

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

B147736091

FACILITY: LAFARGE MIDWEST INC.		SRN / ID: B1477
LOCATION: 1435 Ford Ave., ALPENA		DISTRICT: Cadillac
CITY: ALPENA		COUNTY: ALPENA
CONTACT: Travis Weide, Area Environmental & Public Affairs Manager		ACTIVITY DATE: 06/02/2016
STAFF: Kurt Childs	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: 2016 PCE; PCE 3 FG FINISH MILLS, FG CMT STR LOAD, FG CKD HANDSYS, FG COLDCLEANERS.		
RESOLVED COMPLAINTS:		

Partial Compliance Evaluation (PCE): Site inspection and Records Review of FG FINISH MILLS, FG CEMENT STR LOAD, FG CKD HAND SYS, and FG COLDCLEANERS

Introduction

This activity report covers the third PCE for the 2016 Full Compliance Evaluation of the Lafarge Holcim Alpena Cement Plant. Emission groups covered by this PCE are; FG FINISH MILLS – roller presses, ball mills, separators and associated material handling and process equipment used to grind clinker and other components into cement; FG CEMENT STR LOAD – transportation, storage and loading of cement from FG FINISH MILLS to ships, trains and trucks; FG CKD HAND SYS – transportation and disposal of cement kiln dust from the kiln baghouses to the pug mill then by scraper to the landfill where it is applied to the surface, and FG COLDCLEANERS – small PTI exempt parts cleaners located around the plant.

On June 2, 2016 AQD staff Kurt Childs and Jeremy Howe met with Travis Weide and Brian Joyce of Lafarge to conduct the PCE of the Alpena plant and discuss ongoing permitting and stack testing issues. Mr. Joyce is a new employee of the Environmental department at Lafarge Alpena. This was an unannounced inspection. Prior the inspection AQD staff made observations from off-site. The weather was clear, around 70 degrees with winds from the Southwest at 10 – 15 mph. We observed the Kiln stacks and several other stacks from around the plant. There was a small water vapor plume from the KG6 wet FGD stack. We observed faint (<5%), occasional visible emissions were noted from the FG KG 5 kiln stacks. We also observed the quarry and the main raw material stockpile. Vehicles were traveling in the quarry and were raising dense clouds of dust. Follow-up by Lafarge indicated the water truck was down for three hours the day of the inspection due to an oil sensor problem (see attached email). The primary crusher was operating but there were no visible emissions observed from the crusher. The conveyor drop point exhibited visible emissions but not at the edge of the stockpile. The CKD landfill did not exhibit any of the water vapor emissions we had previously observed.

FG FINISH MILLS ROP MI-ROP-B1477-2012a (12/22/2015)

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). Due to the nature of the process the finish mill is one of the dustiest areas of the plant. The inside of the building accumulates cement dust that requires sweeping and collection. The collected dust is reintroduced into the process. At the time of the inspection dust accumulations were moderate with dust present in most areas and dust that was raised while walking through the area.

We observed each roller press, ball mill, separator and the associated dust collectors. Most of this equipment is accessible on the separator floor of the finishing building. We also observed each dust collector stack from outside and from the roof of the finishing building. There were no visible emissions from any of the FG FINISH MILL stacks. At the time of the inspection the finishing line 21 roller press was disassembled for maintenance. Operation of the roller press is not required to operate the process line. The function of the roller press is to pre-process the clinker which increases the process rate of the ball mill. The ball mill can operate without the pre-processing of the roller mills but the throughput rate of the mill is reduced. All six of the ball mills were operating and each is a rotating drum containing steel ball bearings which act to grind down the clinker and additives. Airflow through the mill moves the cement to the separator which allows the fine dust to pass through and returns the larger particles back to the process. The

finished cement passes through air slides to FG CEMENT STR LOAD.

I. FG FINISH MILLS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
1. VE	10% opacity	Six-minute average	FG FINISH MILLS	0% observed.	
2. PM-10	1.0 Pound per Hour		EU BALL MILL 20 Mill Vent EU BALL MILL 21 Mill Vent	NA	Approximately 0.1 lb./hr.
3. PM-10	10.0 Pound per Hour	Test Protocol	EU BALL MILL 20 Separator EU BALL MILL 21 Separator	NA	Approximately 1lb./hr.
4. PM-10	4.1 tons per year	12-month rolling time period as determined at the end of each calendar month	EU BALL MILL 20 Mill Vent	NA	EU BALL MILL 20 and 21 combined. Approximately 1.5 tons per year (12-mos rolling)
5. PM-10	4.5 tons per year	12-month rolling time period as determined at the end of each calendar month	EU BALL MILL 21 Mill Vent	NA	EU BALL MILL 20 and 21 combined. Approximately 1.5 tons per year (12-mos rolling)
6. PM-10	44 tons per year	12-month rolling time period as determined at the end of each calendar month	EU BALL MILL 20 Separator EU BALL MILL 21 Separator	NA	Approximately 6 tons per year (12-mos rolling)
7. PM	0.15 pounds per 1000 pounds of exhaust gases, calculated on a dry basis		EU BALL MILL 20 Mill Vent EU BALL MILL 20 Separator EU BALL MILL 21 Mill Vent EU BALL MILL 21	NA	

8. PM	0.07 pounds per hour		<p style="text-align: center;">Separator</p> <p>FG FINISH MILLS</p> <p style="text-align: center;">Each ball mill and associated equipment</p>	NA	
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II. FG FINISH MILLS Material Limits

There are no material limits.

III. FG FINISH MILLS Process/Operational Limits

All pollution control equipment appeared to be installed and operating properly. Each stack was observed during operation and there were no visible emissions. VE observations are specified in the Operations and Maintenance Plan (O&M plan)/MAP as monitoring for the equipment. The O&M Plan/ MAP has been previously approved by the AQD.

IV. FG FINISH MILLS Design Parameters

There are no Design parameters.

V. FG FINISH MILLS Testing

Testing of opacity from "FG FINISH MILL" pursuant to 40 CFR 63.1349(b) (2) and PM-10 testing of EU BALL MILL 20 separator and EU BALL MILL 21 separator is required once every five years. The AQD does not have a record of opacity testing on these sources but VE readings are taken by staff during daily inspections and PCMACT opacity monitoring is conducted. Records of opacity testing were requested on August 2, 2016 but have not been received as of the date of this report.

The most PM-10 recent tests occurred on 10/7 & 8/2010 and retesting should have occurred by 10/7 & 8/2015 but has not. Based on observations of the process during the inspection and discussions with Lafarge Alpena staff it appeared the testing took place in the ductwork between the mill dust collector outlet and the stack ID fan inlet on finish lines 20 and 21 not on the separators. Review of the 2010 stack test results indicated that the separators were tested in the duct from the dust collector outlet to ID fan as well but only from one test port not a second port 90 degrees away. According to the report this was due to difficulty of access. During the inspection we did not observe a test port on the separator duct.

The 10/2010 test report discusses additional problems with testing EU BALL MILL 20 and 21 due to stack and ductwork configurations. These shortcomings were identified in the test protocol submitted prior to the test. The results that were determined from the 2010 testing were around 10% of the 1.0 lb./hr. limit for the mill vents and 10.0 lb./hr. limit for the separator vents. Lafarge has requested these testing requirements be removed in PTI 171-15.

Visible emission readings are required to be used for Compliance Assurance Monitoring (CAM) as an indicator of proper functioning of the mill and separator dust collectors on EU BALL MILL 20 and EU BALL MILL 21. The appropriate range is 0-10% opacity. As previously indicated, there were no visible emissions at the time of the inspection. Company records of CAM monitoring are addressed in Section VI.

VI. FG FINISH MILLS Monitoring/Recordkeeping

Daily visible emissions monitoring is required by both the PC MACT and CAM. The PC MACT opacity limit is 10% and the excursion limit under CAM is 5%. Records of VE monitoring for 2016 were reviewed and consist of 11 separate observation sheets each day. Most of the individual observation sheets were for one dust collector each, some observation sheets covered multiple dust collectors. None of the records reviewed indicated the presence of visible emissions. Much of the equipment was not operating during the review period and the operational status is noted on the observation sheet. Two days of records for each month are

attached as an example.

Monthly and 12 month rolling PM-10 emission calculations are required for the mill vents and separator vents on EU BALL MILL 20 and 21. Records were requested on 6/2/2016 and 8/2/16 and were provided on 8/16/2016 (copy of spreadsheet attached). These records were based on emission factors from stack testing in 2010 and indicate compliance with the lb./hr. and 12-mos. Rolling average PM-10 emission limits in the above table as indicated. The stack testing requirement has been removed in PTI 171-15 due to the inability to accurately test these stacks.

VII. FG FINISH MILLS Reporting

The following reports are required for FG FINISHMILLS:

1. ROP annual and Semi-annual reports. The last Semi-annual 1 and Semi-annual 2 reports were received as was the Annual report for 2015.
2. CAM semi-annual excursion/exceedance and monitor downtime reports. These reports were received and reviewed as they were received.

VIII. FG FINISH MILLS Stack/Vent Restrictions

There are eight stacks associated with FG FINISH MILLS one each for finish lines 13-15 and 19 and two each for finish lines 20 and 21. In an unusual arrangement, the mill vent stack is located within the separator stacks for each of these lines according to Lafarge Alpena. This is the reason the test sampling ports are located in the ductwork from the mill baghouse to the ID fan instead of the stacks. Only the stack parameters for the EUBALL MILL 20 and 21 mill and separator vents are specified in the ROP. Due to the stack configuration described above it is not possible to determine if the stacks, particularly the mill stacks, have the dimensions identified in the ROP. The mill stacks (which are inside the separator stacks) are required to have a minimum height of 128 ft. above ground while the separator stacks are specified to a minimum height of 108 ft. above ground. As observed from the ground only the outer (separator) stacks are visible. If the separator stacks are a minimum of 128 ft. instead of the 108 ft. required, both stacks could meet the specifications. Though, since the mill stacks are not visible this would not be possible to verify.

IX. FG FINISH MILLS Other.

Lafarge has approved versions of the required O&M plan/ MAP, and CAM plans.

FG CMNT STR LOAD ROP MI-ROP-B1477-2012a (12/22/2015)

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. Additionally we had observed the storage unit dust collectors from the roof of the finish mill as well as from on the ground. No visible emissions were observed.

I. FG CMNT STR LOAD Emissions Limits

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping/ Testing
1. VE	10% opacity ²	Six-minute average	FG CMNT STR LOAD	No visible emissions were present from the vents we observed.	
2. PM	0.05 pound per		EU STORE UNIT 2	NA	

	1000 pounds of exhaust gas, calculated on a dry gas basis ²				
3. PM	0.15 pound per 1000 pounds of exhaust gas, calculated on a dry gas basis ²		EU STORE UNIT 3	NA	
4. PM-10	0.2 pound per hour ²		EU STORE UNIT 4, Rail (The limit applies to each individual dust collector of East, Middle, and West)	NA	Emission factors are 0.003 (BLDC37) and 0.01 (BLDC38) lb./hr.
5. PM-10	0.8 ton per year ²	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	0.013 tons (BLDC37) and 0.044 (BLDC38) tons
6. PM	0.15 pound per 1000 pounds of exhaust gases, calculated on a dry basis ²		EU STORE UNIT 4, Rail (The limit applies to each individual dust collector of East, Middle, and West)	NA	
7. PM	0.15 pound per 1000 pounds of exhaust gas, calculated on a dry gas basis ²		EU STORE UNIT 4, Boat	NA	
8. PM-10	1.5 pounds per hour ²		EU BULK LD TRUCK (Dust collector EU-46-710B)	NA	Emission factor is 0.01 lb./hr
9. PM-10	6.4 tons per year ²	12-month rolling time period as determined at the end of each calendar month	EU BULK LD TRUCK (Dust collector EU-46-710B)	NA	0.044 Tons
10. PM	0.15 pound per 1000 pounds of exhaust gases, calculated on a dry basis ²		EU BULK LD TRUCK (Dust collector EU-46-710B)	NA	
11. PM	2.33 pounds		EU BULK LD	NA	

	per hour ²		TRUCK		
12. PM	2.4 tons per year ²	-	EU BULK LD TRUCK	NA	

II. FG CMNT STR LOAD Material Use Limits

There are no Material Use Limits.

III. FG CMNT STR LOAD D Process/Operational Limits

All pollution control equipment appeared to be installed and operating properly. Each stack was observed during operation and there were no visible emissions. VE observations are specified in the Operations and Maintenance Plan (O&M plan)/MAP as monitoring for the equipment. The O&MPlan/ MAP has been previously approved by the AQD.

IV. FG CMNT STR LOAD Design Parameters

There are no Design requirements.

V. FG CMNT STR LOAD Testing

1. Opacity testing of FG CMNT STR LOAD in accordance with PC MACT requirements (40 CFR 63.1349(b) (2)) is required every 5 years. The AQD does not have a record of opacity testing on these sources but VE readings are taken by staff during daily inspections and PCMACT opacity monitoring is conducted. Records of opacity testing were requested on August 2, 2016 but have not been received as of the date of this report.

VI. FG CMNT STR LOAD Monitoring/Recordkeeping

Monthly 10 minute visible emissions monitoring using Method 22 is required by both the ROP and PC MACT. The PC MACT opacity limit is 10%. Records of VE monitoring consisting of 26 separate observation sheets, most for one dust collector per sheet and some with multiple dust collectors, are generated each month. I reviewed records from 2015 and none of the records indicated the presence of visible emissions. Some of the monthly records were missing a couple of sheets and observations done in August of 2015 were only one minute long instead of 10. Two months of sample records are attached.

Monthly and 12 month rolling PM-10 emission calculations are required for EU STORE UNIT 4 and EU Bulk LD TRUCK. Company records (spreadsheet attached) indicate emissions are well below the limits in the above table as indicated in the table.

VII.FG CMNT STR LOAD Reporting

1. ROP annual and Semi-annual reports. The most recent Semi-annual 1 and Semi-annual 2 reports were received as was the Annual report for 2015.

VIII. FG CMNT STR LOAD Stack/Vent Restrictions

Stack dimensions are only specified for truck and train loading. Truck loading is in a separate location with its own silo. The actual stack parameters appear to be consistent with the ROP requirements.

IX. FG CMNT STR LOAD Other

This section simply requires the Permittee to comply with the PC MACT.

FG CKD HAND SYS ROP MI-ROP-B1477-2012a (12/22/2015)

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).

I. FG CKD HAND SYS Emissions Limits

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping/ Testing
1. VE	10 percent opacity ²	NA	FG CLINKER HAND SYS	No VE	
2. PM	0.02 grain per actual cubic foot of exhaust gas	NA	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	
3. PM	0.10 pound Per 1,000 pounds of exhaust gases calculated on a dry gas basis ²	NA	FG CLINKER HAND SYS	NA	

II. FG CKD HAND SYS Material Use Limits

There are no material use limits associated with this flex group.

III. FG CKD HAND SYS Process/Operational Limits

1. FG CKD HAND SYS only processes CKD from the kilns no other materials are substituted.
2. A malfunction abatement plan has been submitted and approved.

IV. FG CKD HAND SYS Design Parameters

There are no Design requirement associates with this flex group.

V. FG CKD HAND SYS Testing

1. Opacity testing of FG CMNT STR LOAD in accordance with PC MACT requirements (40 CFR 63.1349(b) (2) is required every 5 years. The AQD does not have a record of opacity testing on these sources but VE readings are taken by staff during daily inspections and PCMACT opacity monitoring is conducted. Records of opacity testing were requested on August 2, 2016 but have not been received as of the date of this report.

VI. FG CKD HAND SYS Monitoring/Recordkeeping

1. and 2. Monthly 10 minute visible emissions monitoring using Method 22 is required by both the ROP and PC MACT. The PC MACT opacity limit is 10%. Records of VE monitoring consisting of 8 separate observation sheets with one dust collector per sheet are generated each month. I reviewed records from 2015/2016 and none of the records indicated the presence of visible emissions. Two months of sample records are attached.

3. Preventative maintenance records were requested on July 28, 2016 and provided on August 17, 2016. They include a list of the PM activities undertaken from 8/2015 to 4/2016 including this Flexible Group. Examples of individual work orders with specific PM procedures were also included. The records indicate the control equipment is being properly maintained.

VII. FG CKD HAND SYS Reporting

1. – 4. Standard ROP reporting requirements and test plan reporting. No testing during the review period. ROP reporting was reviewed as it was received.

5. No notification of a change in land use for property classified as industrial or as a public roadway has been received.

VIII. FG CKD HAND SYS Stack/Vent Restrictions

Compliance with stack/vent parameters was not evaluated during this PCE. Vents appear to meet the specified parameters and no changes have been made.

IX. FG CKD HAND SYS Other

There are no "Other" requirements associated with this flex group.

FG COLDCLEANERS ROP MI-ROP-B1477-2012a (12/22/2015)

Lafarge Alpena has 14 small cold cleaners located throughout the plant that are used for maintenance activities. During the inspection we observed several of these including two of the largest which are located in the maintenance building. The cold cleaners are serviced once per month by Safety-Kleen and utilize mineral spirits (Safety Data Sheet attached). None of the cleaners are heated and at the time of the inspection the equipment was in good condition and the covers were closed when not in use.

PCE Summary:

This PCE addresses compliance with MI-ROP-B1477-2012a for Flexible Groups FG FINISH MILLS , FG CEMENT STR LOAD, FG CKD HAND SYS and FG COLDCLEANERS. A site inspection was conducted as well as a records review to determine compliance with these requirements. As a result of this PCE it appears that the emission units, control devices, and monitoring equipment for FG FINISH MILLS , FG CEMENT STR LOAD, FG CKD HAND SYS and FG COLDCLEANERS are operating in compliance with most of the ROP requirements with the exception of:

FG FINISH MILLS, FG CMT STR LOAD and FG CKD HAND SYS each have a testing requirement to conduct opacity (Method 9) testing once every 5 years. As a result of this PCE it does not appear these tests have been conducted or if so, that the records have been maintained.

Additional PCE activities for the remaining ROP Flexible Groups have been conducted during 2016 to form a complete assessment of compliance for this Source.

NAME



DATE

8-23-16

SUPERVISOR

