

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B147762742

FACILITY: Holcim (US) Inc. DBA Lafarge Alpena Plant		SRN / ID: B1477
LOCATION: 1435 Ford Avenue, ALPENA		DISTRICT: Cadillac
CITY: ALPENA		COUNTY: ALPENA
CONTACT: Mallory Miller ,		ACTIVITY DATE: 03/03/2022
STAFF: Kurt Childs	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Partial Compliance Evaluation #1 FG QUARRY, FG RAW MAT, FG RAW MILL SYS.		
RESOLVED COMPLAINTS:		

B1477 Holcim (US) Inc. d/b/a Lafarge Alpena

2022 FCE Partial Compliance Evaluation (PCE) No.1: Site inspection and records review of SOURCEWIDE, FG QUARRY, EUPORTCRUSH, FG RAW MAT, FG RAW MILL SYS

Introduction

This activity report covers the first PCE for the 2022 Full Compliance Evaluation of the Holcim (US) Inc. d/b/a Lafarge Alpena (Lafarge Alpena) Cement Plant. Emission groups covered by this PCE are; Source-Wide Requirements (fugitive dust plan), FG Quarry – Quarry operations including EUPRIMARYCRUSH – the primary rock crusher, EU SECONDCRUSH – the secondary rock crusher, conveyors and storage piles; FG RAW MAT – raw materials including limestone, sand , bauxite, Bell shale, gypsum) and alternate raw materials (slag, iron, shale, flyash, CKD) handling and storage; and FG RAW MILL SYS – EU RAW MILL 14 and EU RAW MILL 15 grinding, mixing, drying and storage of raw materials.

This PCE was conducted on March 3, 2022 with Ms. Mallory Miller of Lafarge. Weather at the time of the inspection was partly sunny, temperature 20 degrees F with winds from the Northwest at around 10 mph.

SOURCE-WIDE REQUIREMENTS

The Source-Wide Conditions section of the ROP contains the requirement to have and follow a Fugitive Dust Plan (FDP). Lafarge Alpena has an approved FDP that was updated in 2021. Areas of the plan covered by the FDP include: roadways, plant yard, primary crusher, secondary crusher, material storage piles, material handling operations. Prior to and during the inspection I observed the roadways (including quarry) and plant yard areas as well as material storage piles. During the inspection of FGQUARRY the primary and secondary crushers and storage piles were observed. There was no truck traffic on the quarry roads during the period of observation. Traffic on the road into the quarry did not raise dust. The roads were frozen and the yard snow covered in some areas. The primary crusher and secondary crusher were operating including stack testing of the secondary crusher. Visible emissions were present from the conveyor discharge to the primary crusher rock pile, but not beyond the foot of the pile. Various storage piles and material handling operations were observed with no visible emissions.

FG QUARRY

FG QUARRY is the source of the primary raw materials for the cement manufacturing process. The quarry is located adjacent to the cement plant and is mined by drilling, blasting and hauling. FG QUARRY is a source of fugitive dust emissions and is also the location of the primary and secondary crushers which are equipped with water spray bars, foam dust suppressant systems, and a baghouse on the secondary crusher for particulate matter control. At the time of the

inspection no trucks were observed being loaded in the quarry. Both of the crushers were operating as indicated above.

The secondary crusher is equipped with a baghouse that has differential pressure remotely monitored by the plant data acquisition system. This system provides instantaneous readings as well as generating 30 day rolling averages. At the time of the inspection the secondary crusher was undergoing stack testing and was processing material. Dust suppressant foam systems are present on both the primary crusher stockpile tail end conveyor and the secondary crusher and are used as necessary, they were not operating at the time of the inspection.

PTI 155-19 to replace the secondary crusher in-kind and to add a portable crusher for road gravel has been incorporated into the ROP. The portable crusher will replace vendor crushers that have been used in the past. The new portable crusher is in place, but additional equipment is being added. It has not operated yet.

I. FG QUARRY EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
1. Visible Emissions (VE)	20% opacity	Six-minute average	EU QUARRY FUG	No visible emissions observed from general quarry operations.	NA
2. VE See Jerry Avery's letter of 5/31/05. 886-93, 15 were superseded by Avery's letter.	15% opacity	Six-minute average	At the footprint of the Primary Crusher stockpile	The primary crusher was operating with some visible emissions at the conveyor discharge to the pile but not at the footprint of the stockpile.	NA
3. VE 165-03, I.1. Quarry 786-89A, 15	5% opacity	Six-minute average	Secondary crusher belt conveyors (11-061, 11-063, 11-064, 11-065, 11-066, 11-067, 11-069, 11-070, 11-071, 11-035),	The secondary crusher was operating. Only two locations had light visible emissions, the bottom of the crusher to 11-063 conveyor and the top end of the same conveyor.	NA

			Secondary crusher stockpiles Upper Bench and Lower Bench		
4. VE NSPS OOO	10% opacity	Six-minute average	Primary Crusher,	The crusher was operating. No VE from crusher.	NA
5. VE 165-03, I.3. Quarry; NSPS 60, 000	7% opacity ²	Six-minute average	Secondary crusher (11-002)	The crusher was operating and was enclosed.	NA
6. VE 165-03, I.2. Quarry	Zero ^{2b}	Six-minute average	Secondary crusher building, including vents on secondary crusher building	The crusher was operating. No VE from crusher building.	NA
7. PM 165-03, I.4. Quarry; NSPS OOO	0.022 gr/dscf ²		Secondary crusher (11-002)	PM testing was occurring at the time of the inspection.	NA

II. FG QUARRY Material Limits

1. Raw material production is limited to 6,600,000 tons per year. This is demonstrated by records of the amount of material processed by EU SECONDCRUSH. These records are maintained and used in the annual air emissions report (MAERS). The 2020 MAERS report indicates the throughput was 2,904,354 tons.

III. FG QUARRY Process/Operational Limits

1. The water sprays and foam suppressants were not in use at the time of the inspection and may have been related to the extreme cold weather. Quarry operator indicated sprays and suppressant usage would begin in spring. There were no significant fugitive dust issues.

2 and 4. An approved O&M/MAP is on file at the AQD District Office. The plan indicates the proper range of operation for differential pressure on the baghouse is 0.01 kPa to 2.49 kPa. A trend graph of baghouse differential pressure was provided for the period from 5/01/2021 through 11/01/2021. During this period the baghouse differential pressure was steady at 2.5 kPa except when the baghouse was not operating.

3. An approved fugitive dust plan is on file at the AQD District Office that covers the quarry and addresses visible emissions from the stockpiles, conveyors and transfer points.

IV. FG QUARRY Design Parameters

1. The secondary crusher baghouse is not equipped with a “gauge” to measure differential pressure but this parameter is measured electronically and monitored remotely.

V. FG QUARRY Testing

1. PM and visible emissions testing of EU SECONDCRUSH is required. Testing was taking place at the time of the inspection. Results are due within 60 days.

VI. FG QUARRY Monitoring/Recordkeeping

1. PM activities are tracked based on a work order system. Examples of individual work orders with specific PM procedures were not requested.

2. Records of raw material throughput are also maintained. As indicated above, records (also used in MAERS reporting) indicate compliance with the material use limit.

3. The secondary crusher baghouse differential pressure is monitored and recorded continuously on the plant data acquisition system.

4. Monthly records of dust suppressant usage were requested at the time of the inspection. Records provided 4/29/2022 (attached) indicate that no dust suppression was used on the secondary crusher. The records indicate asphalt emulsion suppressant was applied to roads in June and September of 2021. No dust suppressant was in use during the stack test in March 2022 but the baghouse was operating as required by the ROP.

VII. FG QUARRY Reporting

1. – 4. Standard ROP reporting requirements and EU SECONDCRUSH initial start up. ROP reporting was reviewed as it was received. Initial start up notification was received.

VIII. FG QUARRY Stack/Vent Restrictions

1. SV 11-055 EUSECONDCRUSH baghouse stack parameter limits are 27” diameter and 15’ minimum height. Observations during the inspection and stack test indicate the stack complies with these parameters.

IX. FG QUARRY Other

1. Standard requirement to comply with 40 CFR, Part 60, Subpart OOO.

FG RAW MAT

FG RAW MAT includes processes spread out across the plant; raw materials transported by covered conveyor from the quarry to the raw Mill, the flyash dome and day bin, which are loaded by rail (separate collector for railcar unloading), and alternate raw materials stored in the ARM building and transported by enclosed conveyor to the raw mill. I observed the dust collectors on the fly ash handling system which was not operating. FG RAW MAT also includes a dust collector on the ARM building discharge conveyor transfer. This dust collector discharges back inside the building but was not operating during the inspection. A front end loader was moving material inside the ARM building but there were no fugitive emissions from the building openings. The outdoor alternate raw materials storage area was full of material. Ms. Miller thought that it was probably bottom ash. There were no visible emissions from these storage piles.

I. FG RAW MAT EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
1. VE 166-93A, I.8. ARM	Zero ²		EU ARM STOR BLDG (Storage building 18-921)	Operating at the time of the inspection with no visible emissions from the inside discharge point.	0% from Lafarge Alpena Records. (attached)
2. VE NSPS 60.62(c); MACT 63.1345	10% opacity	Six-minute average	This limit applies to each of the following: Storage bins, Conveying system, Transfer points, Bulk loading or unloading	No VE	0% from Lafarge Alpena Records. (attached)
3. PM-10 166-93A, I.1-5. ARM	0.02 grain per actual cubic foot of exhaust gas ²		EU ARM FLY ASH (This limit applies to each of the following: Fly ash rail car unloading 17-018, Fly ash receiver bin 17-040, Fly ash dome 17-100, Fly ash day bin 17-200, Fly ash gravity conveyors 17-315 and 17-415)	No visible emissions. Compliance demonstrated by maintenance and implementation of an approved MAP.	0% from Lafarge Alpena Records. (attached)

II. FG RAW MAT Material Limits

NA

III. FG RAW MAT Process/Operational Limits

1. All dust collectors appeared to be operating properly based on my observations at the time of the inspection. There were no visible emissions from the dust collector vents.

2. An approved O&M/MAP is on file at the AQD District Office. The plan was updated in 2017.

IV. FG RAW MAT Design Parameters

NA

V. FG RAW MAT Testing

1. and 2. New opacity testing requirement (Subpart LLL) to demonstrate compliance with the 10% opacity limit in Emission Limits table I.2. Records for observations during May 2021 were provided on 4/29/2022. No visible emissions were observed. Equipment at several of the observation points were not operating at the time of the observation. This is due to the limited use of fly ash.

VI. FG RAW MAT Monitoring/Recordkeeping

1. and 2. Visible emissions monitoring occurs on a daily basis and includes each dust collector stack Vent.

3. Preventative maintenance records include a list of the PM activities undertaken for each of the Flexible Groups individual work orders detail the specific PM procedures.

VII. FG RAW MAT 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 RAW MAT Stack/Vent Restrictions

1-6. Compliance with stack/vent parameters was not evaluated during this PCE. Stacks are all for fly ash system which was not in use.

IX. FG RAW MAT Other

NA

FG RAW MILL SYS

FG RAW MILL SYS includes two mills EURAW MILL 14 and EU RAW MILL 15. They are identical raw material mixing and grinding mills with 14 located in the west half of the building and 15 located in the east half. The stacks cross over so the stack for 14 (SV20-270) exits on the east side and the stack for 15 (SV21-270) exits on the west side. Each process includes a ball mill, cyclones, separators, air slides, screws, elevators, pumps, storage silos, roller press, hammer mill, gas furnace/raw material dryer, storage bins, static separator, and conveyor belts. Dust collectors serve the screws, hammer mill, furnace, ball mill, and air slides. The FG RAW MILL stacks are visible from outside the building and raw mill CEMS data and throughput are available in the control room or plantwide data acquisition system. At the time of the inspection both raw mills were operating.

I. FG RAW MILL SYS EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
1. VE 15-05, 1.2; NSPS 60.62(c)	10% opacity ²	Six-minute average	FG RAW MILL SYS	No visible emissions were observed.	0% from daily Method 22 VE observations. (Attached)
2. PM 15-05, 1.1a EU RAW MILL 14; 15-05, 1.1d EU RAW MILL 15	0.03 pounds per 1,000 pounds of exhaust gases ²	Test Protocol	EU RAW MILL 14 (from the stack on dust collector 20-270); EU RAW MILL 15 (from the stack on dust collector 21-270)	NA	2019 stack test, passed.
3. PM 165-03, I.2. Raw	27.51 pounds per hour ²	Test Protocol	EU RAW MILL 14 (from the stack on dust collector 20-270); EU RAW MILL 15 (from the stack on dust collector 21-270)	NA	2019 stack test passed.
4. PM 165-03, I.3. Raw	120.2 tons per year ²	12-month rolling time period as determined at the end of each calendar month	FG RAW MILL SYS	NA	2019 stack test, passed.
5. SO ₂ 165-03, I.4. Raw	0.0147 pound per ton of raw material processed ²	Test Protocol	FG RAW MILL SYS	NA	Emission Factor is 0.002 lb/ton from 2021 stack test.

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Emissions observed during inspection	Emissions from Source Recordkeeping / Testing
6. THC PC MACT 63.1343	24 ppmv on a dry basis, corrected to 19 percent oxygen. ^{3, a, b}	Based on a 30 day rolling average	FG RAW MILL SYS	Not observed during the inspection.	THC CEMS
7. THC PC MACT 63.1343	24 ppmv on a dry basis 3, a, b	During startup and shutdown.	FG RAW MILL SYS	NA	NA

II. FG RAW MILL SYS Material Limits

1. The Raw and alternate raw material usage is limited to 5,600,000 tons per year. The throughput for 2020 from MAERS was 1,686,785 tons from RM 14 and 1,509,240 tons for RM 15 (3,196,025 total).

III. FG RAW MILL SYS Process/Operational Limits

1. An approved O&M/MAP is on file at the AQD District Office and was updated in 2017.
2. All dust collectors appeared to be operating properly based on my observations at the time of the inspection. There were no visible emissions from the dust collector vents.
3. Natural gas is the only fuel used in the FG RAW MILL SYS furnaces.
4. THC CEMS are installed and operating.

IV. FG RAW MILL SYS Design Parameters

NA

V. FG RAW MILL SYS Testing

1. PM emissions test on Main Baghouses is required once every five years and was last performed in 2019. The 2019 test results indicated compliance as follows:

Test	Limit (at time of testing)	Raw Mill 14	Raw Mill 15
PM	0.03 lbs/1000 lbs exhaust gas	0.001 lbs/1000 lbs exhaust gas	0.005 lbs/1000 lbs exhaust gas

	27.51 lbs/hr.	0.28 lbs/hr.	0.94 lbs/hr.
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2. SO2 emissions test on Main Baghouses is required once every five years and was last performed in 2021. The 2021 test results indicated compliance as follows:

Test	Limit (at time of testing)	Raw Mill 14	Raw Mill 15
SO2	0.0147 lbs/ton of raw material processed	0.002 lbs/ton	0.002 lbs/ton

4. PC MACT (63.1349(b)(2)) Method 9 Opacity test applies to the main baghouses on EU RAW MILL 14 and EURAW MILL 15 (20-270, 21-270). Records were previously provided indicating that the initial compliance Method 9 tests were completed, and the opacity was in compliance with the visible emission limits (there was 0% opacity). Continuous compliance is demonstrated through VE readings taken by staff during daily inspections and PCMACT Method 22 opacity monitoring.

VI. FG RAW MILL SYS Monitoring/Recordkeeping

1 and 2. A sample of records of visible emissions monitoring were provided and are attached. Visible emissions monitoring has taken place on a daily basis for each of the dust collector stack/vents in FG RAW MILL SYS. No visible emissions were detected in the sample documents.

3. and 4. PM and SO2 Monthly and 12-month rolling average emission records are available in the main baghouse (20-270, 21-270) spreadsheet. A copy is attached, and compliance is demonstrated as indicated in the emission limit compliance table above.

5. THC emissions are continuously monitored by the THC CEMS.

6. Preventative maintenance records include a list of the PM activities undertaken for each of the Flexible Groups individual, work orders detail the specific PM procedures. Records of actual maintenance conducted from July 1,2021 through December 2021 for FG QUARRY, FG RAW MAT and FG RAW MILL SYS are attached.

7. Raw material throughputs are monitored, and as indicated above in II., demonstrate the throughput is below the material use limit.

VII. FG RAW MILL SYS Reporting

1. – 6. Standard ROP reporting requirements and test plan reporting. SO2 and CEMS Testing did take place during the review period. Test protocols and results were provided within the required timelines. ROP reporting was reviewed as it was received.

7. and 8. THC CEMS quality assurance and excess emission reporting are submitted quarterly and have been reviewed as they have been received with no significant problems noted.

9 and 10. PC MACT Semi-annual Summary reports including failures to comply with the O&M Plan have been submitted and reviewed as they were received. The reports were complete, timely and certified. No excess emissions, malfunctions, exceedances, or O&M problems reported.

VIII. FG RAW MILL SYS Stack/Vent Restrictions

NA

IX. FG RAW MILL SYS Other

1. and 2. Require compliance with PC MACT emission limits and all PC MACT requirements.

PCE Summary

This PCE addresses compliance with MI-ROP-B1477-2020b for the Source-Wide Conditions and Flexible Groups FG QUARRY, FG RAW MAT and FG RAW MILL SYS. A site inspection was conducted as well as a records review, in addition to previously reviewed reporting, to determine compliance with these requirements. As a result of this PCE it appears that the emission units, control devices, and monitoring equipment for Source Wide Conditions, FG QUARRY, FG RAW MAT and FG RAW MILL SYS are operating in compliance with the ROP requirements.

NAME 

DATE _____

SUPERVISOR _____