI.1 and 40 CFR 63.1350(f)(1) do not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" means a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points must be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan. **(40 CFR 63.1350(f)(1)(v))**

2. The permittee shall not operate FGNONKILNFACILITY unless the Operations and Maintenance Plan (OMP), including a fugitive dust plan, is implemented and maintained. **(R 336.1205, R 336.1901, 40 CFR 63.1347)**

3. The permittee shall not operate FGNONKILNFACILITY unless a PM/MAP that describes how emissions will be minimized during all startups, shutdowns, and malfunctions, is updated, implemented and maintained. **(R 336.1911, R 336.1912, 40 CFR 63.6(e)(3))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The belt conveyor installed to convey refractory to the kiln system shall be covered or located in an enclosed structure. **(R 336.1301)**

2. The permittee shall not operate FGNONKILNFACILITY unless the fabric filter baghouses are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device in accordance with an approved PM/MAP for FGNONKILNFACILITY. **(R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Monthly 10-minute visible emissions observations using USEPA Method 22 shall be conducted on each emission point of FGNONKILNFACILITY while operating. If visible emissions are observed, 30 minutes of opacity observations, recorded at 15-second intervals must be conducted in accordance with USEPA Method 9. The USEPA Method 9 test shall begin within one hour of any observation of visible emissions. The test frequency shall be semiannual for each emission point for which there are no visible emissions observed over six consecutive monthly tests. The test frequency shall be annually if there are no visible emissions observed for an emission point during the semiannual test for the emission point. If any visible emissions are observed in the semiannual or annual visible emissions observations for an emission point, the facility shall resume monthly testing until the emission point again meets the requirements for semiannual or annual testing. **(40 CFR 63.1350(f)(1))**

2. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the permittee must conduct a Method 22 performance test according to the requirements of SC VI.1 above for each such conveying system transfer point located within the building, or for the building itself, according to SC VI.3 and 40 CFR 63.1350(f)(1)(vii). **(40 CFR 63.1350(f)(1)(vi))**

3. If monitored emission points include visible emissions from a building, the requirements of SC VI.1 apply to the monitoring of the building. The permittee must test visible emissions from each side, roof, and vent of the building for at least 10 minutes using USEPA Method 22. **(40 CFR 63.1350(f)(1)(vii))**

4. The permittee shall keep, in a satisfactory manner, visible emission records for FGNONKILNFACILITY. All records shall be made available to the Department upon request. **(40 CFR 63.1355)**

5. The permittee shall keep records as required in the OMP. All records shall be made available to the Department upon request. **(R 336.1911)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FGNONKILNFACILITY. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVNEW009	22	50	R 336.1225, R 336.2803, R 336.2804
2. SVNEW009-1*	24	24	R 336.1225, R 336.2803, R 336.2804
3. SVNEW010*	22	288	R 336.1225, R 336.2803, R 336.2804
4. SVNEW013*	14	24	R 336.1225, R 336.2803, R 336.2804
5. SVNEW014*	14	47	R 336.1225, R 336.2803, R 336.2804
6. SVNEW014-1*	14	79	R 336.1225, R 336.2803, R 336.2804
7. SVNEW015*	30	42	R 336.1225, R 336.2803, R 336.2804
8. SVNEW015-1*	30	49	R 336.1225, R 336.2803, R 336.2804
9. SVNEW015-2*	30	60	R 336.1225, R 336.2803, R 336.2804
10. SVNEW017	24	8.0	R 336.1225, R 336.2803, R 336.2804
11. SVNEW018	14	56	R 336.1225, R 336.2803, R 336.2804
*Horizontal Discharge			

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry as specified in 40 CFR Part 63, Subparts A and LLL. **(40 CFR Part 63, Subparts A & LLL)**

2. The permittee shall comply with the approved OMP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(40 CFR 63.1347)**

3. The permittee shall comply with the approved PM/MAP, or an alternate plan approved by the AQD District Supervisor. If the plan is not adequate, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan to the AQD District Supervisor. **(R 336.1911, R 336.1912)**

The following conditions apply to: FGPROJECT2016

DESCRIPTION:

Emission Units: EURAWMATHANDSTOR, EUCLINKERHAND, EUCEMENTHAND&STO, EUFINISHMILL4, EUSOLIDFUELSYSTEM, EUCKDHANDSTOR, EUCLINKERCOOL, EUINLINEKILN

POLLUTION CONTROL EQUIPMENT: Fabric filter baghouses for particulate matter control and SNCR.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the annual emissions of SO_2 from FGPROJECT2016 described in Appendix 4, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of FGPROJECT2016 resumes operation and shall continue for ten (10) years. **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

VII. REPORTING

1. The permittee shall submit records of the annual emission of SO_2 from FGPROJECT2016 described in Appendix 4, in tons per calendar year, to the AQD District Supervisor and Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:

   a) The calendar year actual emission of SO_2 exceed the baseline actual emissions (BAE) by a significant amount, and
   b) The calendar year actual emissions differ from the pre-construction projection. (The pre-construction projection is the sum of the projected actual emissions from each existing emission unit and the potential emissions from each new emission unit included in the Hybrid Applicability Test used for FGPROJECT2016.)

   The report shall contain the name, address, and telephone number of the facility; the annual emissions as calculated pursuant to SC VI.1, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

APPENDIX 3A - Monitoring
Methods for Determining Clinker Production

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in EUINLINEKILN. Either method is acceptable for use.

A. Historic Methodology

1. The formula for determining clinker production (CP) is:

   CP = KF x CCF

   Where:
   CP = hourly clinker production.
   KF = the hourly in-line kiln raw material feed rate, this number is derived from the kiln feed weigh scale.
   CCF = the clinker conversion factor (clinker production rate divided by the kiln raw feed rate), this number is a variable derived from historical periodic checks.

   Clinker production determined from raw feed input is dependent on various parameters. The amount of clinker produced from raw feed is site specific based on fuels used and their ash content at the time of use, raw material characteristics such as amount of organic that can be driven off in the process such as shale that would have a higher loss on ignition than slag or bottom ash, and other parameters involved in determining the amount of clinker generated from a given volume of raw materials.

2. The process of determining the CCF number is as follows:
   i) A macro change to raw materials being fed to the kiln could trigger a CCF review or audit.
   ii) Clinker production during a given time period would be diverted from the clinker cooler and be sent to outside storage location.
   iii) After the clinker has cooled, it would be sent to an onsite scale to determine the tonnage of clinker produced in a given time period.
   iv) This tonnage of clinker would be compared to the KF for the same period of time to generate the CCF.

3. The CCF is multiplied by the raw feed rate, on a continuous basis, to determine clinker production for the same time period. This calculation is done by the Kiln controls system and automatically stored therein. The historic site-specific CCF ranges from 0.45 to 0.75. All plant scales are calibrated periodically to assure accuracy.

4. If any review or audit determines more clinker was produced than was calculated using the above method, this information shall be used to determine CCF in the future. However, previously-recorded and previously-reported hourly clinker production shall not be adjusted based on review or audit results.

B. NESHAP Methodology

1. Determine hourly clinker production by one of two methods:
   i) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of clinker produced. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy.
   ii) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates in tons-mass per hour of the amount of feed to the kiln. The system of measuring feed must be maintained within ±5 percent accuracy. Calculate your hourly clinker production rate using a kiln specific feed to clinker ratio based on reconciled clinker production determined for accounting purposes and recorded feed rates. This ratio must be updated monthly. Note that if this ratio changes at clinker reconciliation, you must use the new ratio going forward, but you do not have to retroactively change clinker production rates previously estimated.

2. Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production (or feed mass flow if applicable). During each quarter of source operation, you must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production (or feed mass flow).

3. Record the daily clinker production rates and kiln feed rates; and

4. Develop an emissions monitoring plan.

APPENDIX 3B - Monitoring
Continuous Emission Monitoring/Continuous Emission Rate Monitoring System (CEMS/CERMS)

1. Within 30 calendar days after commencement of initial start-up, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS/CERMS.

2. Within 150 calendar days after commencement of initial start-up, the permittee shall submit two copies of a complete test plan for the CEMS/CERMS to the AQD for approval.

3. Within 180 calendar days after commencement of initial start-up, the permittee shall complete the installation and testing of the CEMS/CERMS.

4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS/CERMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table:

Pollutant	Applicable PS
NO_x/SO_2	2
CO_2/O_2	3
CO	4
CERMS	6

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

6. The CEMS/CERMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and Appendix B to 40 CFR Part 60.

7. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS/CERMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F of 40 CFR Part 60).

8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:

   a) A report of each exceedance above the limits specified in the Emission Limits of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b) A report of all periods of CEMS/CERMS downtime and corrective action.
   c) A report of the total operating time of the kiln during the reporting period.
   d) A report of any periods that the CEMS/CERMS exceeds the instrument range.
   e) If no exceedances or CEMS/CERMS downtime occurred during the reporting period, the permittee shall report that fact.

9. The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

APPENDIX 4 – Recordkeeping for Actual to Projected-Actual Applicability Test

All information in this Appendix shall be maintained pursuant to R 336.2818 and 40 CFR 52.21(r)(6)(i) for ten years after the emission unit(s) identified in Table C resume normal operations, and shall be provided to the Department for the first year and thereafter made available to the Department upon request.

A. Project Description: St. Marys Cement, Inc. is an existing Portland cement manufacturing facility, located at 16000 Bells Bay Road, Charlevoix, Michigan. The plant consists of quarry operations, primary and secondary crushing systems, raw material feed receiving and storage areas, raw mill grinding and drying, coal and petroleum coke fuel receiving/storage/crushing areas, a calciner (where calcining begins and raw feed preheating occurs), a rotating kiln, clinker cooler, clinker storage systems, finish mill systems, and a cement storage and shipping facility. The raw mill, calciner and kiln are identified as an "in-line kiln system."

St. Marys Cement, Inc. is proposing to upgrade their existing Portland cement plant. The upgrade will result in an increase in the plant's capability to produce Potland cement from a current nominal design capacity of 4,480 short tons of clinker per day to a nominal 6,000 short tons of clinker per day, based on a 12-month rolling average, which will result in an increased production design capacity by approximately 24 percent. The following is a list of the proposed changes: replace the existing gravity clinker cooler, the existing rotating kiln will be replaced with a shorter kiln shell, a new solid fuel processing mill added to the existing coal processing mill, a new raw feed blending silo with associated material handling equipment (currently included in PTI 115-15), a new horizontal rotary finish ball mill will be added to the three existing mills, miscellaneous conveyance equipment will be installed and upgrades to existing conveyance equipment will be made.

B. Applicability Test Description: Hybrid Test

C. Limitations: 6,300 tons of clinker per day from EUINLINEKILN on a 30-day rolling average and 6,000 tons of clinker per day from EUINLINEKILN on a 12-month rolling time period.

Table C

		Emissions (tpy)			
Emission Unit/Flexible Group ID	**Pollutant**	**Baseline Actual**	**Projected Actual**	**Excluded**	**Reason for Exclusion**
EUINLINEKILN	SO_2	2,828	4,037	1,176	Capable of accommodating clinker production rate. (The maximum 30 consecutive day clinker production during the baseline period of 02/12/2008 through 02/11/2010 was determined and annualized for a 12-month period.)

APPENDIX 5 - Testing Procedures

The permittee shall use the following approved test plans, procedures, and averaging to measure the pollutant emissions for the applicable requirements referenced in EUINLINEKILNS.

SAMPLING PLAN FOR
Alternate Fuels

I. Definitions

A. Fuels

1. Asphalt Flake is defined as asphalt shingles with aggregate material removed, in any form that contains no asbestos and has no appreciable amount of paint, stain, or other types of coatings.

2. Recyclable Plastic is defined as resin code numbers 1, 2, 4, 5, 6, and 7; which contains no polyvinyl chloride (PVC) and contains no more than 15,000 ppmw of chlorine.

B. Batch

1. A quantity of material contained in one storage unit (i.e., stockpile, barge, etc.) or production run with a maximum volume of 5000 tons (or other volume as approved by the District Supervisor).

C. Source

1. A process that generates material which can be used as alternate fuels.

D. Supplier

1. An entity with different ownership and/or address.

E. Independent Laboratory

1. Any independent laboratory used by the facility for sampling analyses shall develop a Quality Assurance Plan (QAP). Detailed in the QAP shall be the Quality Assurance/Quality Control (QA/QC) procedures, sample handling, storage, chain of custody procedures, analytical methods for all analyses, a description of the laboratory instrumentation, and the instrumental detection limits. The analytical methods used by the independent laboratory should be consistent with the methods used by the Department. The facility shall maintain a copy of the approved QAP on site or at the corporate offices and be available for AQD inspection.

II. Permittee requirements for alternate materials for use as a fuel under federal and state regulations.

A. Pre-delivery Sampling Plan - Asphalt Flakes

1. When the supplier creates a new batch of asphalt flakes, a sample of the asphalt flakes shall be collected during the batch creation and labeled with the unique batch identification number. The sample shall be sent to an independent laboratory to verify the maximum levels of Chromium, Lead, Manganese, and Mercury. The maximum allowable levels are as follows:

Contaminant	Maximum Allowable Level
Chromium	1000 ppmw
Lead	1000 ppmw
Manganese	2000 ppmw
Mercury	121 ppbw

B. Delivery Documentation:

1. **Asphalt Flakes**
   The following documentation shall be included with each delivery of asphalt flakes and kept on file and made available to the AQD upon request:
   a. **Certification of Quality**
      Certification from the supplier stating the asphalt flakes contain no asbestos and no appreciable amount of paint, stain, or other types of coatings.
   b. **Sampling Analysis Report**
      Results of the approved sampling analysis with all associated analytical data from an approved laboratory. The results shall correspond to the unique batch identification number given at the time the batch was sampled.
   c. **Manifest**
      Supplier name, source, unique batch identification number, date of delivery, and approximate deliverable weight of the asphalt flakes.

2. **Recyclable Plastic**
   The following documentation shall be included with each delivery of recyclable plastic and kept on file and made available to the AQD upon request:
   a. **Certification of Quality**
      Certification from the supplier stating the recyclable plastic is numbers 1, 2, 4, 5, 6 or 7, which contains no PVC.
   b. **Sampling Analysis Report**
      Not required upon delivery. However, if the supplier certification does not adequately provide that the recyclable plastic contains no PVC then the permittee shall be required to provide a sampling analysis as required in II.C.2 of this sampling plan.
   c. **Manifest**
      Supplier name, source, unique batch identification number, date of delivery, and approximate deliverable weight of the recyclable plastic.

C. Batch Delivery Sampling Plan:

1. **Asphalt Flakes**
   a. Each batch of asphalt flakes shall contain a unique batch identification number. A sufficient amount of material shall be collected to provide three (3) samples, from the delivery vessel, prior to mixing with material in on-site storage, and labeled with the unique batch identification number. If required by the AQD District Supervisor, the sample shall be sent to an independent laboratory to verify the maximum allowable levels of Chromium, Lead, Manganese, and Mercury, as described in II.A.1 of this sampling plan. The remaining material shall be maintained by the facility until the end of the calendar year.
   b. A record of all batches received including the sampling analysis report with any associated analytical data from the independent laboratory, shall be kept on file and made available to the AQD upon request.

2. **Recyclable Plastic**
   a. Each batch of recyclable plastic shall contain a unique batch identification number. A sufficient amount of material shall be collected to provide three (3) samples, from the delivery vessel, prior to mixing with material in on-site storage, and labeled with the unique batch identification number. If required by the AQD District Supervisor, a sample shall be sent to an independent laboratory to verify the maximum allowable level of Chlorine is no more than 15,000 ppmw. The material shall be maintained by the facility until the end of the calendar year.
   b. A record of all batches received including any sampling analysis report with any associated analytical data from the independent laboratory, shall be kept on file and made available to the AQD upon request.

APPENDIX 6 – Emission Calculations
Procedures to Monitor Mercury Emissions

The Permittee shall determine mercury emissions on a monthly and 12-month rolling time period, as determined at the end of each calendar month, for the purpose of determining compliance with the mercury emission limit. The following material balance method shall be used:

1. Every two weeks samples of the kiln raw feed used, fuels used, wasted cement kiln dust (CKD), clinker, and synthetic gypsum shall be collected during normal operating conditions.

2. Samples of each material shall be composited and analyzed to determine the total monthly mercury concentration of the materials being processed.

3. All sampling and methods used to determine mercury concentrations shall be in accordance with U.S. EPA sampling and analysis protocols and approved by the AQD.

4. The equation below shall be used to calculate monthly mercury emissions:

MCMI – MCMO = MCME

Where:

MCMI = The Monthly Calculated Mercury Input (pounds per month) – The mercury entering the process shall be the sum of the product of the mercury concentration of the kiln raw feed used and the mass of the kiln raw feed used and the product of the mercury concentration of each fuel used and the mass of each fuel used during the month.

MCMO = The Monthly Calculated Mercury Output (pounds per month) – The mercury leaving the process shall be the sum of the products of the mercury concentration of the clinker, permanently removed CKD, and synthetic gypsum for the month, and the respective mass of each material produced for the month.

MCME = The Monthly Calculated Mercury Emissions (pounds per month) - The mass of mercury emitted from FG Mercury shall be the Monthly Calculated Mercury Input minus the Monthly Calculated Mercury Output. The consecutive 12-month mercury emission rate shall be the sum of the individual monthly records for the current month and the preceding eleven months (pounds of mercury per 12-month rolling time period) after 12 months of initial data has been collected.

Production, sampling and testing records, including calculations and data, shall be completed and maintained by the permittee for 5 years and shall be made available to the Department upon request.

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN: 1559	Section Number (if applicable):

1. Additional Information ID
AI-PartH

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

H2. Update the name of EUCLINKERCOOL to EUCLINKERCOOLER
H3. New EUs and Flexible Groups as described in PTIs 115-15 and 140-15. New EU for NSPS emergency generator added in 2018.
H4. Add CI ICE NSPS requirements (40 CFR Part 60 Subpart IIII) for new emergency engine
Add Portland Cement MACT (40 CFR Part 63 Subpart LL) requirements to EUINLINEKILN

See Marked up Copy of ROP for updates and Changes

I. Background

A. Emissions Unit

Description:	The in-line raw mill kiln system uses a proportioning system for grinding and mixing limestone, shale, sand, cement kiln dust (CKD), and overburden, in addition to sourced slag, calcium, aluminum, iron and silica
Identification:	EUINLINEKILN
Facility:	St. Mary's Cement U.S. LLC – Charlevoix, Michigan

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Permit No.:	PTI 140-15C	
Emission Limits:		
Particulate Matter (PM):	PM:	0.25 pound per 1000 lb exhaust gas (lb/1000 lb exhaust) 0.07 pounds per ton of clinker produced (lb/ton clinker) based on a 30-day rolling average.
	PM10/PM2.5:	7,200 lb/day - Calendar Day Average
	PM10/PM2.5:	4,800 lb/day - Calendar Day Average – Raw Mill On
Monitoring and Record Keeping Requirements:	PM continuous parameter monitoring system (CPMS) in accordance with procedures in 40 CFR Part 63 Subpart LLL and a preventative maintenance program.	

C. Control Technology

Baghouse Dust Collector for PM control

II. Monitoring Approach

The key elements of the monitoring approach are presented below:

A. Indicator for Meeting Emission Limit

A site-specific operating limit (SSOL) is established annually pursuant to 40 CFR Part 63 subpart LLL. The average PM CPMS value recorded during the PM compliance test and the average PM result from the PM Compliance Test are used to establish the SSOL. If the SSOL is exceeded at any time a new PM compliance test must be completed within 30 days to verify compliant emissions and establish a new SSOL.

B. Measurement Approach

A Sick SP100 light scattering type PM CPMS is installed at a representative location downstream of the baghouse.

C. Indicator Range

PM:	The PM CPMS is used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test is repeated annually, with no more than 13 calendar months from the previous test.

D. Performance Criteria

Monitoring Data Representativeness:	Sick SP 100 continuously monitors the light scattered by the particles. The monitor output is in mg/m3 which is recorded by the facility's data acquisition handling system.
Verification of Monitoring Operational Status:	Data is not recorded during non-operation of monitoring equipment. • The PM CPMS is installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR Part 60.
QA/QC Practices and Criteria:	• QA/QC completed in accordance with facility QA/QC plan.
Monitoring Frequency and Collection Procedure:	Monitoring data is measured continuously and recorded in the data acquisition handling system (DAHS). Exceedance of SSOL triggers an alarm and corrective actions will be documented.

For any exceedance of the 30-operating day SSOL average value SMC will:

a. Within 48 hours of the exceedance, visually inspect the air pollution control device (APCD);
b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days.

Additional testing is not required for any exceedances that occurs between the time of the original exceedance and the PM emissions compliance test.

E. Quality Improvement Plan Threshold

A QIP will be developed upon request of the EGLE-AQD if an excessive number of excursions have been reported.

III. Justification

A. Background

The in-line raw mill kiln system uses a proportioning system for grinding and mixing limestone, shale, sand, cement kiln dust (CKD), and overburden, in addition to sourced slag, calcium, aluminum, iron and silica.

Particulates are controlled by a baghouse dust collector and monitored with a PM CPMS. The measuring system works according to the scattered light measurement principle (i.e., forward dispersion). A laser diode beams the dust particles in the gas flow with modulated light in the visual range (wavelength approximately 650 nanometers [nm]). A highly sensitive detector registers the light scattered by the particles, amplifies the light electrically, and feeds it to the measuring channel of a microprocessor as a central part of the measuring, control, and evaluation electronics. The measuring volume in the gas duct is defined through the intersection of the sender beam and the receiving aperture.

B. Rationale for Selection of Performance Indicator

PM CPMS measures changes in particulate levels on a continuous basis. The performance test is used to correlate the PM CPMS output in mg/m3 to actual PM emissions in lb/ton annually. The SSOL is used as the PM compliance demonstration for 0.07 lb / ton of clinker produced.

The PM limit of 0.25 lb/1000 lb exhaust gas equates to pound per ton as follows:

PM (lb / hr) = 0.25 lb/1000 lb x 465,689 cf/min x 0.075 lb/cf x 60 min / hr

= 523.9 lb/hr

PM (lb/ton) = 523.9 lb/hr /250 tons clinker /hr

= 2.1 lb/ton clinker

Since the PM NESHAP Limit of 0.07 lb/ton is less than the equivalent limit of 0.25 lb/1000 lb, compliance with the SSOL ensures compliance with lb/1000 lb exhaust limit.

PM10 and PM2.5 are a function of condensable emissions which are dependent on sulfur, ammonia, and other acid gases. The bag house does not control condensable emissions. PM10 and PM2.5 lb/ton clinker emission rates are established annually during the PM performance test. The emission rates are used by the DAHS to calculate daily PM10 and PM2.5 emissions for comparison against the daily limit..

C. Rationale for Selection of Indicator Level

A site-specific operating limit (SSOL) is established annually pursuant to 40 CFR Part 63 subpart LLL using PM compliance test data which is submitted to the AQD. If the PM performance test demonstrates the PM emission levels to be below 75 percent of 0.02 lb/ton clinker, the average PM CPMS value recorded during the PM compliance test, the digital equivalent of zero output from the PM CPMS, and the average PM result of the compliance test is used to establish the SSOL as follows:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} X_1 \, , \bar{y} = \frac{1}{n}\sum_{i=1}^{n} Y_1$$

X_1 = The PM CPMS data points for the three runs constituting the performance test.

Y_1 = The PM concentration value for the three runs constituting the performance test.

n = The number of data points.

$$\mathbf{R} = \frac{Y_1}{(X_1 - z)}$$

R = The relative lb/ton-clinker per milliamp or digital equivalent for your PM CPMS.

Y_1 = The three-run average lb/ton-clinker PM concentration.

X_1 = The three-run average milliamp or digital equivalent output from your PM CPMS.

z = The digital equivalent of the instruments zero.

$$O_1 = z + \frac{0.75(L)}{R}$$

O_1 = PM CPMS SSOL on a 30-day rolling average, in mg/m3.

L = Emission limit expressed in lb/ton clinker. (0.02 lb/ton clinker)

z = The digital equivalent of the instruments zero.

R = The relative lb/ton-clinker per milliamp, or digital equivalent, for your PM CPMS, from Equation above.

0.75 = Constant representing 75% of the limit

If the PM compliance test demonstrates the PM emission levels to be at or above 75 percent of the 0.02 lb/ton clinker emission limit the average PM CPMS value recorded during the PM compliance test is used establish the SSOL.

$$\overline{x} = \frac{1}{n}\sum_{i=1}^{n} X_1$$

X_1 = The SSOL which is the PM CPMS data points for the three runs constituting the performance test.

SMC will verify an existing or establish a new operating limit after each repeated performance test. The performance test is repeated at least annually, and SMC reassesses and adjusts the site-specific operating limit in accordance with the results of the performance test.

I. Background

A. Emissions Unit

Description:	Solid fuel processing mill to allow for a higher throughput for processing properly sized solid fuels due to increased production capacity
Identification:	EUSOLIDFUELSYSTEM
Facility:	St. Mary's Cement U.S. LLC – Charlevoix, Michigan

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Permit No.:	PTI 140-15C
Emission Limits:	
Particulate Matter (PM):	PM: 0.01 grains per dry standard cubic foot (gr/dscf) PM10: 3.93 pounds per hour (lb/hr) PM2.5: 1.86 pounds per hour (lb/hr)
Visible Emissions:	EUSOLIDFUELSYSTEM shall maintain 6-minute average of less than (or equal to) 10% opacity
Monitoring and Record Keeping Requirements:	A Bag Leak Detection System (BLDS) and preventive maintenance program

C. Control Technology

Baghouse Dust Collector for PM Control

II. Monitoring Approach

The key elements of the monitoring approach are presented below:

A. Indicator for Meeting Emission Limit

The TRIBO Model U3600 provides a digital output signal to the SMCs plant network system. . An alarm is triggered when a 6-minute average signal which is current 30 units. The 6-minute average corresponds to the 6-minute opacity average.

B. Measurement Approach

An Auburn Systems TRIBO Model U3600 triboelectric monitor is installed in the baghouse exhaust in accordance with procedures outlined in the Auburn Systems, LLC Instruction Manual. The installation and setup procedures are presented in Chapter 2 of the Instruction Manual.

C. Indicator Range

Triboelectric signal:	The alarm settings are established during the initial setup period and are reviewed annually. An excursion is currently defined as a signal greater than 30 units on the BLDS scale averaged over 6 minutes. The excursion set point may be adjusted during the annual review

D. Performance Criteria

Monitoring Data Representativeness:	As dust particles collide with, or closely pass by a probe, charge transfers occur. The TRIBO Model U3600 detects the signal created by the changes in particulate concentration, as in the onset of a bag leak or an increase or decrease in flow.
Verification of Monitoring Operational Status:	Data is not used during non-operation of monitoring equipment. • The BLDS is installed, calibrated, maintained, and operated in according to the procedures outlined in the Auburn Systems, LLC Instruction Manual. • No zero or drift adjustments are required • Automatic probe contamination check
QA/QC Practices and Criteria:	• Annual determination if settings need to be adjusted. • Quarterly seasonal variation adjustments (if necessary) • Monthly sensor probe and insulator inspection and cleaning; response test. • After corrective action is taken, the affected monitor will be tracked to verify that the corrective action was effective.
Monitoring Frequency and Collection Procedure:	The BLDS output is stored on a computer at the facility. The output is continuously monitored by the alarm mechanism and a data point is stored at least every 10 seconds. If an alarm is triggered it must be responded to within 8 hours. An alarm and its subsequent corrective actions will be documented on the Bag Leak Detection Alarm Log.

E. Quality Improvement Plan Threshold

A QIP will be developed upon request of the EGLE-AQD if an excessive number of excursions have been reported.

III. Justification

A. Background

The Solid fuel processing mill will allow for a higher throughput for processing properly sized solid fuels due to increased production capacity. The processed fuel will then be transported to the existing two solid fuel storage silos.

Particulates are controlled by a baghouse dust collector and monitored with a BLDS. The measuring system works by detecting changes in charge signals. As dust particles collide with, or closely pass by a probe, charge transfers occur. TRIBO Model U3600 detects the signal created by the changes in particulate concentration, as in the onset of a bag leak or an increase or decrease in flow. The TRIBO Model U3600 combines the benefits of using DC and AC indication signals, providing a superior reliable and repeatable signal, with electrical interference resistance - even in harsh industrial environments. SMC can activate operational functions such as alarms and relays or can generate continuous 4-20 mA or digital signals for trending and recording purposes.

B. Rationale for Selection of Performance Indicator

Due to the EUSOLIDFUELSYSTEM needing to have an opacity of 10% or less an opacity meter is not sufficient to monitor minor fluctuations in the bag house. A BLDS using triboelectricity is installed allowing better monitoring at such low controlled levels and to allow for scheduling of preventative maintenance.

As particles in the baghouse exhaust gas stream collide with the senor rod mounted inside of the exhaust duct, an electrical charge is transferred generating a small current that is measure and amplified by the monitor. The processing electronics are configured to produce a continuous output and alarms can be set. The bag leak detection system has the capability for dual alarms. The High-High is set at 30 units on the BLDS scale, which is the excursion set point.

The signal produced by the triboelectric monitor is proportional to the particulate mass flow. The signal can be affected by changes in exhaust gas velocity or particle size, however in a bag house these factors will not vary significantly. This means an increase in the triboelectric signal indicates an increase in particulate emissions from the bag house.

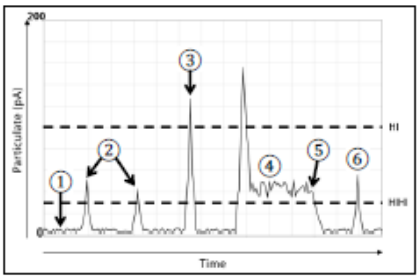
PM10 and PM2.5 are a function of condensable and filterable particulate matter. The bag house does not control condensable emissions.

C. Rationale for Selection of Indicator Level

The initial adjustment procedures for all the BLDS are described in the respective Instruction Manuals. Sensitivity is set so a typical cleaning peak does not trigger an alarm. An example of typical dust collector readings from the is presented here:

Example of Typical Baghouse/Dust Collector Readings

① Normal baseline.
② Normal peaks from cleaning cycles.
③ Filter wear causes an increase in the cleaning peak. Early warning alarm of filter leak-through (HI alarm).
④ Filter leak increases, causing a baseline shift. HIHI alarm triggered.
⑤ Filter replaced.
⑥ Baseline and cleaning peaks return to normal levels.



The sharp peaks on the BLDS output represent the brief increase in emission immediately following the baghouse cleaning cycle. For the alarms, a 6-minute average is used to align with the opacity standard, and so the alarm will not activate due to short spikes that are not associated with a cleaning cycle and do not indicate broken bags, such as a spike due to a small amount of PM that accumulates on the duct wall and then breaks free.

I. Background

A. Emissions Unit

Description:	The clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including clinker cooler, clinker heat exchanger, and fabric filter baghouses.
Identification:	EUCLINKERCOOL
Facility:	St. Mary's Cement U.S. LLC – Charlevoix, Michigan

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Permit No.:	PTI 140-15C
Emission Limits:	
Particulate Matter (PM):	PM: 0.02 pounds per ton of clinker throughput (lb/ton clinker). PM10 & PM 2.5: 5.0 pounds per hour (lb/hr)
Monitoring and Record Keeping Requirements:	PM continuous parameter monitoring system (CPMS) in accordance with procedures in 40 CFR Part 63 Subpart LLL and a preventative maintenance program.

C. Control Technology

Baghouse Dust Collector for PM control

II. Monitoring Approach

The key elements of the monitoring approach are presented below:

A. Indicator for Meeting Emission Limit

A site-specific operating limit (SSOL) is established annually pursuant to 40 CFR Part 63 subpart LLL. The average PM CPMS value recorded during the PM compliance test and the average PM result from the PM Compliance Test are used to establish the SSOL. If the 30 operating day PM SSOL is exceeded a new PM compliance test must be completed within 30 days to verify compliant emissions and establish a new SSOL.

B. Measurement Approach

A Sick SP100 light scattering type PM CPMS is installed at a representative location downstream of the baghouse.

C. Indicator Range

PM:	The PM CPMS is used to establish a site-specific operating limit corresponding to the results of the performance test demonstrating compliance with the PM limit. The performance test is repeated annually, with no more than 13 calendar months from the previous test.

D. Performance Criteria

Monitoring Data Representativeness:	Sick SP 100 continuously monitors the light scattered by the particles. The monitor output is in mg/m3 which is recorded by the facility's data acquisition handling system.
Verification of Monitoring Operational Status:	Data is not recorded during non-operation of monitoring equipment. • The PM CPMS is installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR Part 60.
QA/QC Practices and Criteria:	• QA/QC completed in accordance with facility QA/QC plan.
Monitoring Frequency and Collection Procedure:	Monitoring data is measured continuously and recorded in the data acquisition handling system (DAHS). Exceedance of SSOL triggers an alarm and corrective actions will be documented.

For any exceedance of the 30-operating day SSOL average value SMC will:

a. Within 48 hours of the exceedance, visually inspect the air pollution control device (APCD);
b. If inspection of the APCD identifies the cause of the exceedance, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and
c. Within 30 days of the exceedance or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify or re-establish the PM CPMS operating limit within 45 days.

   Additional testing is not required for any exceedances that occurs between the time of the original exceedance and the PM emissions compliance test.

E. Quality Improvement Plan Threshold

A QIP will be developed upon request of the EGLE-AQD if an excessive number of excursions have been reported.

III. Justification

A. Background

The clinker cooler consists of equipment associated with the cooling of clinker and the treatment of the cooler gases, including clinker cooler, clinker heat exchanger, and fabric filter baghouses.

Particulates are controlled by a baghouse dust collector and monitored with a PM CPMS. The measuring system works according to the scattered light measurement principle (i.e., forward dispersion). A laser diode beams the dust particles in the gas flow with modulated light in the visual range (wavelength approximately 650 nanometers [nm]). A highly sensitive detector registers the light scattered by the particles, amplifies the light electrically, and feeds it to the measuring channel of a microprocessor as a central part of the measuring, control, and evaluation electronics. The measuring volume in the gas duct is defined through the intersection of the sender beam and the receiving aperture.

B. Rationale for Selection of Performance Indicator

PM CPMS measures changes in particulate levels on a continuous basis. An annual performance test is used to correlate the PM CPMS output in mg/m3 to actual PM emissions in lb/ton annually. The SSOL is used as the PM compliance demonstration for 0.02 lb/ton of clinker produced.

PM10 and PM2.5 are a function of condensable and filterable particulate matter. The bag house does not control condensable emissions. Clinker Coolers have negligible emissions of condensable PM, therefore the PM10 and PM2.5 emissions limits were established based on filterable PM limit of 0.02 lb/ton clinker as follows:

PM10 or PM2.5 (lb/ton) = 0.02 lb/ton clinker X 250 ton clinker/hr

= 5 lb/hr

Since the PM NESHAP Limit of 0.02 lb/ton is equivalent to the limit of hourly PM10 or PM2.5 limits, compliance with the SSOL ensures compliance with PM10 and PM2.5 is measured by the CPMS.

C. Rationale for Selection of Indicator Level

A site-specific operating limit (SSOL) is established annually pursuant to 40 CFR Part 63 subpart LLL using PM compliance test data which is submitted to the AQD. If the PM performance test demonstrates the PM emission levels to be below 75 percent of 0.02 lb/ton clinker, the average PM CPMS value recorded during the PM compliance test, the digital equivalent of zero output from the PM CPMS, and the average PM result of the compliance test is used to establish the SSOL as follows:

$$\overline{x} = \frac{1}{n}\sum_{i=1}^{n} X_1 \, , \overline{y} = \frac{1}{n}\sum_{i=1}^{n} Y_1$$

X_1 = The PM CPMS data points for the three runs constituting the performance test.

Y_1 = The PM concentration value for the three runs constituting the performance test.

n = The number of data points.

$$\mathbf{R} = \frac{Y_1}{(X_1 - z)}$$

R = The relative lb/ton-clinker per milliamp or digital equivalent for your PM CPMS.

Y_1 = The three-run average lb/ton-clinker PM concentration.

X_1 = The three-run average milliamp or digital equivalent output from your PM CPMS.

z = The digital equivalent of the instruments zero.

$$O_1 = z + \frac{0.75(L)}{R}$$

O_1 = PM CPMS SSOL on a 30-day rolling average, in mg/m3.

L = Emission limit expressed in lb/ton clinker. (0.02 lb/ton clinker)

z = The digital equivalent of the instruments zero.

R = The relative lb/ton-clinker per milliamp, or digital equivalent, for your PM CPMS, from Equation above.

0.75 = Constant representing 75% of the limit

If the PM compliance test demonstrates the PM emission levels to be at or above 75 percent of the 0.02 lb/ton clinker emission limit the average PM CPMS value recorded during the PM compliance test is used establish the SSOL.

$$\overline{x} = \frac{1}{n}\sum_{i=1}^{n} X_1$$

X_1 = The SSOL which is the PM CPMS data points for the three runs constituting the performance test.

SMC will verify an existing or establish a new operating limit after each repeated performance test. The performance test is repeated at least annually, and SMC reassesses and adjusts the site-specific operating limit in accordance with the results of the performance test.

I. Background

A. Emissions Unit

Description:	Horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.
Identification:	EUFINISHMILL4
Facility:	St. Mary's Cement U.S. LLC – Charlevoix, Michigan

B. Applicable Regulation, Emission Limit, and Monitoring Requirements

Permit No.:	PTI 140-15C
Emission Limits:	
Particulate Matter (PM):	PM: 0.15 pound per 1000 lb exhaust gas (lb/1000 lb exhaust) PM10/PM2.5: 6.24 pounds per hour (lb/hr)
Visible Emissions:	EUFINISHMILL4 shall maintain 6-minute average of less than (or equal to) 10% opacity
Monitoring and Record Keeping Requirements:	A Bag Leak Detection System (BLDS) and preventive maintenance program

C. Control Technology

Baghouse Dust Collector for PM Control

II. Monitoring Approach

The key elements of the monitoring approach are presented below:

A. Indicator for Meeting Emission Limit

The TRIBO Model U3600 provides a digital output signal to the SMCs plant network system. An alarm is triggered when a 6-minute average signal which is current 40 units. The 6-minute average corresponds to the 6-minute opacity average.

B. Measurement Approach

An Auburn Systems TRIBO Model U3600 triboelectric monitor is installed in the baghouse exhaust in accordance with procedures outlined in the Auburn Systems, LLC Instruction Manual. The installation and setup procedures are presented in Chapter 2 of the Instruction Manual.

C. Indicator Range

Triboelectric signal:	The alarm settings are established during the initial setup period and are reviewed annually. An excursion is currently defined as a signal greater than 40 units on the BLDS scale averaged over 6 minutes. The excursion set point may be adjusted during the annual review.

D. Performance Criteria

Monitoring Data Representativeness:	As dust particles collide with, or closely pass by a probe, charge transfers occur. The TRIBO Model U3600 detects the signal created by the changes in particulate concentration, as in the onset of a bag leak or an increase or decrease in flow.
Verification of Monitoring Operational Status:	Data is not used during non-operation of monitoring equipment. • The BLDS is installed, calibrated, maintained, and operated in according to the procedures outlined in the Auburn Systems, LLC Instruction Manual. • No zero or drift adjustments are required • Automatic probe contamination check
QA/QC Practices and Criteria:	• Annual determination if settings need to be adjusted. • Quarterly seasonal variation adjustments (if necessary) • Monthly sensor probe and insulator inspection and cleaning; response test. • After corrective action is taken, the affected monitor will be tracked to verify that the corrective action was effective.
Monitoring Frequency and Collection Procedure:	The BLDS output is stored on a computer at the facility. The output is continuously monitored by the alarm mechanism and a data point is stored at least every 10 seconds. If an alarm is triggered it must be responded to within 8 hours. An alarm and its subsequent corrective actions will be documented on the Bag Leak Detection Alarm Log.

E. Quality Improvement Plan Threshold

A QIP will be developed upon request of the EGLE-AQD if an excessive number of excursions have been reported.

III. Justification

A. Background

EUFINISHMILL4 is a horizontal finish mill used to grind clinker with gypsum and other additives to produce cement products.

Particulates are controlled by a baghouse dust collector and monitored with a BLDS. The measuring system works by detecting changes in charge signals. As dust particles collide with, or closely pass by a probe, charge transfers occur. TRIBO Model U3600 detects the signal created by the changes in particulate concentration, as in the onset of a bag leak or an increase or decrease in flow. The TRIBO Model U3600 combines the benefits of using DC and AC indication signals, providing a superior reliable and repeatable signal, with electrical interference resistance - even in harsh industrial environments. SMC can activate operational functions such as alarms and relays or can generate continuous 4-20 mA or digital signals for trending and recording purposes.

B. Rationale for Selection of Performance Indicator

Due to the EUFINISHMILL4 needing to have an opacity of 10% or less an opacity meter is not sufficient to monitor minor fluctuations in the bag house. A BLDS using triboelectricity is installed allowing better monitoring at such low controlled levels and to allow for scheduling of preventative maintenance.

As particles in the baghouse exhaust gas stream collide with the senor rod mounted inside of the exhaust duct, an electrical charge is transferred generating a small current that is measure and amplified by the monitor. The processing electronics are configured to produce a continuous output and alarms can be set. The bag leak detection system has the capability for dual alarms. Only one alarm is currently used and is set at 40 units on the BLDS scale, which is the excursion set point.

The signal produced by the triboelectric monitor is proportional to the particulate mass flow. The signal can be affected by changes in exhaust gas velocity or particle size, however in a bag house these factors will not vary significantly. This means an increase in the triboelectric signal indicates an increase in particulate emissions from the bag house.

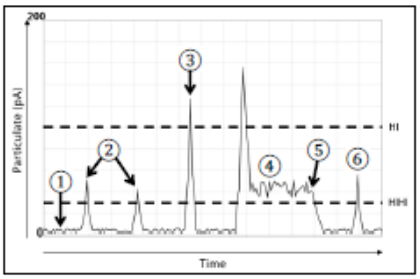
PM10 and PM2.5 are a function of condensable and filterable particulate matter. The bag house does not control condensable emissions. Finish Mills have negligible emissions of condensable PM, therefore the PM10 and PM2.5 emissions limits were established based on filterable PM.

C. Rationale for Selection of Indicator Level

The initial adjustment procedures for all the BLDS are described in the respective Instruction Manuals. Sensitivity is set so a typical cleaning peak does not trigger an alarm. An example of typical dust collector readings from the is presented here:

Example of Typical Baghouse/Dust Collector Readings

① Normal baseline.
② Normal peaks from cleaning cycles.
③ Filter wear causes an increase in the cleaning peak. Early warning alarm of filter leak-through (HI alarm).
④ Filter leak increases, causing a baseline shift. HIHI alarm triggered.
⑤ Filter replaced.
⑥ Baseline and cleaning peaks return to normal levels.



The sharp peaks on the BLDS output represent the brief increase in emission immediately following the baghouse cleaning cycle. For the alarms, a 6-minute average is used to align with the opacity standard, and so the alarm will not activate due to short spikes that are not associated with a cleaning cycle and do not indicate broken bags, such as a spike due to a small amount of PM that accumulates on the duct wall and then breaks free.