

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

B147745265

FACILITY: Holcim (US) Inc. d/b/a Lafarge Alpena Plant		SRN / ID: B1477
LOCATION: 1435 Ford Avenue, ALPENA		DISTRICT: Cadillac
CITY: ALPENA		COUNTY: ALPENA
CONTACT: Travis Weide , Area Environmental & Public Affairs Manager		ACTIVITY DATE: 07/18/2018
STAFF: Kurt Childs	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: 2018 PCE 3 and FCE.		
RESOLVED COMPLAINTS:		

**2018 FCE Partial Compliance Evaluation (PCE) No.3: Site inspection and records review of FG CLINKER SYS, FG FINISH MILL, FG CMT STR LOAD, FG CKD HAND SYS, FG MERCURY, and FG COLDCLEANERS.**

**2018 FCE Summary.**

**MI-ROP-B1477-2012c**

**Introduction**

**This activity report covers the third PCE and 2018 Full Compliance Evaluation of the Holcim (US) d/b/a Lafarge Alpena (Lafarge) Cement Plant. The emission groups covered by this PCE are; FG CLINKER SYS - transfer, storage and blending of clinker prior to finish grinding; FG FINISH MILL - grinding of blended clinker into Portland cement; FG CMT STR LOAD - storage and bulk loading of Portland cement for ship, rail and truck transportation; FG CKD HAND SYS - transfer, storage, re-use and disposal of collected cement kiln dust; FG MERCURY- mercury emission limits and requirements for specific emission units at the facility; and the air pollution control devices associated with each Flexible Group.**

**On July 17 and 18, 2018 AQD staff Kurt Childs met with Travis Weide of Lafarge to conduct the PCE of the Alpena plant as well as to attend stack testing of the FG CLINK COOL. Brian Joyce has been promoted and is no longer at the Alpena plant. This inspection was an unannounced though the stack testing was a scheduled event.**

**Prior the inspection AQD staff made observations from off-site. The weather both days was mostly sunny, temperatures in the 70's with winds from the northwest at 15 mph on the 17<sup>th</sup> and from the south at 5 mph on the 18<sup>th</sup>. I observed the Kiln stacks and several other stacks from around the plant. Four of the five kilns were operating, Kiln 23 was down. There was an attached water vapor plume from the KG6 wet FGD stack that was rising but no visible emissions were observed at the tail of the plume. On the 17<sup>th</sup> there were faint brown visible emissions from the Kiln 21 stack.**

**The quarry was also observed. On the 17<sup>th</sup> there was no activity in the quarry at the time of the observation. On the 18<sup>th</sup> quarry operations were observed including vehicle traffic, primary crusher, and secondary crusher. Vehicle traffic in the quarry was raising significant dust which was intermittent and of limited duration based on vehicle activity. Stockpiling of stone from the primary and secondary crushers also generated visible emissions but not significant past the footprint of the storage piles.**

**During the inspection on the 17<sup>th</sup> I observed that the plant roadways had accumulations of rock and dust. Mr. Weide stated that the sweeper had broken down and was waiting for a**

part (due 7/24/18) to be repaired. In the meantime, Lafarge Alpena is using the water truck to manage dust but at the time of the inspection the roads were dry. During the inspection on the 18<sup>th</sup>, Mr. Weide informed me that he had brought this up at their morning meeting. The roads appeared better on the 18<sup>th</sup>.

### FG CLINKER SYS:

The clinker handling system encompasses clinker transport and storage from the clinker coolers to either storage or to FG FINISH. Gypsum, Limestone and CKD can be added to the clinker as needed during this process. As a result, this process consists mainly of conveyors, transfer points, and storage bins and silos. Particulate matter is the air pollutant of concern and emissions are controlled by various dust collectors.

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
VE	10 percent opacity <sup>2</sup>	Six-minute average	FG CLINKER SYS	VE exceeded 10% from open doors at the top and bottom of head pulley 16 conveyor (41 -176?)	VE Monitoring Records 0% opacity recorded in records sampled.
PM	0.02 grain per dry standard cubic foot <sup>2</sup>	Test Protocol	FG CLINKER SYS	NA	Testing not required this review period.
PM	0.10 pound Per 1,000 pounds of exhaust gases calculated on a dry gas basis <sup>2</sup>	Test Protocol	EU CLINK AD/PROP	NA	Testing not required this review period.
PM	13.8 tons per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU CLINK AD/PROP	NA	0.17 to 0.29 tons

### III. PROCESS/OPERATIONAL RESTRICTION(S)

- Dust collectors and covered clinker conveyers are installed, maintained, and operated in a satisfactory manner, with the exception of one section of conveyor cover that was removed during repair of the conveyor belt. According to Mr. Weide, the cover was inadvertently left off following the repair and it requires a crane to put it back in place. This issue was addressed during a plant meeting on the 18<sup>th</sup> and is scheduled to be repaired.

Dust Collector	VE/Reading (% opacity)
EU BLD FUEL PILE: 40-100	0
40-110	0
40-120	0
309DC9	0
309DC10	0
EU CLINK AD/PROP: 41-352	0
41-356	0
41-439	0
41-427	0
41-447	0

- An approved O&M plan dated November 2, 2017 is on file at the Cadillac District office.
- Clinker appears to be stored on-site per PC MACT/O&M Plan including appropriate control measures. Clinker is not stored in open piles.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

- The clinker conveyors, associated with FG CLINKER SYS, were equipped and maintained with covers to minimize fugitive emissions from the conveyors except as noted in III.1 above.

#### V. TESTING/SAMPLING

- Opacity tests of FG CLINKER SYS were conducted in accordance with 40 CFR Part 63, Subparts A and LLL in April 2002. Copies of the test results are on file at the Cadillac District office.

#### VI. MONITORING/RECORDKEEPING

- Visible emissions Method 22 and Method 9 (if necessary) monitoring for FG CLINKER SYS (storage bins, conveying system transfer points, bulk loading and unloading systems) has been conducted as specified in Appendix 3.5 except that dust collectors in EU CLINK AD/PROP were only tested for 6 minutes instead of the 10 minutes required by the

appendix (see attached records). Testing frequency has been reduced to annual in accordance with Appendix 3.5.

2. Method 9 visible emissions readings have not been necessary.

3. and 4. PM and PM10 emission calculations are maintained and are provided upon request (see attached records) or through the MAERS submittal.

**VII. REPORTING**

- 5. The permittee shall submit records of PM and PM10 emissions from FG CLINKER SYS in tons per calendar year to both the AQD Permit Section Supervisor and the AQD District Supervisor within 60 days following the end of each calendar year, if both of the following apply (until January 21, 2018):
  - a. The calendar year actual emissions of either PM and PM10 exceed the baseline actual emissions by a significant amount (see Appendix 7.2); and
  - b. The calendar year actual emissions of either PM and PM10 differ from the pre-construction projection. The pre-construction projection is the sum of the projected actual emissions from each emission unit included in the Actual to Projected Actual Test used for FG CLINKER SYS (see Appendix 7.2). (R 336.2802(4)(c), R 336.2818(4))

This reporting has not been necessary PM and PM10 emissions have not exceeded the baseline amount. The reporting requirement has now expired.

**VIII. STACK/VENT RESTRICTION(S)**

Stack & Vent ID	Maximum Exhaust Dimensions  Diameter  (inches)	Minimum Height Above Ground  (feet)
SV40-120 EU CLINK STR BLD	56.4 <sup>2</sup>	63 <sup>2</sup>
SV40-100 EU CLINK STR BLD  clinker reclaim belt	559  (square inches) <sup>2</sup>	54  Orientation is not unobstructed vertically up <sup>2</sup>
SV 40-110 EU CLINK STR BLD  clinker belt transfer	346  (square inches) <sup>2</sup>	121  Orientation is not unobstructed vertically up <sup>2</sup>

Stack & Vent ID	Maximum Exhaust Dimensions Diameter (inches)	Minimum Height Above Ground (feet)
EU CLINK AD/PROP SV25-825	437  (square inches) <sup>2</sup>	21.3  Orientation is not unobstructed vertically up <sup>2</sup>
EU CLINK AD/PROP SV26-825	437  (square inches) <sup>2</sup>	55.3  Orientation is not unobstructed vertically up <sup>2</sup>

The stacks/vents appeared to meet these specifications at the time of the inspection.

**FG FINISH MILLS**

Finish Mills use ball mills and roll presses to convert clinker, gypsum, limestone and CKD to Portland cement. Cement finishing operations are enclosed in a separate large building within the plant property. The building contains six separate finishing lines (13-15 and 19–21), each centered on a rotating ball mill. Ball mills 20 and 21 are each preceded by a roller press and followed by a separator. Finishing line 19 does not have a roller press but does include a separator. Finish lines 13-15 do not include roller presses and the ball mill and separators are one unit on these lines. Dust control points within the finishing lines include each ball mill and separator and the roller press and lower roller press system (material transfer from conveyor to elevator). Separators are used collect and reclaim the Portland cement. During the inspection we identified and observed each dust collector stack. At that time there were no visible emissions from any of the stacks.

**I. EMISSION LIMITS**

utant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing

VE	10% opacity <sup>2</sup>	Six-minute average	FG FINISH MILLS	0%	VE Monitoring Records 0% opacity recorded in records sampled.
PM-10	1.0 pound per hour <sup>2</sup>	Test Protocol	EU BALL MILL 20 Mill Vent  EU BALL MILL 21 Mill Vent  (Limit applies to each individual emission unit.)	NA	Visible emission observations demonstrate compliance, no stack testing required during review period.
PM-10	10.0 pounds per hour <sup>2</sup>	Test Protocol	EU BALL MILL 20 Separator  EU BALL MILL 21-Separator  (Limit applies to each individual emission unit.)	NA	Visible emission observations demonstrate compliance, no stack testing required during review period.
PM-10	4.1 tons per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU BALL MILL 20 Mill Vent	NA	< 1 ton
PM-10	4.5 tons per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU BALL MILL 21 Mill Vent	NA	< 1 ton

<p><b>PM-10</b></p>	<p><b>44.0 tons per year<sup>2</sup></b></p>	<p><b>12-month rolling time period as determined at the end of each calendar month</b></p>	<p><b>EU BALL MILL 20 Separator</b></p> <p><b>EU BALL MILL 21 Separator</b></p> <p><b>(Limit applies to each individual emission unit.)</b></p>	<p><b>NA</b></p>	<p><b>Visible emission observations demonstrate compliance, no stack testing required during review period.</b></p>
<p><b>PM</b></p>	<p><b>0.15 pounds per 1000 pounds of exhaust gases, calculated on a dry basis<sup>2</sup></b></p>	<p><b>Test Protocol</b></p>	<p><b>EU BALL MILL 20 Mill Vent</b></p> <p><b>EU BALL MILL 20 Separator</b></p> <p><b>EU BALL MILL 21 Mill Vent</b></p> <p><b>EU BALL MILL 21 Separator</b></p> <p><b>(Limit applies to each individual emission unit.)</b></p>	<p><b>NA</b></p>	<p><b>Proper operation of control devices demonstrates compliance, no stack testing required during the review period.</b></p>
<p><b>PM</b></p>	<p><b>0.07 pounds hour<sup>2</sup></b></p>	<p><b>Test Protocol</b></p>	<p><b>EU Roll Press 20 (43-271)</b></p> <p><b>and</b></p> <p><b>EU Roll Press 21 (44-271)</b></p>	<p><b>NA</b></p>	<p><b>Proper operation of control devices demonstrates compliance, no stack testing required during the review period.</b></p>

**II. Material Limits**

**NA**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Dust collectors are installed, maintained, and operated in a satisfactory manner. Each stack was observed during operation and there were no visible emissions.

Dust Collector	VE/Reading (% opacity)
Ball Mill 13, 45-261	0
Ball Mill 14, 45-262	0
Ball Mill 15, 45-264	0
Ball Mill 19, 49-011	0
Ball Mill 19, 49-265	0
Ball Mill 19, 49-269	0
Ball Mill 19, 49-270	0
Ball Mill 20, 43-011	0
Ball Mill 20, 43-269	0
Ball Mill 20, 43-270	0
Ball Mill 21, 44-011	0
Ball Mill 21, 44-269	0
Ball Mill 21, 44-270	0
Roll Press 20, 43-271	0
Roll Press 20, 43-272	0
Roll Press 21, 44-271	0
Roll Press 21, 44-272	0

2. An approved O&M plan dated November 2, 2017 is on file at the Cadillac District office.

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

#### V. TESTING/SAMPLING

1. Opacity tests of FG FINISH MILLS were conducted in accordance with 40 CFR Part 63, Subparts A and LLL in April 2002. Copies of the test results are on file at the Cadillac District office. PM/PM10 emission testing is no longer required for this emission unit.

#### VI. MONITORING/RECORDKEEPING



1. Method 22 and Method 9 (if necessary) visible emissions monitoring and CAM compliance. Method 22 monitoring as specified in Appendix 3.5. VE readings are conducted annually in accordance with Appendix 3.5. except that the readings were only 6 minutes long instead of 10 minutes as required by the Appendix (see attached records). No visible emissions were observed, as a result, Method 9 readings have not been required.

2,3,6,7,10,11. CAM daily Method 22 monitoring for compliance with the PM10 limit. Daily monitoring is conducted (see attached sample records) there were no visible emissions, or the equipment was not operating at the time of the observations and therefore no CAM excursions or exceedences. The records are maintained.

4,5,9. PM and PM10 emission calculations are maintained and are provided upon request (see attached records) or through the MAERS submittal.

**VII. REPORTING**

Reports were reviewed as they were received throughout the FCE period.

**VIII. STACK/VENT RESTRICTION(S)**

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)
1. SV43-269 EU BALL MILL 20 mill vent	80 <sup>2</sup>	108 <sup>2</sup>
2. SV43-270 EU BALL MILL 20 separator	80 <sup>2</sup>	108 <sup>2</sup>
3. SV44-269 EU BALL MILL 21 mill vent	80 <sup>2</sup>	108 <sup>2</sup>
4. SV44-270 EU BALL MILL 21 separator	80 <sup>2</sup>	108 <sup>2</sup>

The mill vent stacks are located inside the separator stacks and both exit on the roof of the finish grind building and appear to meet the height limit.

**IX. OTHER REQUIREMENT(S)**

FG FINISH MILLS appears to be in compliance with the requirements of the PC MACT and NESHAP based on emissions information, testing, recordkeeping and reporting.

**FG CEMENT STR LOAD**

Cement Storage and Bulk Loading of Portland Cement to boats, rail cars, and trucks. EU STORE UNIT 2, Storage Unit 2, various silos that store the cement including transfers of cement to EU BULK LD TRUCK via pump (not in use at the time of the inspection. EU STORE UNIT 3, Storage Unit 3, various silos that store the cement including transfers of the cement to EU BULK LD TRUCK via pump. EU STORE UNIT 4, a set of 30 storage silos that

store, transfer and load cement onto ships and railcars. The cement storage and loading system includes the pneumatic transportation of cement from the finish mills to the cement storage silos and loading of ships, trains, and trucks. Dust collection points include the storage units and loading processes. Storage units 2, 3, and 4 are sets of storage silos and each storage unit has dust control on the silo vents. Loading operations are controlled by cartridge type dust collectors on each loading rig. Controls are on both the conveyor and the loading spout. At the time of the inspection no trains or trucks were being loaded but a ship was in port and was being actively loaded. We observed this operation and did not detect any visible emissions from any of the loading rigs.

#### I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
1. VE	10% opacity <sup>2</sup>	Six-minute average	FG CMNT STR LOAD	0% except 10% from EU BULK LD TRUCK	VE Monitoring Records 0% opacity recorded in records sampled.
2. PM	0.05 pound per 1000 pounds of exhaust gas, calculated on a dry gas basis <sup>2</sup>	Test Protocol	EU STORE UNIT 2	NA	VE Monitoring Records 0% opacity recorded in records sampled.
3. PM	0.15 pound per 1000 pounds of exhaust gas, calculated on a dry gas basis <sup>2</sup>	Test Protocol	EU STORE UNIT 3	NA	VE Monitoring Records 0% opacity recorded in records sampled.

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
4. PM-10	0.2 pound per hour <sup>2</sup>	Test Protocol	EU STORE UNIT 4, Rail  (The limit applies to each individual dust collector of East, Middle, and West)	NA	VE Monitoring Records 0% opacity recorded in records sampled.
5. PM-10	0.8 ton per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU STORE UNIT 4, Rail  (The limit applies to each individual dust collector of East, Middle, and West)	NA	AP-42 Emission calculations
6. PM	0.15 pound per 1000 pounds of exhaust gases, calculated on a dry basis <sup>2</sup>	Test Protocol	EU STORE UNIT 4, Rail  (The limit applies to each individual dust collector of East, Middle, and West)	NA	VE Monitoring Records 0% opacity recorded in records sampled.
7. PM	0.15 pound per 1000 pounds of exhaust gas, calculated on a dry gas basis <sup>2</sup>	Test Protocol	EU STORE UNIT 4, Boat	NA	VE Monitoring Records 0% opacity recorded in records sampled.
8. PM-10	1.5 pounds per hour <sup>2</sup>	Test Protocol	EU BULK LD TRUCK  (Dust collector EU-46-710B)	NA	VE Monitoring Records 0% opacity recorded in records sampled.

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
9. PM-10	6.4 tons per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU BULK LD TRUCK (Dust collector EU-46-710B)	NA	VE Monitoring Records 0% opacity recorded in records sampled.
10. PM	0.15 pound per 1000 pounds of exhaust gases, calculated on a dry basis <sup>2</sup>	Test Protocol	EU BULK LD TRUCK (Dust collector EU-46-710B)	NA	VE Monitoring Records 0% opacity recorded in records sampled.
11. PM	2.33 pounds per hour <sup>2</sup>	Test Protocol	EU BULK LD TRUCK	NA	VE Monitoring Records 0% opacity recorded in records sampled.
12. PM	2.4 tons per year <sup>2</sup>	12-month rolling time period as determined at the end of each calendar month	EU BULK LD TRUCK	NA	Calculations using AQD approved EF.

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Dust collectors are installed, maintained, and operated in a satisfactory manner. A dust collector at the top of the Truck loading silos was exhibiting approximately 10% opacity, repairs were initiated during the course of the inspection.

Dust Collector	VE/Reading
EU STORE UNIT 2: Silo dust collector 50-462	Not in use.
bottom transfer dust collector 570DC01.	Not in use.

EU STORE UNIT 3: South silos dust collector SV50-701	0
north silos dust collector SV50-702	0
bottom transfer dust collector 570DC02.	0
EU STORE UNIT 4: Rail dust collectors 574DC01, 574DC02, 574DC03, 574DC04, 46- 710B.	Not operating at time of inspection.
EU STORE UNIT 4: Silos 50-416 thru 50-426  Rig 1 thru 14 Telescopes DC09 thru DC22  Rig1- 14 Air Slides DC23 thru DC36	0

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

#### V. TESTING/SAMPLING

1. Opacity tests of FG CMT STR LOAD were conducted in accordance with 40 CFR Part 63, Subparts A and LLL in April 2002. Copies of the test results are on file at the Cadillac District office.

#### VI. MONITORING/RECORDKEEPING

1. The permittee shall conduct monthly Method 22 and Method 9 (if necessary) visible emissions monitoring as specified in Appendix 3.5. VE readings are conducted annually in accordance with Appendix 3.5. except that the readings were only conducted for 5 minutes instead of 10 minutes as required by the Appendix (see attached records). No visible emissions were observed so Method 9 readings have not been required.
2. The permittee shall keep, in a satisfactory manner, all Method 22 and Method 9 visible emissions readings from the FG CMT STR LOAD. Method 9 records shall include the time of the visible emissions, cause of the visible emissions, corrective action taken and time of completion of corrective action. Records are maintained as required.
- 3.,4.,5.,. PM and PM10 emission calculations are maintained and are provided upon request (see attached records) or through the MAERS submittal.

#### VII. REPORTING

Reviewed as received.

#### VIII. STACK/VENT RESTRICTION(S)

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV46-710B EU BULK LD TRUCK	24 <sup>2</sup>	50 <sup>2</sup>	R 336.2803, R 336.2804
2. SV574DC01 EU STORE UNIT 4 (Air Slide 1)	6.0 <sup>2</sup>	20 <sup>2</sup>	R 336.2803, R 336.2804
3. SV574DC01 EU STORE UNIT 4 (Air Slide 1)	6.0 <sup>2</sup>	20 <sup>2</sup>	R 336.2803, R 336.2804
4. SV574DC03 EU STORE UNIT 4 (Rail Load Spout)	6.0 <sup>2</sup>	20 <sup>2</sup>	R 336.2803, R 336.2804

The observed stack parameters appear to be consistent with the stack/vent requirements.

#### IX. OTHER REQUIREMENT(S)

FG CMT STR LOAD appears to be in compliance with the requirements of the PC MACT and NESHAP based on emissions information, testing, recordkeeping and reporting.

#### FG CKD HAND SYS

The CKD handling system includes pneumatic transportation of CKD from the kiln baghouses to the pug mill where water is added to the CKD. The mixture is loaded into scraper vehicles and transported to the landfill where it is applied. Dust collection points include KG5 dust return (EU DUST RETURN), KG6 FEED (EU FEED END 6), and the CKD Pug mill (EU CKD PUGMILL).

#### EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
VE	10% opacity	Six-Minute Average	FG CKD HAND SYS	No VE from Dust collector stacks	VE Monitoring Records 0% opacity recorded in records sampled.

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
PM-10	0.02 grain per actual cubic foot of exhaust gas <sup>2</sup>	Test Protocol <sup>a</sup>	EU DUST RETURN 5 (This limit applies to dust tanks 31-006),  EU FEED END 6  (This limit applies to elevators 32-131 and 32-132, and vibrating screen 32-006)	NA	Visible emission observations demonstrate compliance, no stack testing required during review period.
PM	0.10 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis <sup>2</sup>	Test Protocol <sup>a</sup>	FG CKD HAND SYS	NA	Visible emission observations demonstrate compliance, no stack testing required during review period.

**II. MATERIAL USE**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Baghouses and dust collectors are installed, maintained, and operated in a satisfactory manner. No visible emissions were observed from any of the stacks.

Dust Collector	VE/Reading
EU DUST RETURN 5: 31-181	0
31-182	0
31-184	Not observed
31-185	0
31-187	0
EU FEED END 6: 32-171	0

32-173	0
32-172	0
EU CKD PUGMILL: 33-250.	0

2. The O&M Plan/ MAP has been previously approved by the AQD and is on file at the Cadillac District office.

#### V. TESTING/SAMPLING

1. Opacity testing of FG CMNT STR LOAD in accordance with PC MACT requirements (40 CFR 63.1349(b) (2)). Copies of the test results are on file at the Cadillac District office.

#### VI. MONITORING

1. The permittee shall conduct monthly Method 22 and Method 9 (if necessary) visible emissions monitoring as specified in Appendix 3.5. VE readings are conducted annually in accordance with Appendix 3.5. (see attached records). No visible emissions were observed; therefore Method 9 readings have not been required.

2. The permittee shall keep, in a satisfactory manner, all Method 22 and Method 9 visible emissions readings from the FG CMT STR LOAD. Method 9 records shall include the time of the visible emissions, cause of the visible emissions, corrective action taken and time of completion of corrective action. Records are maintained as required.

3-5. PM/PM10 emission calculation records are maintained and were provided upon request (see attached records).

#### VII. REPORTING

6. The permittee shall submit records of PM and PM10 emissions from FG CLINKER SYS in tons per calendar year to both the AQD Permit Section Supervisor and the AQD District Supervisor within 60 days following the end of each calendar year, if both of the following apply (until January 21, 2018):
- The calendar year actual emissions of either PM and PM10 exceed the baseline actual emissions by a significant amount (see Appendix 7.2); and
  - The calendar year actual emissions of either PM and PM10 differ from the pre-construction projection. The pre-construction projection is the sum of the projected actual emissions from each emission unit included in the Actual to Projected Actual Test used for FG CLINKER SYS (see Appendix 7.2). (R 336.2802(4)(c), R 336.2818(4))

This reporting has not been necessary PM and PM10 emissions have not exceeded the baseline amount. The reporting requirement has expired.

#### VIII. STACK/VENT RESTRICTION(S)



Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)
1. SV31-187 Serves EU DUST RETURN 5 dust tank 31-006 (Batman Tank)	24.2 <sup>2</sup>	120 <sup>2</sup>
2. SV32-171 Serves EU FEED END 6 elevators 32-131, 32-132, and vibrating screen 32- 006	33.7 <sup>2</sup>	110 <sup>2</sup>

**IX. OTHER REQUIREMENT(S)**

1. and 2. Comply with PC MACT and NSPS. Vents appear to meet the specified parameters and no changes have been made.

**FG MERCURY**

Mercury emissions generated during the cement production process and emitted through the following Flex Group stacks:

EU RAW MILL 14: SV20-270	EU CLINK COOL 20: SV25-507, SV25-507A
EU RAW MILL 15: SV21-270	EU CLINK COOL 21: SV25-507, SV25-507A
Kiln 19 SV25-289	EU CLINK COOL 22: SV26-252
EU KILN 20: Kiln 20 SV25-290	EU CLINK COOL 23: SV26-258
EU KILN 21: Kiln 21 SV25-291	EU FUEL PULV 19: SV613-01
EU KILN 22: SV26-292A (stack shared by Kilns 22 and 23)	EU FUEL PULV 20: SV623-01
EU KILN 23: SV26-292A (stack shared by Kilns 22 and 23)	EU FUEL PULV 21: SV633-01
EU CLINK COOL 19: SV25-507, SV25- 507A	EU FUEL PULV 22: SV6A3-01
EU FUEL PULV 23: SV6B3-01	

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
Mercury	218.0 lbs/year <sup>2</sup>	12-month rolling time period, as determined at the end of each calendar month	Limit applies to all emission units combined in FG MERCURY	NA	111.38 lbs/yr (most recent 12 mos.)  215.11 lbs/yr. (highest 12 mos. Avg during review period)

**V. TESTING/SAMPLING**

1. Before June 1, 2019, and once every five years thereafter, the permittee shall verify mercury emissions from each emission unit in FG RAW MILL SYS, FG KG5, FG KG6, and FG CLINK COOL, by testing at owner's expense, in accordance with AQD requirements.

Last test: June 2014

Results:

Emission Unit	Average Hg Concentration (lb./hr.)
RG 14	1.74E-06
RG 15	3.26E-06
K19	5.74E-03
K20	2.89E-03
K21	4.69E-03
CC22	2.36E-04
CC23	3.98E-04
CC92N	1.23E-05
CC92S	2.10E-05
WGS	1.31E-03

2. At a minimum of every two weeks, the permittee shall sample mercury concentrations in the fuels, raw materials, and cement kiln dust used to produce clinker per Appendix 3.2 as follows:
- 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.
  - Samples of each material shall be composited and analyzed to determine the total monthly mercury concentration of the materials being processed.
  - All sampling and methods used to determine mercury concentrations shall be in accordance with USEPA sampling and analysis protocols and approved by the AQD.

Sampling is conducted by the quality department at Lafarge and sent out for analysis. The results are used in emissions calculations. Mercury CEMS are in place and operating but not certified yet.

## **VI. MONITORING/RECORDKEEPING**

- The permittee shall calculate, the monthly and 12-month rolling time-period, the mercury emissions from FG MERCURY using Appendix 3.2 as follows at the end of each calendar month.

$$\text{MCMI} - \text{MCMO} = \text{MCME}$$

Emissions calculations are conducted monthly in a spreadsheet (see attachments). The calculations indicate compliance with the annual Mercury emission limit.

## **VII. REPORTING**

- Test reporting. Reviewed as received, last test on file, June 2014. Testing required every 5 years.

## **COLD CLEANERS**

Numerous small cold cleaners scattered around the plant using mineral spirits. Lafarge is considering switching to aqueous based solvent. No concerns were noted during the inspection.

## **PCE 3 SUMMARY:**

This PCE addresses compliance with MI-ROP-B1477-2012c for Flexible Groups FG CLINKER SYS, FG FINISH MILLS, FG CEMENT STR LOAD, FG CKD HAND SYS, FG MERCURY AND FG COLDCLEANERS.

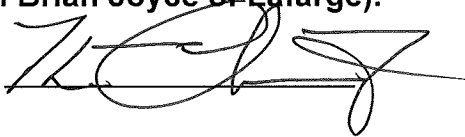
A site inspection was conducted as well as a records review to determine compliance with these requirements. Reporting was reviewed as it was received. As a result of this PCE it appears that the emission units, control devices, and monitoring equipment for FG CLINKER SYS, FG FINISH MILLS, FG CEMENT STR LOAD, FG CKD HAND SYS, FG MERCURY AND FG COLDCLEANERS are operating in compliance with the ROP requirements; with the exception of Monthly 10-minute Method 22 visible emission observations required by the Monitoring/Recordkeeping requirements of the ROP and Portland Cement MACT (40 CFR 63.1350(f)(1)(i)). Method 22 Visible emission observations were conducted, but only for 6-minute observation periods for FG CLINKER SYS and FG FINISH MILLS, and 5-minute observation periods for FG CEMENT STR LOAD. The ROP and the Portland Cement MACT require 10-minute observation periods.

All records and reporting necessary to demonstrate compliance have been maintained and submitted as required.

**FCE SUMMARY:**

The 2018 FCE was conducted through three PCE's and reviews of each report received throughout the review period. Overall, the facility appeared to be in compliance with the requirements of MI-ROP-B1477-2012c and the Air Pollution Control Rules. The only exception was the above referenced deviation from Method 22 readings which Lafarge is investigating. Additionally, PCE 1 revealed FG QUARRY secondary crusher baghouse operating outside its differential pressure operating range. In response, Lafarge identified plugged bags that were replaced in May 2018 to resolve the problem (see attached email from Brian Joyce of Lafarge).

NAME



DATE

8-27-18

SUPERVISOR

