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PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION PLAN APPROVAL APPLICATION

CEMEX Construction Materials Atlantic, LLC / Wampum

Wampum Cement Plant (TVOP 37-00013)
Wampum Borough, Lawrence County, Pennsylvania

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ACRONYMS AND ABBREVIATIONS

BACT	Best Available Control Technology
BAT	Best Available Technology
CAM	Compliance Assurance Monitoring
CaO	Calcium Oxide or Lime
Ca/S	Molar ratio for absorption
$CaSO_3$	Calcium Sulfite
$CaSO_4$	Calcium Sulfate
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon dioxide equivalent
DAA	Dry absorbent addition
EPA	U.S. Environmental Protection Agency
ESP	electrostatic precipitator
GHG	Greenhouse Gas
H_2O	Water
H_2SO_4	Sulfuric acid
HCl	Hydrochloric acid
Hg	Mercury
LAER	Lowest achievable emission rate
MACT	Maximum Achievable Control Technology
MEA	Monoethanolamine
MSC	Multistage Combustion
N_2	Nitrogen
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NH_2	Amide
NH_3	Ammonia
NO	Nitric oxide
NO_X	Nitrogen oxide
NSPS	New Source Performance Standards
NSR	New Source Review

NNSR	Nonattainment New Source Review
O_2	Oxygen
OH	Hydroxide
OTR	Ozone Transport Region
DEP	Pennsylvania Department of Environmental Protection
Pb	lead
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
PTE	Potential to emit
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
RTO	Regenerative oxidizer
SC	Staged Combustion
SCA	Specific Collection Area
SCC	Staged Combustion in the Calciner
SCR	Selective Catalytic Reduction
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SO_3	Sulfur trioxide
SO_X	Sulfur oxides
SNCR	Selective non-catalytic reduction
stpd	Short tons/per day
TCEQ	Texas Commission on Environmental Quality
tpy	time per year
THC	Total Hydrocarbon
VE	Visible Emissions
VOC	Volatile Organic Compound
WAA	Wet Absorbent Addition

1.0 INTRODUCTION

Cemex Construction Materials Atlantic, LLC (CEMEX) proposes to modernize (the Project) its Wampum Cement Plant (the Wampum Plant) located in Wampum Pennsylvania. In general, the Project will replace the three-existing long dry kilns and clinker coolers with a single five-stage preheater/calciner kiln system and a clinker cooler. The Project also includes a single unfired vertical mill raw grinding system and an indirect-fired coal grinding system. Other ancillary processes include both new equipment as well as refurbishment of existing equipment. The proposed kiln and the raw material grinding system will be key to providing a more energy efficient pyroprocessing system. The Project will enable CEMEX to efficiently produce approximately 2,600 short tons per day (stpd) to 3,120 stpd clinker at the Wampum Plant.

Cement manufacturing began at the Wampum Plant site in 1874; many modifications and ownership changes have occurred over the years. In early 2010, CEMEX ceased operations of the Wampum Plant's cement manufacturing equipment due to the severe economic conditions of the recession, and the resulting low market demand for building materials. Until that point, the Wampum Plant had been the oldest, continuously operated Portland cement manufacturing site in the United States. In mid-October 2010, CEMEX filed a deactivation plan in accordance with the requirements of 25 PA code §127.11a – Reactivation of Sources, stating that sources had been deactivated, with the exception of sources related to cement storage and loading operations. The deactivation plan included a description of the maintenance, upkeep, repair, or rehabilitation procedures to keep the equipment capable of being reactivated. CEMEX requested, and Pennsylvania Department of Environmental Protection (DEP) confirmed, that the emissions from the full operation be preserved in the DEP emissions inventory. The Title V permits for the Wampum Plant have remained current during the deactivation period; the current permit (Title V Permit No. 37-0013) was issued on March 13, 2017.

CEMEX is requesting a plan approval that will allow the construction of the new modern kiln and clinker cooler and other ancillary equipment, and the refurbishment of other equipment that had been deactivated. The Project triggers New Source Review permitting. This application document contains the DEP Plan Approval Application form, and required supporting calculations, regulatory assessment, and control technology and ambient air quality impact analyses. Several attachments, as shown in the Table of Contents, support this application.

2.0 DESCRIPTION OF PROPOSED PROJECT

2.1 Overview of Proposed Changes

The Project will replace the three existing coal-fired long dry kilns and clinker coolers with a single five-stage preheater/calciner kiln system and a clinker cooler. Two of the three existing raw meal grinding systems with their stoker coal furnaces for hot gas generation to the raw meal, will be replaced with a single vertical raw meal grinding system, utilizing preheater exhaust gases to dry the raw materials (in-line kiln/raw mill). The three existing coal grinding systems will be replaced with a single ball mill indirect coal grinding system utilizing preheater exhaust gases to dry the coal. Regarding finish grinding, the Project will refurbish the third existing ball mill for raw meal grinding to cement grinding (as Finish Mill #1); while, the second existing finish mill (Finish Mill #2) will be refurbished and remain a finish mill. These and other changes will enable CEMEX to efficiently produce approximately 2,600 stpd to 3,120 stpd clinker at the Wampum Plant.

With reference to environmental control systems, the three existing fabric filter dust collectors associated with the three existing raw mills, the three existing electrostatic precipitators (ESPs), and two existing polishing ESPs, associated with the three existing kilns, and the existing gravel bed filter associated with the three existing clinker coolers will be replaced by a new one main fabric filter dust collector to clean gas and exhaust from the new raw mill, preheater and clinker cooler. The proposed coal grinding system will include fabric filter dust collectors. Also, the Project will add many new fabric filter dust collectors across the plant especially in the areas of raw material unloading, transfer and storage, and clinker transfer and storage. A selective non-catalytic reduction (SNCR) system will be incorporated into the new pyroprocessing system to control nitrogen oxide (NO_X) emissions. Hydrated lime injected in the preheater exhaust gas stream will control sulfur emissions and neutralize acid gases such as hydrochloric acid (HCl), as well. Also, activated carbon injected upstream of the main fabric filter bags, together with a dust shuttling system, will control mercury emissions, as needed. A continuous emissions monitoring system (CEMS) will be operated at the new kiln stack to monitor sulfur dioxide (SO_2), NO_X, CO, ammonia (NH_3), and total hydrocarbon (THC).

CEMEX continues to plan to use biomass, #2 fuel oil, spent activated carbon, engineered fuels, and Class A dried sewage sludge as alternate fuels to replace a portion of the coal fired in the new pyroprocessing system.

2.2 Description of Proposed Plant Operation

2.2.1 Raw Material Receiving and Storage

Raw materials including crushed limestone, bituminous coal, shale, mill scale, pea gravel/sand, slag and mineral and synthetic gypsum are delivered by truck. Except for synthetic gypsum and a portion of the limestone, coal, mill scale and pea gravel/sand, these delivered raw materials are unloaded at the existing truck unloading station (refurbished to include a wet suppression system) where belt conveyors distribute them into existing raw material silos and a new coal bin. Material transfers are vented through new dust collectors.

Some delivered limestone and coal is directly unloaded onto open piles, when needed, to maintain about a 2-day and 3-day supply of limestone and coal, respectively. Also, some delivered limestone is unloaded into the existing Material Storage Building (refurbished to include fabric filter dust collectors). Some delivered pea gravel/sand and mill scale is unloaded into the existing Material Storage Shed (refurbished

to include a wet suppression system). In addition, delivered synthetic gypsum is unloaded into the existing Material Storage Building and the existing Material Storage Shed.

2.2.2 Raw Material Drying and Grinding

Limestone is reclaimed from the existing storage silos and transferred by new belt conveyors to a new stone hopper. Then, limestone, shale, mill scale, pea gravel/sand and slag are reclaimed from the respective new stone hopper and existing storage silos and transferred by new belt conveyors to the new raw meal grinding system.

The new raw grinding system consists of a new vertical roller mill and other auxiliary equipment. The raw mill utilizes waste heat from the preheater exhaust gases to dry and convey the ground materials through the vertical raw mill. The preheater exhaust gases pass through a new water spray conditioning tower, for gas conditioning and temperature control when the raw mill is down.

A set of new cyclone separators extract the ground raw meal from the raw mill exhaust. A portion of the gases exiting the cyclones are recycled back to the raw mill while the remaining gases are ducted through the new pyroprocessing/raw grinding main dust collector to the new main stack. The dried and ground raw meal collected in the cyclones and main dust collector is transported by screw conveyors, airslides and a pneumatic system to raw meal storage.

Material transfers are vented through new bag (or fabric) dust collectors.

2.2.3 Raw Meal Storage and Blending/Homogenizing

Raw meal from the new raw grinding system is stored in existing blending silos. The main purpose of this blending system is to allow adequate time to blend the raw meal produced in the raw grinding system prior to input to the new kiln. Material is withdrawn from the raw meal storage and blending system, weighed and transported to the preheater tower by new airslides and bucket elevators.

The blending silos and raw meal transfers include new dust collectors.

A new dust bin is installed to store a portion of the main dust collector dust. If the raw mill is running this dust is sent to the blending silos, otherwise it can be sent to a small bin to blend with the Kiln feed, and in any case for emission control, this dust can be sent to the dust hopper at existing Finish Mill #2 (for dust shuttling). The new dust bin and existing dust hopper are vented through new dust collectors.

2.2.4 Coal Grinding, Drying and Pulverized Coal Storage

Coal is the primary fuel for the new pyroprocessing system. In addition to coal, the pyroprocessing system is designed to use alternate fuels such as #2 fuel oil, biomass, spent activated carbon and engineered fuels.

Delivered coal stored in the new coal bin is reclaimed by a new apron feeder conveyor and fed to the new coal mill. The new coal grinding system is capable of drying and grinding the coal. Hot, low oxygen content preheater exhaust gases are used to safely dry and grind the coal. Coal mill exhaust gases can either be recirculated back to the coal mill as make-up gas and/or vented through the new coal mill dust collector to the new coal mill stack. Pulverized coal from the coal mill is pneumatically conveyed to new coal bins which feed the pyroprocessing system burners (kiln burner and calciner). The coal bins vent through separate new dust collectors.

The systems are designed to prevent and mitigate explosions or fires by including such measures as explosion doors, an inert extinguishing system, and a fire system (hydrants, sprinklers, etc.).

2.2.5 Pyroprocessing System

The new pyroprocessing system consists of a five-stage preheater, a calciner, a rotary kiln and a clinker cooler. Fuels to be used in the pyroprocessing system consist of coal, #2 fuel oil, biomass, spent activated carbon, non-hazardous engineered fuels, and Class A dried sewage sludge. These fuels will be injected in the clinker discharge end of the kiln and the calciner/kiln riser duct area.

The preheater design includes cyclone type preheater vessels in the gas stream exiting the rotary kiln. The vessels are arranged vertically and are supported by a preheater tower structure. Hot gases from the rotary kiln pass upward, counter-currently, through the downward-moving raw meal in the preheater vessels. Compared to the simple rotary kiln, the heat transfer rate and efficiency are increased greatly, and the process time is reduced by the intimate contact between the finely ground raw meal and the hot combustion gases [The heat consumption (thus the amount of fuel consumed, and emissions) of the new kiln compared with the former kilns, is expected to be reduced from 1030 kcal/kg clinker to about 800 kcal/kg clinker]. Most of the preheater exhaust gases are input to the new raw mill and a portion are input to the new coal mill.

The first fuel introduction point is within the calciner/kiln riser duct area. This fuel maintains a gas temperature of 1,600 to 1,700°F to enable the calcination reaction to take place prior to the raw material entering the rotary kiln. Approximately 90 to 98% of the calcination reaction occurs in this area. The calciner/kiln riser duct/tertiary air inlets are designed to create a combustion atmosphere that minimizes NO_X generation and reduces NO_X created in the kiln.

The second fuel introduction point is within the discharge end of the kiln via a low-NO_X burner. This fuel maintains a clinkering temperature of 2,600 to 2,700°F. The rotation of the kiln assists in mixing the material, transferring heat from the upper layers to the lower layers of the material bed.

Hot clinker exits the kiln into the clinker cooler. The clinker cooler utilizes undergrate air fans to blow ambient air through the hot clinker bed to cool the clinker. The hottest portion of heated cooling air is used in the kiln and calciner as preheated combustion air (secondary and tertiary air). The remaining heated cooling air, which is not used in the process, is cooled by an air-to-air heat exchanger and vented through the new main dust collector.

2.2.6 Clinker Storage

Initially, the cooled clinker is conveyed, by pan conveyors, to either the existing clinker storage dome or a new special clinker hopper. The clinker transfers, storage dome and hopper are controlled by new dust collectors. Then, the stored clinker is reclaimed by belt conveyors and transported to the existing Clinker Silo #1 (i.e., Raw Material Silo #1) at the new Finish Mill #1, and the existing Clinker Silo #15 (i.e., Raw Material Silo #15) and the existing Raw Material Storage Building at the existing Finish Mill #2. Clinker transfers, silos and the material Storage Building are vented through new dust collectors.

2.2.7 Finish Grinding

Clinker, gypsum (mineral and synthetic), limestone and cement kiln dust (CKD) are reclaimed from storage (silos, hopper, Material Storage Building and Material Storage Shed) by existing belt conveyors and bucket elevators are transported to the finish grinding system.

The finish grinding system consist of two finish mills. One is a Finish Mill #1 a newly refurbished and converted existing ball mill raw grinding system (Raw Mill #3). The other is the refurbished existing Finish Mill #2. Airslides and bucket elevators transfer milled product between the mill and associated separator. Finish Mill #1's mill and separator are vented through one existing dust collector; while, Finish Mill #2's mill and separator are vented through separate existing dust collectors.

2.2.8 Cement Storage and Shipping

Finished cement produced by the existing finish grinding systems is conveyed by the existing pneumatic transfer system to the existing cement storage silos (the East Cement Silos and the West Cement Silos). Cement silos are vented through existing dust collectors.

Stored bulk cement is pneumatically transported from the cement storage silos to two existing truck loadout stations (the existing East/West Truck Loading station and the existing New Truck Loading station) and one existing rail loadout station (the existing Railcar Loading station) where cement is loaded into enclosed trucks and railcars for shipment. A portion of the stored cement is pneumatically transported to the existing packhouse where it is packaged and loaded for truck shipment. The existing loadout bins at the bulk cement loading stations, and the existing cement packing machines are vented through existing dust collectors.

2.3 Proposed New Equipment

Table 1 presents a general list of new equipment as part of the proposed modernization of the Wampum Plant.

TABLE 1 NEW EQUIPMENT

AREA	DESCRIPTION
Raw Material Unloading and Storage	Upgrade 24" width additives belt conveyor to 30" width Belt conveyors (including a reversible belt conveyor) for loading raw material silos Dust collectors and wet suppression system
Coal Unloading and Storage	Belt conveyors Coal bin Dust collectors
Raw Material Silos Reclaim to Raw Mill Feed	Weigh feeders 100 stph belt conveyors Pocket belt conveyor Stone hopper 290 stph belt conveyor Dust collectors
Raw Grinding	290 stph vertical roller mill using preheater exhaust to dry raw materials Recycle system (including belt conveyors, bucket elevator and rejecting hopper) Cyclones 220 stph airslide 220 stph pneumatic transport of raw meal to blending silo storage Dust collectors
Raw Meal Storage and Blending	Raw meal blending silos extraction system (including airslides, bucket elevators and constant weight hopper) Dust collectors

AREA	DESCRIPTION
Coal Grinding	Apron feeder 20 stph ball mill using preheater exhaust to dry coal Dynamic separator (including screw conveyor) Coal mill dust collector and stack Inert CO_2 and water feed systems to mill Screw conveyor and pneumatic transport of grinded coal to kiln burner and calciner coal bins Kiln burner and calciner coal bins (including pre-hoppers and rotor weigh feeders for grinded coal)
Pyroprocessing System	2600 stpd to 3120 stpd rotary kiln with low-NO_X burner Five-stage preheater with ILC calciner 2600 stpd to 3120 stpd clinker cooler Main dust collector (including screw conveyors and pneumatic transport from dust collector to new dust hopper and existing dust hopper at Finish Mill #2) and stack. Exhaust from the kiln, raw mill and clinker cooler vent through the main dust collector. Environmental controls including an SNCR system, a hydrated lime injection system, and an active carbon injection system CEMS are included for NO_X, SO_2, CO, O_2, NH_3, THC and opacity monitoring at main stack
Clinker Transport to Main Clinker Storage (Clinker Dome)	Pan conveyors Special clinker hopper (including bulk loading spout and belt conveyor to main clinker storage reclaim belt conveyor) Dust collectors
Main Clinker Storage Reclaim and Transport to Finish Mills	Clinker reclaim system and transport to Finish Mill clinker storage (clinker silos and storage buildings) (including belt conveyors) Dust collectors
Finish Mills	Dust collectors for finish mill feed storage reclaim Existing Raw Mill #3 conversion to Finish Mill #1 Pneumatic transport of finished cement at Finish Mill #1
Other	Cooling tower, emergency generator, fire system pump

2.4 Removal of Existing Equipment

The Project will entail refurbishing, altering or repairing much existing equipment at the Wampum Plant. In addition, several existing equipment and processes will not be part of the future plant and will be removed or not used. Table 2 presents a list of existing sources that will be removed/not used as part of the proposed modernization of the Wampum Plant.

TABLE 2 EXISTING SOURCES TO BE REMOVED

SOURCE ID	DESCRIPTION
112	#7 belt to #4 silo transfer
131	Clinker belt to clinker silo transfer
132	Turnhead to stoker coal silo transfer
150	#7 belt to clinker silo transfer
155	#1 raw mill feed belt
157	#2 raw mill feed belt
161	Turnhead to #5 coal belt transfer
162	Diverter box to #2 coal tank transfer
163	Diverter box to coal belt transfer

SOURCE ID	DESCRIPTION
164	Coal belt to #1 coal tank transfer
165	Coal belt to #3 coal tank transfer
167	Kiln dust (Earth Plus) loading
168	3101 belt to clinker pile transfer
169	Removal from clinker pile
170	Gravel bed filter dust truck transfer
171	#3 kiln dust refeed
173	Feeder to #1 kiln feed elevator transfer
174	Feeder to #2 kiln feed elevator transfer
179	Clinker dome feeder transfer
195	#1 raw mill and separator
196	#2 raw mill and separator
198	Transfer station
199	3101 belt & 3102 belt
201	Kiln dust (Earth Plus) tank
202	3104 belt & 3105 belt
205	#1 and #2 kiln feed elevator
208	Surge bin
220	3103 belt & 3104 belt
221	Kiln dust (Earth Plus) silos
223	#1 clinker cooler
224	#2 clinker cooler
225	#3 clinker cooler
226	#1 kiln
227	#2 kiln
228	#3 kiln
229	#1 kiln auxiliary motor
230	#2 kiln auxiliary motor
231	#3 kiln auxiliary motor
232	#1 raw mill furnace
233	#2 raw mill furnace
234	#1 finish mill & separator

3.0 APPLICABLE REQUIREMENTS

3.1 National and State Ambient Air Quality Standards

The United States Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six air pollutants (ozone, Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2), Particulate Matter (including PM_{10} and $PM_{2.5}$), and lead). Primary NAAQS are intended to protect public health while secondary standards are intended to protect public welfare. The NAAQS promulgated by EPA have been incorporated, by reference, as part of the DEP standards contained in 25 Pa. Code Chapter 131. NAAQS are summarized in Table 3 below.

TABLE 3 NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

POLLUTANT	STANDARD TYPE	AVERAGING PERIOD	STANDARD	NOTE
Carbon Monoxide (CO)	primary	1-hour	35 ppm (40,000 µg/m^3)	Not to be exceeded more than once per year
	primary	8-hour	9 ppm (10,000 µg/m^3)	Not to be exceeded more than once per year
Lead (Pb)	primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide (NO_2)	primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	annual	53 ppb	Annual mean
Ozone	primary and secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	primary	Annual	12.0 µg/m^3	Annual mean, averaged over 3 years
	secondary	Annual	15.0 µg/m^3	Annual mean, averaged over 3 years
Particulate Matter (PM_{10})	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years.
Sulfur Dioxide (SO_2)	primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Geographic areas where the concentration of a given pollutant is at or below the NAAQS are classified as "attainment" areas for that pollutant. If an area exceeds the NAAQS for a given pollutant, then the area is considered a "nonattainment" area. Areas where there is insufficient monitoring data to determine if the NAAQS is being met are designated as unclassifiable. For permitting determinations, the unclassifiable areas are considered attainment areas. The Wampum site is in Wampum Borough, Lawrence County. The current federal air quality classifications (given in 40 Code of Federal Regulations (CFR) Part 81) for the Lawrence County are listed in Table 4 for each criteria pollutant. The project area is designated as attainment or unclassifiable for all criteria pollutants.

TABLE 4 LAWRENCE COUNTY NAAQS ATTAINMENT STATUS

POLLUTANT	ATTAINMENT STATUS
Sulfur Dioxide (SO_2)	Unclassifiable
Carbon Monoxide (CO)	Unclassifiable/Attainment
Particulate Matter (PM_{10})	Unclassifiable
Particulate Matter ($PM_{2.5}$)	Unclassifiable/Attainment
Nitrogen Dioxide (NO_2)	Unclassifiable/Attainment
Ozone (8-hour)	Unclassifiable/Attainment*
Lead	Unclassifiable/Attainment

* The Wampum Plant location is within the Northeast Ozone Transport Region (OTR) which is treated as a moderate nonattainment area for ozone

3.2 New Source Review

New air contaminant sources are required to obtain a plan approval prior to construction in accordance with DEP's Air Resources regulations. The DEP's and EPA's process for reviewing new sources of air pollution is the New Source Review (NSR) permitting program. DEP's NSR requirements are codified in 25 Pa. Code Chapter 127. The NSR permitting program, as it applies to the Project, is discussed in Section 4.

3.3 Compliance Assurance Monitoring (CAM)

The Federal Compliance Assurance Monitoring (CAM) regulation – 40 CFR Part 64 – is applicable to those regulated air pollutant-specific emissions units that use a control device to achieve compliance with applicable (non-exempt) emission limits or standards, and that have pre-control emissions equal to or greater than the major source emissions threshold. This regulation defines minimum applicable monitoring, operation and maintenance requirements to ensure compliance with emission limits.

The CAM rule applies to a pollutant-specific emissions unit at a major source that is required to obtain a Part 70 Operating Permit that meets all the following applicability criteria:

1. The emissions unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt (as described under 40 CFR 64.2 (b) (1)) [40 CFR 64.2 (a) (1)];
2. The emissions unit uses a control device (as defined under 40 CFR 64.1, which, briefly, is equipment, that is not passive control measures, that is used to destroy or remove air pollutants prior to discharge to the atmosphere but does not include inherent process equipment) to achieve compliance with the emission limitation or standard to which the emissions unit is subject [40 CFR 64.2 (a) (2)]; and
3. The emissions unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source [40 CFR 64.2 (a) (3)].

The emissions units at the Wampum Plant were reviewed to determine applicability to 40 CFR Part 64. No emissions units were found to be applicable to 40 CFR Part 64.

With regard to the first criteria, exempt emission limitations or standards include those proposed by the EPA after November 15, 1990 pursuant to section 111 (New source Performance Standards) or section

112 (National Emission Standards for Hazardous Air Pollutants) of the Clean Air Act [40 CFR 64.2 (b) (1) (i)]. There are several post-1990 section 111 and 112 rules that are applicable to the Wampum Plant. These are briefly described below.

40 CFR Part 63 Subpart LLL – National Emission Standards for Hazardous Air Pollutants (NESHAP) from the Portland Cement Manufacturing Industry - applies to virtually all new and existing emission units at the Wampum Plant. Affected sources subject to 40 CFR Part 63 Subpart LLL at the new or existing Wampum Plant include:

1. Raw material storage bins (including any manmade enclosure for storage such as the Material Storage Shed and Material Storage Building);
2. Kiln (including inline raw mill, inline coal mill, preheater and precalciner);
3. Clinker cooler;
4. Clinker storage bins (including any manmade enclosure for storage such as the Material Storage Building);
5. Finish Mills (including separators);
6. Cement storage bins (including any manmade enclosure for storage such as the clinker dome);
7. Conveying system transfer points including those associated with coal preparation used to convey coal from the mill to the kiln (including feeders, belt conveyors, bucket elevators and pneumatic systems for conveying fuel, raw materials, raw meal, clinker or cement); and
8. Cement bagging and bulk loading and unloading systems.

40 CFR Part 60 New Source Performance Standards (NSPS) Subpart Y – Standards of Performance for Coal Preparation and Processing Plants – applies to the proposed new coal storage systems, including the new coal bin upstream of the new coal mill and the new crushed coal bins feeding the new kiln burner and calciner.

In addition, exempt emission limitations or standards include those for which a Part 70 Operating Permit specifies a continuous compliance determination method (as defined under 40 CFR 64.1). CEMEX proposes to use permit-specified CEMs for monitoring NO_X and SO_2 emissions continuously at the main kiln stack.

The new kiln will use pollution control devices to control stack emissions of NO_X (SNCR system), SO_2 (dry hydrated lime injection system) and mercury (activated carbon injection system). The kiln is subject to an emission limitation or standard for mercury emissions pursuant to 40 CFR Part 63 Subpart LLL. The kiln also is subject to emission limitations or standards for NO_X and SO_2 pursuant to 40 CFR Part 60 Subpart F (as well as BACT). However, as discussed above, these emission limitations or standards are exempt under 40 CFR Part 64.

As a result, since virtually all emissions units at the Wampum Plant are subject to emission limitations and standards that are exempt under 40 CFR Part 64, the emissions units are not subject to 40 CFR Part 64 because the first applicability criterion is not met.

Furthermore, PM units throughout the Wampum Plant will be controlled by dust collectors. However, these dust collectors are an integral part of the material transfer and separation process and are not considered air pollution control devices for purposes of meeting an emissions limitation or standard. The material collected by the dust collectors is reintroduced into the process. In addition, bin vent filters are integrated into the bins they serve and operate passively to capture material in displacement air and return

it to the storage bin. Therefore, because the dust collectors and bin vent filters are for product/material recovery, and are, thereby, inherent process equipment (defined under 40 CFR 64.1), they are not considered control devices under 40 CFR 64.1.

As a result, since virtually all particulate matter emissions units at the Wampum Plant do not use a control device as defined under 40 CFR Part 64, the emissions units are not subject to 40 CFR Part 64 also (in addition to not meeting the first applicability criteria) because the second applicability criterion is not met.

There are four controlled particulate emissions units that are not subject to 40 CFR Part 63 Subpart LLL; they include the emissions units relating to the raw material truck unloading station (specifically, units relating to limestone and coal unloading to a reception hopper, vibrating feeding to a coal lump breaker and transferring to a reclaim belt conveyor, and additives unloading to a reception hopper, vibrating feeding to a reclaim belt conveyor). Pre-control PM emissions were calculated for these four emission points (dust collector equipment numbers: 311-02-312-01, 311-03-312-01, 341-03-312-01 and 341-04-312-01) and were each well below the major source threshold of 100 times per year (tpy) PM. As a result, since the pre-control emissions are below the major source emission threshold, the emissions units are not subject to 40 CFR Part 64 because the third applicability criterion is not met.

3.4 New Source Performance Standards (NSPS)

NSPS are established by EPA for source categories that cause or contribute significantly to air pollution. These standards apply to sources that have been constructed or modified since the proposal of the standard. NSPS are codified in 40 CFR Part 60. There are several NSPS standards that potentially apply to the Project which are outlined in the following subsections.

3.4.1 40 CFR Part 60 Subpart A – General Provisions

40 CFR Part 60, Subpart A - *General Provisions* - applies to any source that is subject to another NSPS subpart. In general, Subpart A provisions include those related to initial notification and recordkeeping, performance tests, monitoring and recordkeeping. The Project will be subject to several NSPS Subparts, thus specific provisions in Subpart A will apply.

3.4.2 40 CFR Part 60 Subpart IIII –Stationary Compression Ignition Internal Combustion Engines

40 CFR Part 60, Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* - apply to the 1,000 kW (~1,340 BHP) emergency generator engine proposed by CEMEX. The regulation requires that manufacturers of internal combustion engines certify engines to specific emission standards based on model year, engine size and type, and that owners/operators purchase certified engines. CEMEX plans to purchase a certified engine, and to operate and maintain the engine in accordance with the manufacturer's emission related written instructions to comply with Subpart IIII.

Additionally, the diesel fuel fired in the emergency generator will meet the requirements of 40 CFR 80.510(a) as referenced by Subpart IIII which limits the sulfur content of diesel fired in Subpart IIII engines to 15 ppm (0.0015%). The engine will be equipped with a non-resettable hour meter. Maintenance checks and readiness testing will be limited to 100 hours per year per engine.

3.4.3 40 CFR Part 60 Subpart F - Portland Cement Plants

40 CFR Part 60, Subpart F - *Standards of Performance for Portland Cement Plants* - applies to specific affected facilities in Portland Cement plants. This regulation stipulates emission standards and monitoring, performance testing, and recordkeeping/reporting requirements for new kilns, clinker coolers, raw mill systems, finish mill systems, raw mill dryers, and other affected processes including raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems. Specifically, the new kiln will be subject to requirements pertaining to NO_X, SO_2, and PM; the clinker cooler will be subject to requirements pertaining to PM, and other affected facilities will be subject to opacity limits.

Note that for affected new sources also subject to emission limits or requirements under NESHAP Subpart LLL, if the emission limits or requirements differ between the two regulations, CEMEX will be required to comply with the less stringent limit or requirement until it is in compliance with the most stringent limit or requirement, per 40 CFR §63.1356. Once in compliance with the most stringent limit or requirement, the less stringent limit or requirement will not be applicable.

CEMEX will comply with the applicable requirements of NSPS Subpart F.

3.4.4 40 CFR Part 60 Subpart Y – Coal Preparation and Processing Plants

40 CFR Part 60, Subpart Y – *Standards of Performance for Coal Preparation and Processing Plants* – applies to the preparation and processing of coal preparation plants with a rate of more than 200 tons per day (tpd). Potentially affected coal preparation and processing facilities include coal crushing/breaking/screening equipment, coal storage systems (e.g., bins), conveying equipment (e.g., belt conveyors), coal transfer and loading systems, and open storage piles.

New belt conveyors and transfers for coal, coal storage bins, coal storage pile, and coal mill will be constructed under the proposed project. Emission points directly associated with these new systems will be subject to Subpart Y based on a daily process rate that exceeds the Subpart Y threshold of 200 tpd. The main requirement for this NSPS is that affected facilities must not have emissions that equal or exceed 10% opacity. In addition, any affected facility equipped with a mechanical vent (e.g., baghouse) must not have PM emissions that exceed 0.010 gr/dscf. For open coal storage piles, CEMEX must prepare and operate in accordance with a fugitive coal dust emissions control plan (which will be developed prior to start-up).

CEMEX will comply with the applicable requirements of NSPS Subpart Y.

3.4.5 40 CFR Part 60 Subpart OOO – Nonmetallic Mineral Processing Plants

40 CFR Part 60, Subpart OOO – *Standards of Performance for Nonmetallic Mineral Processing Plants* – must be evaluated for the processing of raw materials, including limestone, shale, sand, and gypsum. Potentially affected raw material processing facilities include unloading, crushing/ grinding/ screening equipment, conveying equipment (e.g., belt conveyors), material storage systems (e.g., silos).

Note that new affected facilities subject to both 40 CFR Part 60, subparts F and OOO (e.g., conveyor belts/transfers) are not subject to the provisions of Subpart OOO, per 40 CFR §60.670(b).

CEMEX will comply with the applicable requirements of NSPS Subpart OOO.

3.5 National Emissions Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology (MACT)

3.5.1 40 CFR Part 63, Subpart A

40 CFR Part 63, Subpart A - *General Provisions* - apply to any source that is subject to another NESHAP/MACT Subpart. In general, Subpart A provisions include those related to notification, performance tests, monitoring, recordkeeping requirements. The Project will be subject to 40 CFR Part 63, Subpart LLL. Table 1 in 40 CFR 63, Subpart LLL details which provisions of Subpart A apply to Subpart LLL.

3.5.2 40 CFR Part 63 Subpart LLL

Hazardous Air Pollutants from the Portland Cement Manufacturing Industry 40 CFR Part 63, Subpart LLL - *National Emissions Standards for the Portland Cement Manufacturing Industry* - applies to specific affected facilities at Portland Cement Plants that are major sources. These affected facilities include the kiln, the clinker cooler, the raw mill, the finish mills, the raw material, clinker, and finished product storage, the conveying system transfer points, and bagging and bulk loading and unloading systems. Specifically, the kiln will be considered "new" under Subpart LLL and subject to PM standards, as well as dioxin/furan (D/F), mercury, THC and hydrochloric acid (HCl) requirements. The clinker cooler will also be considered "new" and subject to PM requirements. Other sources (both new and existing) will be subject to a 10% opacity limit.

CEMEX will comply with the applicable requirements of Subpart LLL.

3.6 State Requirements

3.6.1 25 Pa. Code Chapter 121 General Provisions

Chapter 121 contains definitions and general administrative requirements and provisions for the control and prevention of air pollution. CEMEX will comply with the applicable requirements of Chapter 121.

3.6.2 25 Pa. Code Chapter 122 National Standards of Performance for New Stationary Sources

Chapter 122 adopts Standards of Performance for New Stationary Sources, or NSPS, promulgated by the EPA which allows the standards to be independently enforceable by the DEP and delegates authority to the DEP. CEMEX is subject to the NSPS requirements as previously discussed in this section.

3.6.3 25 Pa. Code Chapter 123 Standards for Contaminants

Chapter 123 establishes emission standards and requirements for fugitive emissions, particulate matter emissions, sulfur compound emissions, odor emissions, visible emissions (VE), and nitrogen compound emissions.

Fugitive Emissions: 25 Pa. Code §123.1 Prohibition of Certain Fugitive Emissions

Section 123.1 prohibits certain fugitive emissions into the outdoor atmosphere from sources other than the following:

- Construction or demolition of buildings or structures.
- Grading, paving, and maintenance of roads and streets.
- Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment are not considered as emissions from use of roads and streets.
- Clearing of land.
- Stockpiling of materials.
- Open burning operations.
- Blasting in open pit mines. Emissions from drilling are not considered as emissions from blasting.
- Sources and classes of sources other than those listed above, for which the facility has obtained a determination from the DEP that the fugitive emissions meet the following requirements: the emissions are of minor significance with respect to causing air pollution, and the emissions are not preventing or interfering with attainment or maintenance of an ambient air quality standard.

For the sources listed above, the facility must take all reasonable actions to prevent particulate matter from becoming airborne. Such actions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.
- Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which may give rise to airborne dusts.
- Paving and maintenance of roadways.
- Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

CEMEX will comply with the applicable requirements of Section 123.1.

Fugitive Emissions: 25 Pa. Code §123.2 Fugitive Particulate Matter

Section 123.2 prohibits the emission of particulate matter from a source listed in Section 123.1 if the emissions are visible at the point the emissions pass outside the facility's property. CEMEX will comply with Section 123.2.

Particulate Matter Emissions: 25 Pa. Code §123.13 Processes

Section 123.13 establishes particulate matter emission limits for processes. Specific processes that are identified in the table contained in 25 Pa. Code §123.13(b)(1) are not permitted to emit particulate matter into the outdoor atmosphere in excess of the rate calculated by the formula contained in 25 Pa. Code §123.13(b)(2) or in a manner that the concentration of particulate matter in the exhaust exceeds 0.02 grain per dry standard cubic foot, whichever is greater. The requirements of 25 Pa. Code §123.13(b) apply to

the kiln (Portland cement manufacturing: clinker production) and the clinker cooler (Portland cement manufacturing: clinker cooling).

For processes not listed in the table contained in 25 Pa. Code §123.13(b)(1), 25 Pa. Code §123.13(c)(1)(i) prohibits the emission into the outdoor atmosphere of particulate matter in a manner that the concentration of particulate matter in the exhaust exceeds 0.04 grain per dry standard cubic foot, when the exhaust volumetric flow rate is less than 150,000 dry standard cubic feet per minute. The requirements of 25 Pa. Code §123.13(c)(1)(i) apply to all of the particulate matter-emitting process sources (other than the kiln and clinker cooler) and the emergency generators. CEMEX will comply with the applicable requirements of Section 123.13.

Sulfur Compound Emissions: 25 Pa. Code §123.21 General

Section 123.21 establishes a sulfur compound emission limit for sources other than combustion units. Sources are not permitted to emit sulfur oxides into the outdoor atmosphere in a manner that the concentration of sulfur oxides, expressed as SO_2, in the exhaust exceeds 500 parts per million, by volume, dry basis. Section 123.21 applies to the kiln and the emergency generators. CEMEX will comply with Section 123.21.

Odor Emissions: 25 Pa. Code §123.31 Limitations

Section 123.31(b) prohibits the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the facility on which land the source is being operated. CEMEX will comply with the applicable requirements of Section 123.31.

Visible Emissions: 25 Pa. Code §123.41 Limitations

Section 123.41 prohibits the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: (1) equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any 1 hour; (2) equal to or greater than 60% at any time. In addition, Sections 123.42 and 123.43 identify the permissible exceptions and the acceptable measuring techniques, respectively, in regard to the Section 123.41 limitations. CEMEX will comply with Section 123.41 and associated Sections 123.42 and 123.43.

3.6.4 25 Pa. Code Chapter 124 National Emission Standards for Hazardous Air Pollutants

Chapter 124 adopts NESHAP promulgated by the EPA which allows the standards to be independently enforceable by the DEP and delegates authority to the DEP. CEMEX is subject to the NESHAP requirements as previously discussed in this section.

3.6.5 25 Pa. Code Chapter 127 Construction, Modification, Reactivation, and Operation of Sources

Chapter 127 specifies construction, modification, reactivation, and operation permitting requirements for emission sources. Subchapter A provides the general purpose of the permitting program and identifies operational flexibility provisions. Subchapter B specifies plan approval requirements, including the content of applications, municipal notification, terms and conditions, and administrative procedures, and

it requires a facility to obtain a plan approval prior to construction, modification, reactivation, or installation of an air contamination source. Sections 127.1 and 127.12(a)(5) require that the emissions from a new source will be the minimum attainable through the use of the best available technology (BAT). DEP defines BAT as equipment, devices, methods, or techniques as determined by the Department which will prevent, reduce, or control emissions of air contaminants to the maximum degree possible and which are available or may be made available.

The EPA's Prevention of Significant Deterioration (PSD) requirements are adopted by the DEP through Chapter 127 Subchapter D, making the PSD requirements independently enforceable by the DEP and implementing Part C of the Clean Air Act. The CEMEX project is subject to PSD review, including a determination of Best Available Control Technology (BACT); a source impact analysis; an assessment of additional impacts to soils, vegetation, and visibility, and secondary impacts due to project-related growth; and an assessment of potential impacts on nearby Federal Class I areas. The applicable PSD permitting requirements are addressed in detail within this application document. The CEMEX project is also subject to Chapter 127 Subchapter E which establishes Nonattainment New Source Review (NNSR) permitting requirements. The NNSR review includes a determination of lowest achievable emission rate (LAER); the acquisition of emissions offsets (i.e., Emissions Reduction Credits (ERCs)); an alternatives analysis; and a certification of state-wide compliance with applicable emissions limitations and standards.

Chapter 127 Subchapter F contains the requirements for operating permits, and Subchapter G contains the requirements specific to Title V operating permits. As an existing facility, the CEMEX facility is currently permitted under Title V Permit No. 37-00013 (issued March 13, 2017). Subsequent to plan approval issuance and demonstration to the Department's satisfaction that CEMEX is complying with the terms and conditions of the issued plan approval, the plan approval's emission sources and terms and conditions will be rolled into the facility's existing Title V permit via an administrative amendment.

Chapter 127 Subchapter I establishes DEP plan approval and operating permit fees and Title V emission fees. For the CEMEX project, the plan approval application fees that apply are as follows:

- Source requiring approval under NSPS and NESHAP: $3,400 ($1,700 + $1,700)
- Source requiring approval under NSR regulations: $5,300
- Source requiring approval under PSD: $22,700
- Total Plan Approval Application Fee: $31,400

3.6.6 25 Pa. Code Chapter 129 Standards for Sources

Chapter 129 establishes emission standards and requirements for specific source types or source categories. The sections that are applicable to CEMEX are discussed below.

Additional RACT Requirements for Major Sources of NO_X and VOCs: 25 Pa. Code §129.96 through §129.100

Since CEMEX is a major NO_X emitting facility and major volatile organic compound (VOC) emitting facility as defined in Chapter 129, Section 129.96, CEMEX must evaluate compliance with the Reasonably Available Control Technology (RACT) requirements for the project's NO_X and/or VOC-emitting sources, namely the kiln and the emergency generators. However, under NNSR, CEMEX is subject to LAER requirements for NO_X and VOC which is more stringent than RACT and supersedes RACT. For example, 25 Pa. Code §129.97(h)(3)(ii) establishes a presumptive precalciner cement kiln

NO_X RACT emission limit of 2.36 pounds per ton of clinker produced. CEMEX's proposed kiln NO_X LAER emission limit is more restrictive than the presumptive NO_X RACT emission limit. Regarding the facility's proposed emergency generator, 25 Pa. Code §129.97(c)(8) establishes presumptive RACT as the installation, maintenance, and operation of the engine in accordance with the manufacturer's specifications and with good operating practices. CEMEX will comply with the applicable requirements of Sections 129.96 through 129.100.

3.6.7 25 Pa. Code Chapter 131 Ambient Air Quality Standards

The NAAQS promulgated by the EPA are incorporated by reference as part of the standards in Chapter 131. The NAAQS are summarized in Table 3. As part of the plan approval application and PSD requirements, CEMEX has prepared an air dispersion modeling analysis to demonstrate compliance with the applicable ambient air quality standards.

3.6.8 25 Pa. Code Chapter 135 Reporting of Sources

Chapter 135 requires that a facility that has previously been advised by the Department to submit an actual emissions report must do so by March 1 of each year for the preceding calendar year. CEMEX will comply with the applicable requirements of Chapter 135.

3.6.9 25 Pa. Code Chapter 137 Air Pollution Episodes

Chapter 137 establishes the requirements for air pollution episodes. If the DEP classifies Lawrence County as an area requiring a standby plan, CEMEX will comply and submit a standby plan within 90 days of the DEP's request.

3.6.10 25 Pa. Code Chapter 139 Sampling and Testing

Chapter 139 provides general requirements and procedures for sampling and testing, reference test methods, and requirements for source monitoring. CEMEX will comply with the applicable requirements of Chapter 139.

3.6.11 25 Pa. Code Chapter 145 Interstate Pollution Transport Reduction

Chapter 145 Subchapter C - Emissions from NO_X from Cement Manufacturing applies to the CEMEX facility. As per 25 Pa. Code §145.143(a) and §145.143(b)(2)(iii)(B), by October 31 of each year, the owner or operator of a Portland cement kiln shall determine the allowable emissions of NO_X during the period of May 1 through September 30 by multiplying the tons of clinker produced by the Portland cement kiln for the period by 2.36 pounds of NO_X per ton of clinker produced. CEMEX will comply with the applicable requirements of Chapter 145.

4.0 NEW SOURCE REVIEW APPLICABILITY

New, modified, and reactivated air contaminant sources and installation of air cleaning devices are required to obtain a plan approval prior to construction, modification, reactivation, and installation. The DEP and EPA process for reviewing new and modified sources of air pollution is the NSR permitting program. DEP's NSR requirements are codified in 25 Pa. Code Chapter 127. NSR is evaluated on a pollutant basis, and the potential specific NSR requirements depend on whether the area is in attainment of the NAAQS for that pollutant. If the area's air quality is exceeding a NAAQS, it is considered a nonattainment area, and if the emissions from the construction or modification are above certain threshold levels, the project would be subject to NNSR. In an area where air quality is acceptable, classified as attainment or unclassifiable, and the emissions from the construction or modification exceed certain thresholds, then PSD review applies.

The Wampum Site is located in Wampum Borough, Lawrence County, which is designated as an attainment area for CO, NO_X, SO_2, PM_{10}, $PM_{2.5}$, Pb, and ozone (40 CFR §81.339). However, this location is within the Northeast Ozone Transport Region (OTR) which is treated as a moderate nonattainment area for ozone (25 Pa. Code §127.201(c)). As part of this application for a Plan Approval for the Project, CEMEX has assessed the applicability of the NNSR and PSD regulations. The results of this assessment are discussed in the following subsections.

4.1 Nonattainment New Source Review

NNSR is a Federally-mandated pre-construction permitting program for major stationary sources or major modifications to major stationary sources located within a nonattainment area. Because of the Wampum Site's location within the OTR, the plant is potentially subject to NNSR. The DEP NNSR rules are codified under 25 Pa. Code Chapter 127, Subchapter E – New Source Review. VOC and NO_X are precursor emissions for ozone. Therefore, emissions of VOC and NO_X are evaluated to assess the applicability of NNSR requirements.

In Lawrence County, a source is a major source if it has a potential to emit (PTE) of at least 50 tpy of VOC or 100 tpy of NO_X (25 Pa. Code §127.201(c)). The Wampum Plant is an existing major stationary source for VOC and NO_X as the facility is currently operating under Title V Permit No. 37-00013 which contains no federally-enforceable synthetic minor emission limits for VOC or NO_X. The NNSR requirements apply to a new major source or modification to an existing major source (25 Pa. Code §127.203a)) with a projected net significant emissions increase as determined in accordance with 25 Pa. Code §127.203a (25 Pa Code §127.201(d)).

The first step in the NNSR applicability analysis is to determine if the proposed project causes a significant emissions increase of a regulated NSR pollutant. The Project involves the installation of new emissions units, the removal of currently deactivated existing emissions units, and the reactivation and modification of existing emissions units. For new emissions units, the emissions increase is the PTE (25 Pa. Code §127.203a(a)(1)(i)(B)). For existing emissions units, an emissions increase of a regulated NSR pollutant is the difference between the projected actual emissions and the baseline actual emissions for each unit, as determined by 25 Pa. Code §127.203a(a)(4) & (5). When calculating an increase in emissions that results from the particular project, one shall exclude that portion of the unit's emissions following completion of the project that existing units could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that is also unrelated to the particular project, including all increased utilization due to product demand growth as specified in 25 Pa. Code §127.203a(a)(5)(i)(C) (25 Pa. Code §127.203a(a)(1)(i)(A)). A significant emissions increase is projected to occur if the emissions increase due to the proposed project equals or exceeds the significant amount for

the pollutant (25 Pa. Code §127.201(d)). The emission rates that are defined as "significant" are provided in 25 Pa. Code §121.1 for VOC and NO_X (i.e., 40 tpy).

If the proposed project results in a significant emissions increase, the next step in the NNSR applicability analysis is to determine if the proposed project causes a significant net emissions increase. A significant net emissions increase of a regulated NSR pollutant is projected to occur if the net emissions increase equals or exceeds the significant amount for the pollutant. The net emissions increase is calculated as the sum of the significant emissions increase due to the project (as calculated above) and any other creditable increases and decreases in actual emissions at the source that are contemporaneous with the proposed project (25 Pa. Code §127.203a(a)(1)(ii)). An increase or decrease in actual emissions is contemporaneous if it occurs between the date 5 years before construction on the proposed project commences and the date that construction on the project is completed (25 Pa. Code §127.203a(a)(1)(ii)(B)(I)).

For NNSR applicability, CEMEX has conservatively used the PTE emissions from all of the emissions sources (new and modified) associated with the Project. Table 5 shows that the Project is subject to NNSR review for VOC and NO_X.

TABLE 5 SUMMARY OF NNSR APPLICABILITY ANALYSIS FOR CEMEX WAMPUM CEMENT PLANT

POLLUTANT	SIGNIFICANT EMISSION LEVEL (TPY)	PROJECT EMISSIONS (TPY)	SUBJECT TO NNSR REVIEW?
VOC	40	46	Yes
NO_X	40	861	Yes

For major sources, NNSR requirements include (25 Pa. Code §127.205):

- A determination of LAER for the pollutant(s);
- A certification of state-wide compliance;
- The acquisition of emissions offsets for the pollutant(s); and
- An alternatives analysis.

LAER determinations are presented in Section 5, *Control Technology Analysis*, and the compliance certification is addressed on the DEP's *Air Pollution Control Act Compliance Review Form* (see Section6). Emissions offsets and the alternatives analysis are discussed in the following subsections.

Emissions Offsets

The VOC and NO_X emissions associated with the Project are significant. Therefore, ERCs for the net emissions increases are required to be obtained for the proposed project (25 Pa. Code §127.205(3)).

The ratio of emissions offsets required for both VOC and NO_X flue emissions within the Northeast OTR is 1.15:1 (25 Pa. Code §127.210(a)). The emissions offset ratio for fugitive VOC emissions is 1.3:1; however, the Project will not include any fugitive VOC emissions. Therefore, CEMEX is required to obtain ERCs for VOC and NO_X at a rate of 1.15 times the proposed net emissions for these pollutants.

Based upon an initial review, suitable ERCs are available in Pennsylvania's ERC Registry System and/or the ERC Registry Systems of Maryland and New York, with which Pennsylvania has reciprocity agreements. CEMEX expects the ERC requirement to be a condition of the issued Plan Approval and will

not operate the proposed emission sources until the required ERCs are secured, provided to and processed through the ERC Registry System, and certified by DEP in accordance with 25 Pa. Code §127.206(d).

Alternatives Analysis

As required by 25 Pa. Code §127.205(5), an applicant for a Plan Approval must conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for the proposed project, which demonstrates that the benefits of the proposed project significantly outweigh the environmental and social costs imposed within Pennsylvania as a result of its location, construction, or modification.

The CEMEX Wampum Plant is an existing facility that currently functions as a cement products terminal/packaging operation. From 1957 – 2010, the Plant operated three (3) long, dry cement kilns. In 2010, CEMEX prepared and submitted a deactivation and maintenance plan to DEP for the affected emission sources. CEMEX proposes to reactivate the Wampum Plant to restore its cement manufacturing capability via the removal of the three (3) existing, deactivated kilns and the installation and operation of a new, modern 5-stage preheater/precalciner kiln with state-of-the-art emissions controls, a new clinker cooler, and various ancillary equipment.

Alternative Project Sites

Because the proposed project is a reactivation and modernization of an existing cement plant, CEMEX's evaluation of alternative project sites is limited in scope. The construction of an entirely new cement plant at a site other than the current Site was not considered further due to business/economic and logistical considerations. The existing site offers the advantage of already possessing the necessary development, infrastructure, equipment, access, utilities, and nearby raw material source (limestone quarry) for the project. The raw materials required to make cement are not universally available, so location, as well as bulk shipping and market access, are important factors that the current site already offers. Furthermore, because the site is a developed, existing cement plant, and the proposed project will occur within the boundaries of the existing facility, there are no concerns with potential adverse environmental impacts to endangered, threatened, or special concern species that could occur at an alternative greenfield site.

Alternative Project Sizes

The Project (i.e., proposed new kiln capacity/plant production rate) was selected based on CEMEX's industry knowledge and economic evaluation of the current and future demand for cement in the region. The design capacity of the reactivated and modernized plant was determined based on those factors and will serve the current cement market in the region while still allowing for future market expansion.

Alternative Production Processes

The main component of the cement manufacturing process is the pyroprocessing system. In general, five (5) different production processes have been used in the cement industry to accomplish the pyroprocessing step: the wet process, the long dry process, the semidry process, the dry process with a preheater, and the dry process with a preheater/precalciner. Each of these processes accomplishes the chemical and physical steps to produce the clinker. However, the processes vary with respect to equipment design, method of operation, and fuel consumption. Generally, fuel consumption decreases in the order of the processes listed.

Regardless of the type of pyroprocess utilized, the last component of the pyroprocessing system is the clinker cooler. This process step recoups up to 30 percent of the heat input to the kiln system, locks in desirable product qualities by freezing mineralogy, and makes it possible to handle the cooled clinker

with conventional conveying equipment (EPA, AP-42, Chapter 11.6, Portland Cement Manufacturing, January 1995).

New, modern cement plants employ the dry process with a preheater/precalciner kiln based on the greater energy efficiency, reduced environmental impact, and improved process operation compared to the other types of pyroprocessing systems discussed above. A multi-stage preheater/precalciner kiln design is the most efficient and effective pyroprocessing system and is considered to be the modern standard for new cement manufacturing operations. Replacing existing long, dry kilns with a modern preheater/precalciner kiln results in major energy efficiency gains and reduced air emissions. Therefore, CEMEX proposes to replace its three (3) existing long, dry kilns and associated clinker coolers with a modern, 5-stage preheater/precalciner kiln and associated clinker cooler, with state-of-the-art emissions controls.

Alternative Control Techniques

A detailed analysis of the selected LAER/BACT/BAT and the alternative emissions control technologies and techniques is presented in Section 5.0 *Control Technology Analysis*. CEMEX is proposing state-of-the-art design and control technologies/techniques that will reduce emissions to levels that satisfy the LAER/BACT/BAT requirements.

Conclusion

The Project will utilize highly efficient and proven state-of-the-art technology and operating practices that will minimize air emissions and comply with all applicable Federal and State air emissions regulations. The Project will allow for the manufacture of cement with significantly less air emissions than the facility's existing three (3) older, less reliable, and less efficient long, dry kilns.

The Project will provide economic benefit to the region as a major supplier of cement for development and infrastructure projects. Locally, the reactivated facility will create full-time new jobs and bring economic benefit to the community, both during construction and during operation. The facility also will create indirect full-time new jobs as a result of support/supplier industries and secondary industries attracted by the project, such as truck drivers, mechanics, and various technicians. The increase in full-time jobs will result in more money spent locally. Positive effects on the community such as jobs for local residents and purchases of locally produced goods and services create additional income streams for the area. In addition, both direct and indirect local and state tax revenues will increase. Development and modernization of the borough's industrial zone provides for a wide range of industrial activities that will contribute to the well-being of the borough by diversifying its economy and providing valuable employment opportunities.

Based on the above-described factors, the potential benefits of the project significantly outweigh the potential environmental and social costs imposed as a result of the project's location, construction, or modification.

4.2 Prevention of Significant Deterioration Review

The PSD requirements are contained in 40 CFR Part 52 and adopted in their entirety by the 25 Pa. Code Chapter 127 Subchapter D.

PSD applies to a new major stationary source or to a major modification of a major source (40 CFR 52.21(a)(2)). A Portland Cement Plant is defined as a major stationary source if it emits more than 100 tons per year or more of any regulated NSR pollutant. (40 CFR 52.21 (b)(1)). To be a major modification, a physical change in, or change in the method of operation of, a major stationary source would have to result in both a significant emission increase and a significant net emissions increase of a regulated NSR pollutant (40 CFR 52.21 (b)(2)).

The first step in the PSD applicability analysis is to determine if the proposed project causes a significant emissions increase of a regulated NSR pollutant. The proposed project involves both the installation of new emission units) as well as changes to existing emission units.

For new emissions units per 40 CFR 52.21(a)(iv)(c), the emissions increase is calculated as the difference between the PTE and the baseline actual emissions, as defined in 40 CFR 52.21(b)(48)(i) and (ii). However, for the initial construction of new emissions units, the baseline actual emissions is equal to zero (40 CFR 52.21 (b)(48)(iii)), Therefore, for newly installed emissions units, the emissions increase is the potential to emit.

For existing emissions units per 40 CFR 52.21(a)(iv)(c), the emissions increase is calculated as the difference between the projected actual emissions (40 CFR 52.21(b)(41)) and the baseline actual emissions (40 CFR 52.21(b)(48(ii)). The unit's PTE may be used in lieu of the projected actual emissions (40 CFR 52.21(b)(41)(ii)(d)). CEMEX has elected to use the PTE in place of the provisions (40 CFR 52.21(b)(41)((ii)(a)-(c)) related to excluding emissions that "could have been accommodated during the consecutive 24-month period used to establish baseline actual emissions". Essentially, the baseline actual emissions means the average rate, in tons per year, at which the existing emissions units actually emitted the regulated NSR pollutant during any consecutive twenty-four (24) month period within the ten (10) year period immediately preceding either the actual construction date of the proposed project or the date a complete permit application is received by DEP. A different consecutive twenty-four-month period is allowed for each regulated NSR pollutant. However, the same consecutive twenty-four-month period must be used for all emissions units being changed, for a given regulated NSR pollutant (40 CFR 52.21(b)(48)(ii)(d)).

A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of emissions increases over all emission units of the proposed project (as calculated above) equals or exceeds the PSD significant threshold level (40 CFR 52.21(b)(23)(i)) for that pollutant.

If a significant emissions increase of a regulated NSR pollutant is projected to occur due to the proposed project, the next step in the PSD applicability analysis is to determine if a significant net emissions increase of the regulated NSR pollutant also is projected to occur.

The net emissions increase is calculated as the sum of the significant emissions increase due to the project (as calculated above) and any other creditable increases and decreases in actual emissions at the source that are contemporaneous with the proposed project (40 CFR 52.21(b)(3)(i)(b)). An emissions change is contemporaneous if it occurs from the date five (5) years before construction of the proposed project commences and through the date that the emissions increase from the constructed and operational proposed project occurs (40 CFR 52.21(b)(3)(ii)). A significant net emissions increase of a regulated NSR pollutant is projected to occur if the net emissions increase equals or exceeds the PSD significant amount for that pollutant.

As described earlier in the document, the plant was idled in 2010, except for the cement silos and truck loading operations. Since 2010, the cement manufacturing equipment has been maintained (according to the DEP-approved Deactivation Plan and Maintenance Plan) but has not been reactivated. For PSD purposes, the Plant is still considered a major PSD source with PTE emissions greater than 100 tons/year. The Project is considered a major modification. The emissions include new equipment and the refurbishment of existing equipment. Emissions from new equipment will be based on PTE. The cement terminal operation sources, as well as equipment that will be refurbished, are also conservatively based on PTE. The total emissions associated with the Project, along with the PSD significance levels, are shown in Table 6.

TABLE 6 SUMMARY OF PROJECT EMISSION INCREASES

PSD ANALYSIS	SO_2 (TPY)	NO_X (TPY)	CO (TPY)	PM (TSP) (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	H_2SO_4 (TPY)	CO_2e (TPY)
Project Emissions	228	861	786	159.6	148.5	116.2	63	1,048,072
PSD Significant Emission Rates	40	40	100	25	15	10	7	75,000
SIGNIFICANT EMISSIONS INCREASE?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

5.0 CONTROL TECHNOLOGY ANALYSES

5.1 Introduction

The Wampum plant is classified as a major stationary source and is currently operating under Title V Operating Permit No. 37-00013. As discussed previously, the reactivation project is subject to the PSD requirements codified in 40 CFR §52.21 for NO_2, SO_2, CO, $PM/PM_{10}/PM_{2.5}$, and Greenhouse Gas (GHG) emissions. The federal PSD regulations are adopted and incorporated by reference in their entirety in 25 Pa. Code Chapter 127, Subchapter D (specifically 25 Pa. Code §127.83) and the Commonwealth's State Implementation Plan (SIP) codified in 40 CFR §52.2020. The PSD regulations require that CEMEX apply BACT to emissions of NO_2, SO_2, CO, $PM/PM_{10}/PM_{2.5}$, and GHG. The reactivation project is also subject to the NNSR requirements contained in 25 Pa. Code Chapter 127, Subchapter E for NO_X and VOC emissions. The NNSR regulations require that CEMEX apply LAER to emissions of NO_X and VOC. Furthermore, 25 Pa. Code §127.12(a)(5) requires that CEMEX show that the emissions from a new source will be the minimum attainable through the use of BAT. BACT, LAER, and BAT are defined as follows.

BACT – An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results. [40 CFR §52.21(b)(12)]

LAER – (i) The rate of emissions based on the following, whichever is more stringent:

(A) The most stringent emission limitation which is contained in the implementation plan of a state for the class or category of source unless the owner or operator of the proposed source demonstrates that the limitations are not achievable.

(B) The most stringent emission limitation which is achieved in practice by the class or category of source.

(ii) The application of the term may not allow a new or proposed modified source to emit a pollutant in excess of the amount allowable under an applicable new source standard of performance. [25 Pa. Code §121. 1]

BAT – *Equipment, devices, methods, or techniques as determined by the Department which will prevent, reduce, or control emissions of air contaminants to the maximum degree possible and which are available or may be made available. [25 Pa. Code §121. 1]*

5.2 Control Technology Analysis Methodology

The PSD program requires that a control technology review, a BACT analysis, be performed for each air pollutant that is subject to PSD review. As discussed earlier in this application document, emissions of NO_2, SO_2, CO, PM/PM_{10}/$PM_{2.5}$, H_2SO_4, and GHG are subject to PSD review. As such, a BACT analysis is required for each emission unit that emits NO_2, SO_2, CO, PM/PM_{10}/$PM_{2.5}$, and/or GHG. Emissions of NO_X and VOC are subject to a LAER analysis, as they are precursors to ozone, and the plant is in the OTR.

Chapter B of the EPA's Draft NSR Workshop Manual (EPA's Draft NSR Manual) provides a procedure for use in establishing BACT. This procedure includes a five-step "top-down" process for considering all available control technologies from most stringent to least stringent. The most stringent control technology is considered BACT unless the applicant demonstrates, and the permitting authority agrees, that technical considerations, or energy, environmental, or economic impacts justify elimination of the most stringent technology and selection of a less stringent technology. If the most effective control strategy is eliminated in this fashion, then the next most effective alternative should be evaluated, and so on, until an option is selected as BACT. The "top-down" BACT procedure consists of the following steps:

1. Identify all control technologies.
2. Eliminate technically infeasible options.
3. Rank remaining control technologies by control effectiveness.
4. Evaluate most effective controls and document results.
5. Select BACT.

The LAER analysis methodology is similar to BACT, with the exception that the economic impact is typically not considered for LAER. Also, because BACT and LAER are generally considered to be more stringent or equivalent to BAT, the BACT analysis will satisfy BAT requirements. DEP's BAT regulations are applicable to all emission sources that are required to undergo the DEP Plan Approval permitting process and are intended to ensure that all emission sources apply the best available technology to minimize emissions.

To identify BACT and LAER, CEMEX performed a search of EPA's RACT/BACT/LAER Clearinghouse (RBLC). The RBLC is a compilation of permitted emission limits and controls on specific types of emission units located throughout the United States that have received air permits from various states and other regulatory agencies. A summary of the RBLC search results is provided in Attachment 5. The permitting actions involving emission sources determined to be most similar to CEMEX's proposed emission sources were selected from the search results of the most recent ten years. In addition, to satisfy LAER requirements (for NO_X and VOC), the analyses also contain a review of SIP-regulations to demonstrate that the proposed rates are at least as stringent as any applicable State or local air pollution agency's regulations.

5.3 Summary of BACT/LAER/BAT Determinations

Based on the control technology analysis, CEMEX is proposing the following to satisfy BACT/LAER/BAT.

TABLE 7 SUMMARY OF PROPOSED EMISSIONS LIMITS AND CONTROL TECHNOLOGIES

EMISSION SOURCE	POLLUTANT	EMISSION LIMIT	REGULATORY REQUIREMENT(S)	AVERAGING TIME	CONTROL TECHNOLOGY
Kiln	NO_X	1.50 lb/ton clinker	LAER, BACT, NSPS-F	30-operating day, rolling average	Indirect firing, low-NO_X burners, SCC, and SNCR
	SO_2	0.4 lb/ton clinker	BACT, NSPS-F	30-operating day, rolling average	Alkali absorption in preheater/precalciner system and raw mill; fabric filter alkali filter cake; add-on dry absorbent system
	CO	1.38 lb/ton clinker	BACT	30-operating day, rolling average	Good combustion practices
	VOC	0.08 0.1lb/ton clinker	LAER	Hourly/Annual average	Good combustion practices
	PM (filterable)	0.02 lb/ton clinker	BACT, MACT-LLL, NSPS-F	30-operating day, rolling average	Fabric filter
	PM (condensable)	0.16 lb/ton clinker	BACT		Good combustion practices
	CO_2e	0.92 ton/ton clinker	BACT	30-operating day, rolling average	Good combustion practices, efficiency
	H_2SO_4	0.11 lb/ton clinker	BACT	NA	Alkali absorption in preheater/precalciner system and raw mill; fabric filter alkali filter cake; add-on dry absorbent system
	NH_3	65/11 ppmv	BAT	Hourly/Annual average	Proper design and operation of SNCR
	Dioxin/Furan	0.2 ng/dscm (0.40 ng/dscm if temp. to PM control ≤400 °F)	MACT-LLL, BAT	NA	Good combustion practices
	HCl	3 ppmvd	MACT-LLL, BAT	30-operating day, rolling average	Alkali absorption
	Hg	21 lbs/MMton clinker	MACT-LLL, BAT	30-operating day, rolling average	Activated carbon injection
	THC	24 ppmvd (or 12 ppmvd for total organic HAP)	MACT-LLL, BAT	30-operating day, rolling average	Good combustion practices and activated carbon injection

EMISSION SOURCE	POLLUTANT	EMISSION LIMIT	REGULATORY REQUIREMENT(S)	AVERAGING TIME	CONTROL TECHNOLOGY
Clinker Cooler	PM	0.02 lb/ton clinker	BACT, MACT-LLL, NSPS-F	30-operating day, rolling average	Fabric filter
Process Sources	PM	0.0044 gr/dscf	BACT	NA	Fabric filter dust collector
Transfer Points	PM	99% Control	BACT	NA	Fabric filter dust collector
Storage Piles	PM	NA	BACT	NA	Enclosures, fugitive dust control measures
Roads	PM	NA	BACT	NA	Paving, watering, vehicle speed controls
Emergency Generators	(Combustion pollutants)	Limits per NSPS IIII	BACT/LAER/BAT, NSPS-III	See NSPS, IIII	Mfr guarantee

5.4 Control Technology Analysis for Pyroprocessing System

5.4.1 NO_X Emissions

NO_X is formed in cement pyroprocessing systems as a result of reactions occurring during fuel combustion. The NO_X is formed mainly through two mechanisms during combustion: thermal NO_X formation and fuel NO_X formation. Thermal NO_X is produced by the reaction of oxygen and nitrogen at elevated temperatures. Fuel NO_X arises from the reaction of the organically bound nitrogen in the fuel with oxygen. Thermal NO_X is the most significant NO_X mechanism in kiln combustion.

Fuel NO_X is the NO_X that is formed by the oxidation of nitrogen and nitrogen complexes in fuel. In general, approximately 60 percent of fuel nitrogen is converted to NO_X. The resulting emissions are primarily affected by the nitrogen content of fuel and excess oxygen (O_2) in the flame. Nitrogen in the kiln feed may also contribute to NO_X formation although to a much smaller extent. Although coal has much larger amounts of fuel-bound nitrogen than natural gas, a study of gas-and coal-fired kilns, clearly indicated that gas-fired kilns typically produce almost three times more NO_X than coal-fired ones. This indicates the dominance of thermal NO_X in overall NO_X emissions from cement kilns.

A third, and much less significant, NO_X formation mechanism is "Prompt NO_X". Prompt NO_X is a term applied to the formation of NO_X in the flame surface during luminous oxidation. The formation is instantaneous and does not depend on flame temperature or excess air. This formation may be considered the baseline NO_X level that is present during combustion and is relatively small compared to the other two mechanisms.

In the precalciner, fuel combustion occurs at two locations and each follows a separate mechanism in the formation of NO_X (i.e., thermal NO_X dominates in the kiln burning zone and fuel NO_X dominates in the precalciner). For this reason, the effects of process operation on final NO_X levels are complex and do not necessarily conform to conventional understanding of combustion as defined through steam generation technology (boilers).

Step 1: Identification of Available Control Technologies

The first step in the control technology analysis is to identify and discuss all potentially available control technologies. The starting point for NO_X control is to minimize thermal NO_X formation. Process and

combustion controls, along with measures to minimize fuel consumption can result in some degree of thermal NO_X control. However, because of the high temperature and oxidizing conditions necessary to make cement, there will always be an appreciable amount of thermal NO_X formed. This section describes how the design and operation of the kiln and calciner can minimize the thermal NO_X formation.

Design and Combustion Controls: Indirect Firing/Low-NO_X Burners

Indirect firing with a low NO_X burner creates two combustion zones, a primary and secondary zone, at the end of the burner. In the high-temperature primary zone, combustion is initiated in a fuel-rich environment in the presence of a less than stoichiometric oxygen level. This reducing environment minimizes NO_X formation. In the secondary zone, combustion is completed in an oxygen rich environment. The temperature in the secondary zone is much lower than in the primary zone which minimizes NO_X formation as combustion is completed. All kiln designs largely rely on this indirect firing principle.

Design Controls: Staged Combustion in the Calciner (SCC) (or Multistage Combustion (MSC) or "Low-NO_X Calciner)"

The major cement plant vendors offer some type of Low-NO_X calciner that incorporates staged air, fuel, and/or feed burning locations to create low NO_X zones.

Burning a portion of the fuel in the calciner burner instead of the main kiln burner spreads the thermal load in the pyroprocessing system. It allows much of the combustion to occur at temperatures characteristic of the calciner that are much less than the temperatures occurring near the main kiln burner. This reduces the potential for thermal NO_X formation.

Staged combustion (SC) takes place in and around the precalciner and is accomplished in several ways depending on the system design. The purpose of SC is to burn fuel in two stages, i. e., primary and secondary. Staged air combustion suppresses the formation of NO_X by operating under fuel-rich, reducing conditions (less than stoichiometric oxygen) in the flame or primary zone where most of the NO_X is potentially formed. This zone is followed by oxygen-rich conditions in a downstream, secondary zone where CO is oxidized at a lower temperature with minimal NO_X formation.

To delineate the NO_X control mechanisms of SC, the combustion chemistry of NO_X formation by virtue of fuel nitrogen should be examined. Fuels introduced to the primary combustion zone undergo a pyrolysis that liberates nitrogen originally bound in the fuel. Nitrogen-bearing products that are gaseous will again pyrolyze to form HCN and NHi radicals. With nitric oxide (NO) and oxygen radicals (O_X) already present in the gas stream, the NHi will react as such:

$$NHi + O_X \rightarrow NO +$$

$$NHi + NO \rightarrow N_2 +$$

Because the primary stage of SC is a high-temperature (1,150°C to 1,200°C) reducing environment where CO is prevalent and oxygen radicals are relatively scarce, NHi radicals can scavenge oxygen from NO as shown in the second equation. This phenomenon is the basis for successful NO_X reduction in SC kilns.

Research and actual emission monitoring on preheater/precalciner cement kilns have shown that SC technology applied to the area of the precalciner works to effectively lower NO_X emissions per unit clinker produced. Although potential disadvantages to SC may exist, experience has shown that when included as part of the kiln system design, it will produce a reduction in NO_X emissions with minimal process problems.

Add-on Controls: Selective Non-Catalytic Reduction

SNCR selectively reduces NO_X, at relatively high temperature, using a reagent without the use of catalysts. SNCR involves complex gas-phase reactions between NO and radicals produced by a nitrogen-containing reagent. These reactions favorably occur within a temperature window of approximately 1,600°F to 2,200°F (870°C to 1,200°C). Common reagents used are aqua ammonia (19% or 29% solution) and urea-water solution (50% solution).

Ammonia, the most common reagent, is decomposed by radicals (such as OH^-, and O^-) to NH^-_2. It is the amine radical, NH^-_2, that actually causes the reduction of NO_X in SNCR. Oxygen is required to supply the needed OH^- and O^- radicals. Then, NH^-_2 reduces NO, for example, to molecular nitrogen and water. Urea-water, another common reagent, decomposes to ammonia and carbon dioxide. After this thermal decomposition, the urea-water-based SNCR NO_X reduction follows the same mechanism as the ammonia reaction.

To provide effective NO_X reduction, the reagent and NO_X must be within the optimal temperature window. At temperatures below the optimal temperature window, reaction rates are low resulting in low NO_X reduction and unreacted reagent (leading to ammonia emissions or ammonia slip, for example). At temperatures above the window, the reagent oxidizes to form NO. The specific temperature window depends on such things as the reagent used, the amount of mixing, and residence time.

Preheater/precalciner kiln systems provide accessible regions between the kiln inlet and bottom cyclone of the preheater where the gas temperatures are within the SNCR temperature window. For example, SNCR injection ports can be installed in the combustion zone in the calciner, the oxidation zone of the upper air inlet before the deflection chamber, in the area after the mixing chamber before the inlet to the bottom cyclone, as well as other locations. For SNCR to be effective, the reactants have to be the optimum temperature range for a sufficient time period to allow the reduction reactions to occur. In addition to temperature, the efficiency of the NO_X reduction also depends on many variables including, but not limited to:

- Mixing
    - Mixing (and turbulence) allows for better contact among reactants and creates more homogeneous conditions of temperature, flow and concentration.
- Residence time
    - Mixing takes time.
    - Reagent decomposition times and NO_X reduction reaction times are finite so NO_X reductions are more effective with ample residence time at the optimal temperature.
    - Effective NO_X reduction requires a minimum residence time of about a half a second.
- Uncontrolled NO_X concentration
    - The chemical kinetics of the NO_X reduction reactions are such that the reaction rates are dependent on the initial NO_X concentration; the higher the NO_X concentration, the more productive the NO_X reduction.
    - Percent NO_X reduction performance of SNCR is not a very satisfactory indicator since it greatly depends on the uncontrolled NO_X level. For example, there can be situations of inherently low-NO_X producing systems (e. g. , low-NO_X calciners or systems using feed containing ammonia or kiln operating conditions leading to reducing conditions, that significantly reduce NO_X concentrations) on which SNCR would show relatively low percent reduction performance.

- O_2 concentration
    - Lower O_2 levels produce lower OH^- radicals which slow the rate of the NO_x reduction reactions.
- CO concentration
    - CO competes with NH_3 for the OH^- radicals (that convert NH_3 to NH_2 which, in turn, reduces NO) and negatively affects the efficiency of NO_X reduction.
    - NO_X reduction reactions proceed best with longer residence times and/or at locations beyond where CO has oxidized to Carbon Dioxide (CO_2) ("CO burnout").
- Reagent injection rate and location
    - In theory, two moles of NO_X can be removed by one mole of urea or two moles of ammonia; however, in practice, more than the theoretical amount of reagent is needed to obtain a specific level of NO_X reduction.
    - The selection of one zone for reagent injection cannot reliably assure consistent NO_X reduction results. Multiple levels of injectors can enhance the opportunity for reagent injection at the optimal temperature; however, this adds to the complexity of an already complex reaction process. Also, individually controllable nozzles can enhance NO_X reduction results and minimize ammonia slip.
- Type and design of pyroprocessing system
    - Performance can be affected by other NO_X controls in place such as staged combustion in the calciner (SCC) and multistage combustion (MSC).
- Operating conditions
- Types and composition of fuel and feed
    - The volatility of kiln and calciner fuels may affect performance.
    - The sulfur content of fuels and raw feed (containing pyritic sulfur) may affect performance.
    - The "burnability" of raw materials may affect performance.
    - The ammonia content of raw feed and fuels affect SNCR design and performance.
- Type of cement product produced.

Add-On Controls: Selective Catalytic Reduction (SCR)

The Selective Catalytic Reduction (SCR) process involves injecting ammonia (typically), usually diluted with air or steam, into hot flue gases prior to passing the exhaust stream over a catalyst bed. The optimum temperature for SCR depends on the catalyst but is usually between 300°C and 450°C (570°F to 840°F). The flue gases are then passed through a catalyst bed where NO_X is reduced to elemental nitrogen (N_2) and water. The catalyst bed is sized, based on exhaust gas parameters, to provide a certain gas velocity and residence time in the catalyst bed. The catalyst shape and reactor design vary depending upon the manufacturer. Titanium dioxide (TiO_2) and vanadium pentoxide (V_2O_5) mixtures are most commonly used as catalysts due to their resistance to sulfur oxides (SO_X) poisoning. Zeolite-based catalyst materials have also been developed capable of operating at higher temperatures than conventional metal-based catalysts.

There are several potential locations for catalyst placement within the kiln system. A "high dust" application refers to a location that is upstream of a particulate control device; hence the catalyst is subject to extraordinarily high dust loading. A "semi dust" application is at a location just downstream of the pyroprocessing system. In the "semi dust" configuration the gas stream passes through a hot ESP to remove the majority of the dust prior to entering the SCR. The gas may then pass through a second, more efficient particulate control device after exiting the SCR to remove the remaining particulate to acceptable emissions rates. A "low dust" or "tail end" application refers to a location downstream of the particulate control device. This location reduces the dust loading on a catalyst; however, the gas temperatures are below the temperature window for effective SCR operation. Thus, the gases must be reheated to employ SCR resulting in additional energy consumption and combustion emissions.

For preheater/precalciner kilns, placement at the preheater exit satisfies the temperature requirements for SCR, but most commonly would require a high dust location. A preheater kiln that uses an in-line raw mill for grinding and drying raw materials, however, has an exit temperature after the dust collector of 90°C-120°C. For this case, a "low dust" configuration would be used, and the exhaust gases would have to be reheated.

Being at the appropriate temperature is critical, but the feasibility and effectiveness of the NO_X reduction also depends on many aspects of its design and operation including, but not limited to:

- Mixing
    - The reagent must be dispersed and mixed throughout the flue gas to ensure sufficient contact between the reactants. Mixing of the flue gas and ammonia occurs before entering the SCR reactor.
    - SCR designs must incorporate adequate duct length between the ammonia injection and the reactor inlet to allow for mixing.
- Residence time
    - Higher residence times generally result in higher NO_X removal rates.
- Uncontrolled NO_X concentration
    - The chemical kinetics of the NO_X reduction reactions are such that the reaction rates are dependent on the initial NO_X concentration; the higher the NO_X concentration, the more productive the NO_X reduction.
    - For a given NO_X removal efficiency, higher NO_X levels at the SCR inlet require more catalyst volume.
- Catalyst activity
    - A higher catalyst activity results in a faster reaction rate and greater NO_X reduction.
    - Catalyst activity is a function of many variables, including catalyst composition and structure, diffusion rates, mass transfer rates, gas temperature, and gas composition.
    - As the catalyst activity decreases, the NO_X removal efficiency is usually kept constant by injecting more ammonia, thereby increasing the ammonia slip. When the ammonia slip reaches the maximum design or permitted level, the catalyst or a catalyst layer must be cleaned, rejuvenated, or regenerated, or new catalyst must be installed.

- Pressure drop
    - Deposition of fly ash and other particulates on the catalyst increases the pressure drop across the catalyst.
    - Cement dust can be sticky, creating residue buildups that can be difficult to remove. As such, improving the resulting pressure drop may require additional catalyst cleaning and catalysts with larger pitch.
- Dust loading/ash management
    - Dust/particulates can mask and block the catalyst surface and inhibit the SCR NO_X reduction.
    - Proper removal of dust from the catalyst is crucial for proper operation of a "high dust" SCR application.
    - Soot blowers and sonic horns are used for frequent dust cleaning of the catalyst in "high dust" applications.
- Catalyst pitch (basically, the width of the catalyst cell)
    - Appropriate catalyst pitch is important to ensure that ash will not deposit and bridge over catalyst cells and pores (i.e., plug the catalyst). Plugging of the catalyst reduces the effective surface area by decreasing the number of active sites available for the NO_X reduction reaction.
    - Catalysts with larger pitch should be used to reduce the potential for catalyst plugging. However, the larger pitch reduces the surface area per unit volume and may necessitate additional catalyst volume to meet NO_X reduction and ammonia slip targets.
- Catalyst deactivation
    - Poisoning
        - Poisoning is a catalyst deactivation process resulting from a chemical reaction between a "poison" in the gas stream and a catalyst active site which leaves the active site inert. Alkaline metals (such as sodium and potassium), which are present especially in high alkaline raw feed operations, are catalyst poisons.
        - The presence of SO_2 in the kiln gas prohibits the utilization of low temperature SCR catalyst systems. (Pyritic sulfur in the limestone and other mined raw materials results in variable kiln systems SO_2 emissions.) Where sulfur/SO_2 is present, the SCR must be operated above the temperature range for ammonium bisulfate salt formation (ABS) or it will plug or poison the catalyst.
    - Surface plugging and fouling
        - Surface plugging and fouling are catalyst deactivation processes where major sections of the catalyst are physically blocked by dust accumulation. Fouling is a process where particulates deposit on the catalyst surface or pores physically blocking the active sites.
    - Pore plugging and masking
        - Pore plugging, and masking are catalyst deactivation processes resulting from the microscopic blocking of an active site caused by chemical deposition within a catalyst pore.

- Sticky deposits due to alkali salts (mainly potassium and sodium chloride and sulfates) may cause plugging.
- CaO (lime) reacts with sulfur trioxide (SO_3) (or H_2SO_4) within a pore forming a larger calcium sulfate ($CaSO_4$) particle that blocks (masks) the pore.

- Erosion
  - Erosion is the permanent loss of catalyst activity due to the physical abrasion caused by impinging dust.
- Thermal sintering
  - Sintering is the permanent catalyst deactivation due to exposure to temperatures outside the catalyst range.
  - A bypass (providing no control of NO_X emissions) must be incorporated into the design of the system to use during temperature excursions to prevent sintering of the catalyst.

Step 2: Elimination of Technically Infeasible Control Technologies

The second step in the control technology analysis is to eliminate any technically infeasible or undemonstrated control technologies. The design and combustion controls discussed above all technically feasible, and the proposed pyroprocessing system at Wampum will incorporate those, specifically, it will use indirect firing and have low-NO_X burners in the kiln and will have a calciner with a SC design. Likewise, SNCR is technically feasible. The design and combustion controls, along with SNCR, will be capable of achieving a 1.5 lb NO_X/ton clinker emission rate.

Although SCR has been used for NO_X control for a number of years on fossil fuel combustion units, there are only a few commercial installations of SCR for NO_X control on cement kilns. Most of these are on kilns in Europe. There are a number of design and operating issues associated with using SCR on cement kilns and particularly for kilns in the US where raw material chemical properties differ from those in the European kilns. The most significant difference between most U. S. kilns and the European kilns with SCRs is the presence and variability of pyritic sulfur in the limestone and other mined raw materials resulting in variable kiln system SO_2 emissions.

SCR issues in cement kiln applications include:

- High temperature needs of the catalyst (either need to re-heat exhaust gas or install system upstream of particulate control where dust loading is much higher);
- Dust plugging of the catalyst;
- Poisoning of the catalyst by sodium, potassium, and arsenic trioxide (found in raw materials and product);
- Deactivation of the catalyst by pyritic sulfur found in the raw materials (more so in US raw materials than European);
- Lack of data on potential operating life of catalyst for US plants given above design issues;
- Per a Portland Cement Association (PCA) presentation to the EPA Office of Management and Budget (OMB): “Ozone NAAQS Concerns” presented September 28, 2015, SCR can have installation and operating costs up to 10 times that of SNCR systems.

As a result, SCR systems for NOx control are not considered technologically or economically feasible for NOx control on kilns, in particular for controlling to 1.5 lb/ton clinker because:

- SCR systems have not been used full scale at any US cement plant except for a full-scale SCR test at the Lafarge Joppa Kiln No. 1 is the result of an EPA consent decree. Even with the SCR requirement, the Lafarge Joppa Kiln 1 is an older long dry kiln only subject to an emission limit of 3.21 lb NO_X/ton of clinker on a 30-day rolling average.
- A Texas Commission on Environmental Quality (TCEQ) July 6, 2016 "Reasonably Available Control Measures Analysis" states that "Based on the information currently available, the TCEQ does not consider SCR or hybrid SCR-SNCR systems on the Ellis County Portland cement kilns to be adequately demonstrated with regard to technological or economic feasibility. "
- Installation and operating cost up to 10 times that of SNCR. This cost is especially infeasible when considering the small incremental reduction potential for systems for which SNCR is already installed and controlling NO_X emissions at around 1.5 lb/ton to 2.0 lb/ton clinker.
- EPA summarized the cement industry's experience with SCR NO_X control in its 2016 SCR Cost Manual as follows:

"In the cement industry, pilot tests in the 1970s and 1990s showed SCR could be a feasible control technology for cement kilns. Building on that experience, SCRs were first installed in Europe in 2001. Today, SCR has been successfully implemented at seven European cement plants in Solnhofer, Germany (operated from 2001 until 2006), Bergamo, Italy (2006), Sarchi, Italy (2007), Mergelstetten, Germany (2010), Rohrdorf, Germany (2011), Mannersdorf, Austria (2012), and Rezatto, Italy (2015). [94, 98, 99]. As of 2015, there is only one cement plant in the U. S. has installed an SCR. This SCR began operation in 2013 and is installed after an electrostatic precipitator. The control efficiency for the system is reported to be about 80%, which is consistent with SCR applications on European kilns. SCRs have not seen widespread use in the U.S. cement industry mainly due to industry concerns regarding potential problems caused by high-dust levels and catalyst deactivation by high SO_3 concentrations from pyritic sulfur found in the raw materials used by U. S. cement plants. The SO_3 could react with calcium oxide in the flue gas to form calcium sulfate and with ammonia to form ammonium bisulfate. The calcium sulfate could deactivate the catalyst, while the ammonium bisulfate could cause catalyst plugging. There have been concerns expressed about the potential for catalyst poisoning by sodium, potassium, and arsenic trioxide. Finally, other concerns expressed are that dioxins and furans may form in the SCR due to combustion gases remaining at temperatures between 450°F and 750°F. These and other concerns regarding the implementation of SCR to the cement industry are discussed in detail in "Alternative Control Techniques Document Update – NO_X Emissions from New Cement Kilns".

Also, whether or not SCR is considered technically feasible is not of material importance. As will be discussed below, CEMEX is agreeing to an emissions limit of 1.5 lb NO_X/ton clinker, the lowest level permitted.

Step 3: Ranking of Technically Feasible Control Options

The third step in the control technology analysis is to rank remaining control technologies by control effectiveness. The NO_X technologies that are technically feasible are SNCR, indirect firing, low-NO_X kiln burner, and SCC. As the combination of these technologies will be proposed as LAER/BACT, there is no need to break them out for individual rankings.

Step 4: Evaluation of Technically Feasible Control Options

The fourth step in the control technology analysis is to complete the analysis of the technically feasible control technologies and to document the results. The feasible control technologies are typically evaluated on the basis of economic, energy, and environmental considerations. The design/combustion controls are technically feasible. With regard to add-on control technologies, SNCR is the technology that is evaluated further.

As with every technology there are operational and environmental issues. Some issues associated with SNCR include, but are not limited to:

- Ammonia slip and its effects
    - Ammonia slip is expected even at stoichiometric reagent injection rates.
    - Insufficient mixing, residence time, temperature range and excess reagent injection lead to ammonia slip.
    - Higher NO_X reduction rates requiring greater than stoichiometric reagent injection rates lead to ammonia slip.
    - Ammonia released from heating ammonia-containing raw materials may lead to ammonia slip.
    - Wasted reagent (as indicated by ammonia slip) increases costs of SNCR operation.
    - Ammonia slip may result in a visible detached plume as a result of ammonia combining with sulfates and chlorides (from fuels and raw feed) to form inorganic condensable salts (ammonium chlorides and ammonium sulfates) which become a significant source of condensable PM emissions.
    - Excess ammonia can react with SO_2 liberated from sulfur-containing fuels and raw feed to form ammonium bisulfate and ammonium sulfate. These compounds are corrosive and sticky and can be deposited (build-up) on cooler internal surfaces of the preheater causing plugging and other issues with kiln operation. Also, downstream fouling of a baghouse is possible.
- Increased CO emissions possible
- Increased N_2O emissions possible (especially when using a urea reagent)
- SNCR is not viable for a bypass (lower temperature) stack.

Even with the above operational and environmental issues, CEMEX agrees that SNCR is an appropriate add-on technology to achieve LAER/BACT.

Step 5: Selection of BACT & LAER

Attachment 5 contains data from a retrieval from EPA's RBLC Clearinghouse showing the NO_X limits for cement plants permitted over the past 10 years.

In addition, for LAER, the applicant must demonstrate that there are no SIP requirements less than the level being proposed. Table 8 shows the NO_X limits for preheater/precalciner kiln designs in various states' regulations.

CEMEX proposes an emission limit of 1.50 lbs/ton of clinker, 30-day rolling average. Compliance with this limit will be determined through an initial performance test and with a NOx CEMS on the main kiln stack. This averaging time is appropriate to account for the variability in NO_X emissions from cement kilns and is consistent with the NSPS, Subpart F for cement kilns. This limit will be achieved through a combination of indirect firing and low NO_X burners, an SCC design, proper combustion practices, and SNCR. This emission limit is equivalent to the lowest NO_X emission level established as BACT or demonstrated as LAER in the U.S. for cement kilns.

TABLE 8 STATE/DISTRICT KILN NO_X EMISSION LIMITS FOR PREHEATER/PRECALCINER KILNS

STATE AGENCY	CITATION	NO_X RACT REQUIREMENT	EMISSION RATE (LB NO_X/TON CLINKER PRODUCED)	AVERAGING PERIOD
New York	6 NYCRR Subpart 220-1.6	Develop site-specific RACT plan	-	-
Maryland	COMAR 26.11.30.07	Pre-calciner kilns built on or after 4/1/17	2.4	30-day rolling avg basis
Pennsylvania	025 Pa. Code § 129.97(h)(3)(ii)	Preheater & precalciner	2.36	30-day rolling avg basis
Alabama	ADEM Admin Code 335-3-8.01	Preheater ≥16; Precalciner & PH/PC ≥22 TPH LNB or mid-kiln firing or equivalent	-	ozone season
Kentucky	401 KAR 51:170	Preheater≥16 ; Preheater or PH/PC ≥22	6.6	30-day rolling avg basis; ozone season
South Carolina	DHEC Reg 61 - 62.5; Std. No. 5.2	LNB or equivalent technology capable of achieving a 30% reduction	30% reduction	-
Tennessee	1200-3-27-.04	Preheater ≥16 TPH; Precalciner & PH/PC ≥22 TPH LNB or mid-kiln firing or similar controls	-	ozone season
Illinois	IAC 217.224	Preheater kiln	3.8	ozone season and annual basis
		Preheater/precalciner kiln	2.8	ozone season and annual basis
Indiana	326 IAC 10-1-4	Preheater kiln ≥20 TPH	5.9	operating day basis
		Preheater kiln ≥20 TPH	4.4	30-day rolling avg basis
Indiana	326 IAC 10-3-3	Preheater kiln ≥16 TPH	3.8	ozone season

STATE AGENCY	CITATION	NO_X RACT REQUIREMENT	EMISSION RATE (LB NO_X/TON CLINKER PRODUCED)	AVERAGING PERIOD
		Precalciner & PH/PC ≥22 TPH	2.8	ozone season
Michigan	R336.1817	Preheater kiln ≥16 TPH	3.8	ozone control period basis
		Precalciner PH/PC ≥22 TPH	2.8	ozone control period basis
Missouri	10 CSR 10-6.380	Preheater kiln	4.1	ozone control period basis
		Preheater/precalciner	2.7	ozone control period basis
Ohio	OAC 3745-14-11	Preheater ≥16 TPH LNB or mid-kiln firing or similar controls	-	ozone season
		Precalciner PH/PC ≥22 TPH LNB or mid-kiln firing or similar controls	-	ozone season
Texas	30 TAC 117.3110	Preheater kilns	3.8	30-day rolling avg basis
		Preheater/precalciner or PC kilns	2.8	30-day rolling avg basis
Eastern Kern County APCD	425.3 (amended 3/8/18)	Kiln	2.8	30-operating day rolling average
		Kiln with LNB or low-NO_X precalciner if operational by 1/1/17	3.4	30-operating day rolling average
SCAQMD	Rule 1112	Any gray cement kiln	11.6	24 consecutive hours
		Any gray cement kiln	6.4	30 consecutive day basis
MDAQMD	Rule 1161	Preheater/precalciner kilns	2.8	30 consecutive day avg basis
		Preheater/precalciner kilns with >15 percent heat input from low carbon fuels	3.4	30 consecutive day avg basis

5.4.2 SO_2 Emissions

Sulfur oxides, mainly SO_2, are generated from the sulfur compounds in the raw materials and, to a lesser extent, from sulfur in fuels used to fire the preheater/precalciner kiln system. The sulfur content of the raw materials and fuels is expected to vary over time. SO_2 is both liberated and absorbed throughout the pyroprocessing system, starting at the raw mill, continuing through the preheating/precalcining and burning zones, and ending with clinker production. Sulfides from the raw material (limestone) are the predominant source of SO_2. A smaller quantity of SO_2 is liberated from sulfates in fuel.

Step 1: Identification of Available Control Technologies

Emissions of SO_2 are primarily dependent on the concentration of pyritic sulfur in the limestone and the process conditions. SO_2 emissions from preheater/precalciner kiln systems with in-line raw mills are controlled within the process itself (inherent dry scrubbing) by absorbing SO_2 primarily with calcium carbonate ($CaCO_3$) in the raw feed material. The absorption takes place in the kiln, precalciner, preheater, and raw mill. Additional methods of reducing SO_2 include process modifications and add-on flue gas desulfurization systems. The degree to which each of these methods affect SO_2 reduction can vary considerably depending on several process parameters that will be discussed in the following sections.

Process Design: Inherent Dry Scrubbing

Sulfur liberation and absorption processes take place in the rotary kiln, in the precalciner, and in the lower sections of the preheater tower. Fuels are burned in the kiln or calciner. Fuel-produced SO_2 is readily scrubbed in the calcining zone or combined with alkalis in the kiln and readily absorbed into the kiln feed material, product (clinker) matrix and kiln dust. The raw mill and preheater/precalciner use kiln exhaust gases to heat and partially calcine the raw feed before it enters the rotary kiln. The counter flow of raw materials and exhaust gases in the raw mill and preheater tower, in effect, act as an inherent dry scrubber to control SO_2 emissions creating calcium sulfite ($CaSO_3$) and calcium sulfate ($CaSO_4$), which either pass directly with the raw materials to the burning zone or are collected by the proposed main baghouse and recirculated back into the raw material stream.

Kiln gases pass through the raw grinding mill when it is running, where additional SO_2 is absorbed into the raw material.

Raw Material Sulfur Reduction

Switching from raw feed materials with high sulfur contents to those with low sulfur contents could reduce potential SO_2 emissions. Limestone always contains sulfates, and often contains sulfur-rich pyrite (FeS_2). Pyrite has been identified as the cause of high SO_2 emissions at cement plants throughout the U.S. High pyrite limestone could be replaced either by pyrite free limestone or other calcium-rich products.

However, because of the huge volume of limestone used, it is not feasible to replace the limestone that is available at CEMEX's nearby quarry by importing lower sulfur, limestone from other locations. Sulfur is also present in small quantities in other raw materials and fuels used in the cement making process. Limiting the sulfur contents in these other raw materials would have little effect on the reduction of potential SO_2 emissions.

Add-On Controls: Wet Scrubbing

Wet scrubbing with aqueous alkaline solution can reduce high levels of SO_2 emissions. SO_2 is highly soluble in aqueous solutions and is readily neutralized by alkaline. Wet scrubbing can also remove some particulate matter, VOCs, and acid gases. As applied to cement plants, the scrubber is located after the primary PM control device and minimal additional particulate is removed.

The solids in mist carryover from the scrubber can in some cases be greater than the inlet particulate loading from the fabric filter. In theory, wet scrubbing produces a $CaSO_4$ byproduct, typically referred to as synthetic gypsum. However, in practice, not all cement plants that have used wet scrubbing have been successful in obtaining useable synthetic gypsum. If the cement plant can reclaim the scrubber sludge as synthetic gypsum and reincorporate it in the finish grinding process as synthetic gypsum, the overall environmental benefits associated with a wet scrubber can be considerable. However, wet scrubbing

increases the water demand for the plant and has the potential to introduce a new water pollution source. Wastewater generated by the scrubber must be properly treated and disposed or recycled as appropriate.

Application of a wet scrubber requires passing the exhaust gases through a particulate control device to reduce the dust load. Next, the exhaust gas is cooled by spraying quench water or a slurried reagent (such as slaked lime or finely ground limestone) in an absorption chamber. SO_2 is scrubbed from the exhaust gas by the reaction with the slurried lime ($Ca(OH)_2$) or limestone (calcium carbonate). The $Ca(OH)_2$ or calcium carbonate reacts with the SO_2 to form synthetic gypsum ($CaSO_4 – 2H_2O$). In theory, the synthetic gypsum precipitates into small crystals that are dewatered. The dewatered synthetic gypsum can then be used to supplement purchased gypsum in the production of cement and represents a potential beneficial reuse of byproduct materials.

Add-On Controls: Wet Absorbent Addition

Wet absorbent addition (WAA) to the process exhaust gas stream can reduce high levels of SO_2 emissions in dry cement kiln systems. Lime and hydrated lime can be used for this purpose. Wet absorbent addition is limited to kiln systems where the lime slurry droplet can evaporate to dryness before entering the PM control device. Various types of wet absorbent systems have been used on dry kilns, with lime slurry addition being the most effective.

With wet absorbent addition, calcium oxide (CaO) or calcium hydroxide [$Ca(OH)_2$] slurry is injected into the process gas stream. Solid particles of $CaSO_3$ or $CaSO_4$ are produced, which are removed from the gas stream along with excess reagent by a PM control device. The SO_2 removal efficiency varies widely depending on the point of introduction into the process according to the temperature, degree of mixing, properties of the absorbent (size, surface area, etc.), and retention time.

In a dry process cement kiln system, the gases contain a low concentration of water vapor at an elevated temperature and must be cooled and humidified prior to entering the baghouse or ESP. Lime or calcium hydrate slurry can be introduced with the spray cooling water. Flue gas temperatures are reduced through the heat absorbed as sensible heat from evaporation of water. These temperatures are defined by the system design, kiln heat balance, amount of air in-leakage, and radiant and convective heat losses.

Add-On Controls: Dry Absorbent Addition

Dry absorbent addition (DAA) to the process exhaust gas stream can reduce high levels of SO_2 emissions. Lime or hydrated lime are generally used for this purpose.

With absorbent addition, dry CaO or $Ca(OH)_2$ is injected into the process gas stream. Solid particles of $CaSO_3$ or $CaSO_4$ are produced, which are removed from the gas stream along with excess reagent by a PM control device in the process flow. The SO_2 removal efficiency varies widely depending on the point of introduction into the process according to the temperature, degree of mixing, and retention time.

Typically, the molar ratio (Ca/S) for absorption is on the order of 3 to 15 and requires approximately 2 seconds for completion. Initial surface reactions occur in the first 0.1 second and the coating retards reaction with the bulk of the particle. For increased effectiveness a very fine particle is required or a high Ca/S ratio.

For the process to be implemented, hydrate would be received by truck, pneumatically conveyed to a storage silo, and then injected through nozzles into the gas stream. Complete and uniform distribution and mixing in the gas stream are necessary. The best location for injection is at the preheater exhaust, which allows adequate residence time for reaction.

Add-On Controls: D-SO_x System

The D-SO_X cyclone system is designed to use some of the free lime (CaO) that is created in the calciner to reduce SO_2 emissions. A portion of the calciner exit gas (about 5% for plants with significant pyritic sulfur) is taken off of the calciner exit duct and goes up to a collection cyclone at the top of the preheater tower which separates most of the entrained dust from the gas. The captured dust is then fed to the cyclone exit duct where the pyritic sulfur is converted to SO_2. The free lime in the calciner dust absorbs some of the SO_2. The expected control efficiency is relatively low and reported to be in the range of 25 to 30 percent. The exit gas from the D-SO_X cyclone is returned to the outlet of the second stage preheater cyclone. A natural draft is created in the system.

Step 2: Elimination of Technically Infeasible Control Technologies

Each control technology was considered and those that were infeasible based on physical, chemical, and engineering principles or undemonstrated in the Portland cement industry were eliminated. In addition, technologies that cannot meet the required NSPS emission limit of 0.4 lb/ton clinker, 30-day rolling average, are eliminated.

Inherent dry scrubbing has been demonstrated as technically feasible as an inherent process technology. However, additional controls are likely required to meet the NSPS emission limit. This inherent control method is considered the baseline configuration and is not considered further in this control technology analysis

Regarding raw material sulfur reduction, because of the huge volume of limestone used, it is not feasible to replace the limestone that is available at CEMEX's nearby quarry by importing lower sulfur, limestone from other locations. Sulfur is also present in small quantities in other raw materials and fuels used in the cement making process. Limiting the sulfur contents in these other raw materials would have little effect on the reduction of potential SO_2 emissions. Consequently, this control technique is not considered a feasible option and is not considered further in this control technology analysis.

Wet scrubbing, wet absorbent addition, dry absorbent addition and the D-SO_X System are being employed at cement plants are all are technically feasible control options.

Step 3: Ranking of Technically Feasible Control Options

The third step in the control technology analysis is to rank remaining control technologies by control effectiveness (See Table 9). All of the technologies determined to be technically feasible are added to the base case condition of inherent dry scrubbing. The SO_2 control technologies determined to be technically feasible are a wet scrubbing, WAA, DAA and the D-SO_X System.

TABLE 9 CONTROL EFFECTIVENESS FOR SO_2 EMISSIONS

CONTROL TECHNOLOGY	CONTROL EFFICIENCY (%)
Wet Scrubbing System (Post-Baghouse)	>50
WAA (Preheater Gases)	>50
DAA (Preheater Gases)	>50
D-SO_x Cyclone (Preheater Gases)	< 50
Inherent Dry Scrubbing (Base Case)	NA

Step 4: Evaluation of Technically Feasible Control Options

Regarding the D-SO_X System, it can be eliminated from further consideration at this point because the SO_2 removal efficiency is lower than the top three available options.

Regarding wet scrubbing, there are several disadvantages, and adverse economic, energy and environmental effects, including:

- A wet scrubber would require significant quantities of water per minute, and the water would be vaporized and emitted as a steam/condensation plume from the stack.
- If the synthetic gypsum byproduct cannot be effectively crystallized or cannot meet quality standards for use as a cement additive, as has been the experienced by some cement plants utilizing wet scrubbing systems, the scrubber sludge must be disposed of at considerable cost.
- If the liquid blowdown containing dissolved solids (alkali salts) cannot be recycled back into the process, the liquid blowdown would require treatment and disposal.
- Because a scrubber would be located downstream of the PM control devices, aerosols from the scrubber could be emitted from the kiln stack. These aerosols could increase the PM loading from the source and build up on equipment used in the exhaust gas processing system (ID fans, etc.).
- Wet scrubbers produce an exhaust gas stream that is lower in temperature than otherwise would be the case. If it is necessary for the gas to be reheated for corrosion prevention, additional NO_X and CO would be generated by the additional fuel combustion.
- The static pressure drop through the wet scrubber and demister increases the electrical energy demand for the project and has an impact on energy usage at the site.
- Under optimum conditions, a wet scrubber would have no adverse product impacts. There would be no process impact if the waste is disposed of, but impacts are possible if synthetic gypsum is returned to the process. Changes in process quality are difficult to predict prior to scrubber startup in that the quality of synthetic gypsum is site-specific.

Regarding wet absorbent addition, there are several disadvantages, and adverse economic, energy and environmental effects, including:

- Applying this type of control system to preheater/precalciner kiln system may have impacts on the thermal efficiency of the system. The heat exchange processes that take place in the precalciner, preheater, and raw mill are critical to the overall thermal efficiency of the process. Gases from the preheater are routed to the raw mill to aid in the grinding and drying process. If the WAA system is installed prior to the raw mill, the reduction in gas temperatures from the spray drying process would decrease the ability of the gases to dry the materials in the raw mill. To adjust for the temperature decrease, additional heat energy would be necessary in the raw mill.
- If additional heat input is required, increases in energy, cost, and emissions of other pollutants (such as NO_X and CO) would result from increased fuel burning and additional fan horsepower.
- If the WAA system were installed after the raw mill, it is unlikely that the system could sufficiently dry the gases prior to exhausting them to the baghouse. Therefore, additional heat energy would again be necessary to ensure that the added moisture in the exhaust gases did not condense in the baghouse.
- If the lime slurry droplet cannot evaporate to dryness before entering the PM control device, effects of moisture likely will have detrimental effects on the PM control system

- The injection of wet slurry is not expected to have significant process impacts except in applications with high uncontrolled SO_2 emissions and high dosage rates, when excess sulfate could affect kiln chemistry and product quality

Regarding dry absorbent addition, no adverse environmental impacts are typically expected from the use of dry absorption. The change in energy required to implement dry adsorption is minimal and does not typically result in adverse energy impact. The injection of dry absorbent is not generally expected to have a significant process impact. However, with high uncontrolled SO_2 emissions, high dosage rates could affect kiln chemistry and product quality.

Step 5: Selection of BACT

Attachment 5contains data from a retrieval from EPA's RBLC Clearinghouse showing the SO_2 limits for cement plants permitted over the past 10 years.

CEMEX proposes an emission limit of 0.4 lbs SO_2 /ton of clinker, 30-day rolling average. Compliance with the SO_2 BACT limit will be determined through an initial performance test and an SO_2 CEMS on the main kiln stack. This averaging time is appropriate to account for the variability in SO_2 emissions from cement kilns and is consistent with the NSPS, Subpart F for cement kilns. This limit will be achieved through alkali absorption inherent in the preheater/precalciner kiln system and raw mill and by the fabric filter (baghouse) control device's alkali filter cake. In addition, an add-on dry absorbent addition (the hydrated lime) system will be used as necessary.

5.4.3 CO Emissions

CO emissions from cement kiln pyroprocessing systems generally occur from two processes:
1) decomposition of the organic material in the kiln feed and 2) incomplete combustion of the fuel. In addition, some studies indicate that SNCR (used for NO_X control) can result in increased CO emissions.

In addition to the design and material characteristics affecting CO emissions, there are operating conditions that continually occur in a well-operated cement plant that create a great deal of variability in CO emissions. These conditions and factors include material flushes, build up, blockages, material burnability, and changes in fuel and raw meal characteristics. These factors require constant adjustment in plant operations to maintain a smooth-running plant and a uniform clinker quality.

These adjustments are accomplished through a series of control feedback loops that automatically adjust fuel and feed rates, fan speeds, and other factors. The adjustments are most effectively made in small increments to avoid excessively overshooting or undershooting the set point of the burning zone temperature and kiln exit gas composition.

Even in a well-operated plant there is significant short-term variability of CO emissions. The variability of CO emissions supports a higher short-term emission rate than the annual average rate.

In a preheater/precalciner design, the feed is introduced to the exhaust stream from the preheater and preheated through a series of stages in a countercurrent flow design. In the process of heating, organic materials naturally occurring in the feed are progressively heated and begin to degrade. The heating at relatively low temperature and in a low oxygen atmosphere results in complex organic molecules being cracked, recombined, and re-ordered until the species are reduced to short-chain VOCs, CO and/or CO_2. During this process, a significant fraction of the organic carbon is fully oxidized to CO_2.

A similar factor that influences potential CO emissions from feed materials is the volatility of carbon in the feed. The rationale is that the carbon volatilizing in the lower section of the preheater (i.e., at the higher temperatures) is more likely to fully oxidize to CO_2 than carbon volatilizing in the upper portions of the tower where the temperatures are much lower.

As previously described in the application document, there is a quarry nearby which will continue to be used to provide limestone to the plant.

Emissions of CO may be generated as a product of incomplete combustion of fuel in the precalciner vessel. In modern preheater/precalciner designs, fuel is burned in the kiln and the calciner. In the calciner, fuel is burned in suspension with the raw meal. The precalciner vessel is designed to decarbonize (or calcine) the raw feed simultaneously with the combustion of fuel in suspension.

CEMEX will be using an SCC design that will provide NO_X control. The SCC design generates a reducing atmosphere to enhance NO_X reduction. As a result of this reducing atmosphere, however, CO generation is increased. The CO emissions can be mitigated to some degree by the introduction of tertiary combustion air prior to the bottom cyclone of the preheater with increased mixing. In addition, sufficient residence time (i.e., accomplished by the size of calciner and length of upper duct leaving the calciner) will help to promote the CO "burnout".

It has been reported that CO emissions can increase with SNCR in some plant designs. As mentioned above, when a low-NO_X calciner is used, secondary or tertiary air is required to complete the burnout of CO. The oxidation of CO to CO_2 uses the same OH* radicals that react with ammonia used in an SNCR system to produce the NH_2* radicals. Thus, for SNCR to be effective without significantly increasing CO emissions (because of the competition between CO and ammonia for the OH* radicals), there must be sufficient gas residence time between the introduction of the secondary or tertiary air and the introduction of ammonia for CO oxidation to occur.

Step 1: Identification of Available Control Technologies

Potentially available control technologies are described in the following.

Good Combustion Practices/Equipment Design

Since CO emissions are due in part to incomplete fuel combustion, optimizing combustion practices should result in minimizing those emissions. The fuel cost for a commodity like Portland cement is a substantial part of the manufacturing cost. Optimum, uniform combustion in the pyroprocessing system minimizes fuel consumption. As such, a cement manufacturer is highly motivated to operate a system as efficiently as possible. Efficient fuel combustion requires sufficient oxygen, and adequate time, temperature and turbulence to oxidize the carbon compounds.

The proposed design, a preheater/precalciner kiln, includes many features intended to employ good combustion practices and reduce energy consumption, including use of preheater exhaust gases to provide heat to the coal mill and the raw mill. Good combustion practices will extract the maximum thermal energy from fuels while generating a minimum quantity of pollutants.

The plant will be equipped with sophisticated process control systems to monitor, control, and evaluate raw materials, fuels, and the manufacturing process. System operators and supervisors will be fully trained in the use of process control systems to optimize all phases of plant operation, including combustion.

Raw Material Considerations

As described previously, the characteristics of the feed impacts the quantity of CO emissions generated. The limestone used for the Wampum plant comes from a nearby quarry, so the close proximity to the plant minimizes adverse environmental impacts that would be incurred if the limestone had to be transported from a more distant location.

Step 2: Elimination of Technically Infeasible Control Technologies

Employing good combustion practices is a technically feasible option and will be further considered in this control technology analysis.

The characteristics of the feed impacts the quantity of CO emissions generated. The limestone used for this project comes from a nearby quarry, so the close proximity to the plant minimizes adverse environmental impacts that would be incurred if the limestone had to be transported from a more distant location. As such, considering importing limestone is not feasible.

Step 3: Ranking of Technically Feasible Control Options

The control technology that is technically feasible is using good combustion practices.

Step 4: Evaluation of Technically Feasible Control Options

As mentioned before, good combustion practices is technically feasible and will be used.

Step 5: Selection of BACT

Attachment 5 contains data from a retrieval from EPA's RBLC Clearinghouse showing the CO limits for cement plants permitted over the past 10 years. All of these entries indicate good combustion controls as BACT.

CEMEX proposes an emission limit of 1.38 lbs CO /ton of clinker,. 30-day rolling average. Compliance will be determined through an initial performance test and through the use of a CO CEMS on the main kiln stack. This averaging time is appropriate to account for the variability in CO emissions from cement kilns. This limit will be achieved by employing good combustion practices. As can be seen from the RBLC retrieval, this proposed limit is as stringent as any currently in operation. Further, the only controls measures shown are good combustion practices.

5.4.4 VOC Emissions

The methodology used to evaluate BACT for VOC emissions follows the same approach as used for the CO BACT evaluation. Because the formation of VOC and its potential controls are very similar to CO, much of the analysis simply refers to the CO BACT evaluation. LAER for VOC emissions is discussed at the conclusion of this section.

Like CO, VOC emissions from cement kilns generally occur from the decomposition of the organic material in the raw meal, including additives. The design of the plant and burner selection for the kiln and calciner, along with the operating conditions, result in essentially complete burnout of organic fuel constituents, so there is a negligible amount of VOC resulting from incomplete combustion of the fuel.

The potential control technologies to be evaluated for technical feasibility for control of VOC emissions are identical to those evaluated for control of CO emissions. The conclusions of this evaluation are also the same as those reached for the CO BACT evaluation and are summarized as follows.

Good combustion practices include sufficient oxygen, and adequate time, temperature and turbulence to oxidize the carbon compounds. These practices, as well as the use of state-of-the-art process controls for a modern preheater/precalciner kiln, will result in efficient combustion and little, if any, VOC emissions from combustion of the fuel.

Attachment 5 contains a summary of VOC limits for cement kilns compiled from the RBLC. From this summary, on a normalized basis, the VOC emissions range from 0.08 lb VOC/ton clinker to 0.50 lb VOC/ton clinker for all of the recently-issued permits requiring the use of good combustion practices to achieve BACT.

CEMEX proposes a BACT/LAER limit for VOC of 0.08 lb/ton on an annual basis, and 0.1 lb/ton on a short-term basis to be achieved by using good combustion practices. Compliance with the VOC BACT limit will be determined in the initial performance test and ongoing compliance will be determined with a Total Hydrocarbons CEM on the main kiln stack There were no specific SIP requirements identified addressing VOC emissions from cement kilns. The proposed rates will also provide for compliance with NESHAP, Subpart LLL which requires a THC limit of 24 ppmvd at 7% oxygen. An activated carbon system will provide for additional THC (and VOC) control, as necessary to meet the NESHAP, LLL requirement.

5.4.5 PM/PM_{10}/$PM_{2.5}$ Emissions

PM, PM_{10}, and $PM_{2.5}$ (hereafter referred to as PM but also applies to each particulate fraction) is generated from the pyroprocessing system and raw mill. PM includes both filterable and condensable components. All condensables fall into the $PM_{2.5}$ category.

Step 1: Identification of Available Control Technologies

This section reviews the available PM control technologies that apply to the proposed project. In preparing this section, a review of EPA's emission standard determination methods for the Portland cement industry was made. EPA evaluated several types of control technologies in developing the particulate matter NSPS and NESHAP for Portland cement plants. In establishing and promulgating the particulate matter NSPS and NESHAP emission limits, EPA focused on fabric filter and ESP technologies as a basis for control of PM from kilns. This BACT determination will focus its evaluation on fabric filter and ESP control technologies for the kiln.

Fabric Filter Systems

Fabric filter (baghouse) systems consist of a structure containing tubular bags made of a woven fabric. A baghouse removes PM from the flue gas by drawing the dust laden air through a bank of filter tubes suspended in a housing. Filterable PM is collected on the upstream side of the fabric. Dust on the bags is periodically removed, collected in a hopper, and reintroduced to the process.

Filterable PM removal efficiencies of 99 to greater than 99.9 percent are typical for baghouses at varying operational conditions. The typical air-to-cloth ratio of a standard baghouse ranges from approximately 1. 2:1 to 2:1 for reverse air, and from 3:1 to 4:1 or more for pulse-jet systems. The bags in baghouses used in the Portland cement industry are made from a variety of materials including Nomex®, Gore-tex®, polyester, Teflon®, and fiberglass. Membrane filter bags for the main stack baghouse provide slightly

better performance than traditional fabric types but at a higher capital and slightly higher operating cost (due to greater pressure drop).

The technical feasibility of using baghouses is primarily dependent on exhaust gas temperatures and moisture content. Gas temperatures must be less than 260°C (500°F) to preclude damage to most bags. For the application of baghouse systems on cement kilns, this condition is usually achieved by cooling exhaust gases prior to passing them through the baghouse. Moisture contents must also be minimized to avoid condensation and possible blinding of the bags.

Cooling gases from cement kilns can be accomplished in a variety of ways. At plants using preheater/precalciner systems, kiln exhaust gases are often ducted to an in-line raw mill (or raw material dryer) to dry the raw feed material and used to preheat combustion air for the kiln. When exhaust gases are not ducted to the raw mill (either by design or when the in-line raw mill is offline), water sprays and/or bleed-in air is needed. These procedures increase the moisture content of exhaust gases entering the baghouse. When either approach is used, the temperature of gases entering the baghouse must be maintained above the dew point of the gas to prevent condensation, which leads to blinding of the filter bags.

The primary advantages of baghouses include high removal efficiencies for filterable PM, simplicity in their operation, reliability, and the ease of maintenance, as compartments within the baghouse system can be isolated for repairs without shutting down the entire system. The primary disadvantages of baghouses include the need for relatively high pressure drops (necessitating high energy consumption), limitation of temperatures to less than 260°C (500°F), and the relatively high maintenance requirements (frequent replacement of bags). Baghouses are generally not effective in removing condensable PM emissions.

Electrostatic Precipitator (ESP) Systems

ESP systems include both dry and wet types. Cleaning of exhaust gases using ESPs involves three steps: (1) passing the suspended particles through a direct current corona to charge them electrically, (2) collecting the charged particles on a grounded plate, and (3) removing the collected particulate from the plate by a mechanical process (i.e., rapping) for dry types and by water flushing for wet types. ESPs are used primarily for filterable PM control. Wet ESPs may also have limited effectiveness in reducing condensable PM through condensation onto liquid-covered plate surfaces inside the wet ESP.

The specific collection area (SCA) is the parameter used to ensure proper design control efficiency of an ESP. The SCA is defined as the ratio of the total plate area to the gas flow rate. As the SCA of an ESP increases, collection efficiency improves. The high resistivity of particles in exhaust gases from preheater/precalciner kilns may require that they be conditioned, applying a conditioning agent, prior to entering the ESP.

The primary advantages of using a dry-type ESP for PM control are the high filterable PM collection efficiency, low pressure drop, relatively low operating costs, and its ability to operate effectively at relatively high temperature and flow rates. The advantage of using a wet-type ESP would be the ability to reduce condensables.

The primary disadvantages to using an ESP are the high resistivity of the PM in cement process exhaust gases (especially from preheater/precalciner kilns), its sensitivity to fluctuations in exhaust gas conditions, and the high initial capital cost. The relatively large space requirements make using ESPs infeasible for sources other than kilns and clinker coolers. Wet-type ESPs have not been used on cement kilns; as a primary collection device, the wet collected dust cannot be easily recycled back into the kiln system as it is with dry collection systems. Wet ESPs are not suited for use in processes which are highly variable

because they are very sensitive to fluctuations in gas stream conditions (such as the large variations in cement kiln exhaust conditions with in-line raw mill operating mode).

Step 2: Elimination of Technically Infeasible Control Technologies

Fabric filter (baghouse) and dry-type ESP systems have been proven to be technically feasible control technologies for filterable PM emissions from preheater/precalciner kilns. Wet-type ESPs have not been used on cement kiln systems and are considered to be technically infeasible for this application as previously discussed.

Step 3: Ranking of Technically Feasible Control Options

Any technology that is considered technically feasible for controlling PM emissions from the preheater/precalciner kiln must be capable of reducing PM to levels below the NSPS and NESHAP standards. The standard for both regulations is 0.02 lb/ton clinker. The limits are for filterable PM and based on a 30-day rolling average. According to EPA, these standards can be met using a baghouse with membrane bags. It is questionable whether a dry-type ESP could consistently comply with the standards.

CEMEX has chosen a fabric filter with membrane bags as BACT. Because CEMEX has selected the maximum control level possible for this system, a fabric filter is the only control option considered for this source.

Step 4: Evaluation of Technically Feasible Control Options

Baghouses with membrane bags are the most effective control technology available for PM emissions from preheater/precalciner kilns. Because CEMEX has selected the maximum effective available technology to control PM emissions from the preheater/precalciner kiln, no further evaluation is necessary.

Step 5: Selection of BACT

Attachment 5 contains data from a retrieval from EPA's RBLC Clearinghouse showing the permitted PM limits for cement kilns. Most of the PM emission limits in the RBLC retrieval are shown in terms of grains/dscf. CEMEX proposes an emission limit of 0.02 lb PM (filterable)/ton clinker for the proposed kiln on a 30-day rolling average. An additional 0.16 lb/ton clinker for condensable is also proposed for the condensable portion of the total PM emissions. The proposed rate is consistent with the rates of recently permitted units, and will meet the requirements of NESHAP, Subpart LLL for new kilns. Compliance with the PM BACT limit will be determined by the initial performance test and ongoing compliance with the NESHAP LLL filterable PM limit will be determined using a Continuous Parametric Monitoring System.

5.4.6 GHG Emissions

In the EPA guidance document titled *PSD and Title V Permitting Guidance for Greenhouse Gases (EPA- 457/B-11-001, March 2011, p. 17)*, EPA recommended the use of the Agency's five-step "top-down" BACT process to determine BACT for GHGs. Furthermore, pages 22 through 24 of that guidance document also provide a section on determining the scope of the BACT analyses. This BACT analysis for GHGs was performed in accordance with the cited EPA guidance. Compliance with the BACT limits proposed in this section will be achieved through good operating and maintenance practices for the emission sources and control devices and by the monitoring as specified in 40 CFR 98 - Mandatory GHG Reporting, Subpart H - Cement Production.

Step 1: Identification of Available Control Technologies

EPA issued a "white paper" entitled *Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Portland Cement Industry (October 2010)* (The Cement Industry GHG White Paper), which provides GHG BACT guidance specific to the industry. The Cement Industry GHG White Paper is primarily written to provide energy efficiency techniques and measures as upgrades for existing kilns. The recommended energy efficiency, fuel, raw material, and add-on control techniques and measures to be considered where feasible on the project to mitigate GHG emissions are addressed below. BACT is satisfied through implementation of a suite of energy efficiency techniques and measures appropriate for the project and does not require implementation of each surveyed technique or measure. The following are considered technically feasible unless indicated otherwise.

Energy Efficiency Measures

Process Control and Management Systems

The Cement Industry GHG White Paper recommends using automated control systems to maintain operating conditions in the kiln at the optimum level. The proposed kiln will have automated control loops located in a central control room. The kiln and precalciner fuel firing rates will be automatically controlled based on temperatures and raw material firing rates. Process gas analyzers will be used by control room operators to monitor CO and O_2 levels to ensure efficient combustion.

Replacement of Kiln Seals

The Cement Industry GHG White Paper recommends that all facilities should have a regular maintenance plan for the kiln seals. Leaking seals can result in increased heat loss which increases fuel use. The proposed kiln will have a maintenance program to inspect the kiln seals periodically and during the major outages. Components of the kiln seals will be replaced as needed based on inspections during kiln stops.

Kiln Combustion System Optimization

The Cement Industry GHG White Paper recommends incorporating available technologies to optimize kiln combustion into kiln designs. Incomplete fuel burning, poor mixing of fuel with combustion air, and poorly adjusted firing can lead to increased fuel usage (as well as increased NO_X and CO emissions).

The combustion system process for the proposed kiln will be designed to provide for efficient use of fuel. The kiln will have a firing system with a low amount of primary air, flame adjustment control, and fuel rate control.

Use of Fluxes and Mineralizers to Reduce Energy Demand

The Cement Industry GHG White Paper recommends considering the use of fluxes and mineralizers where feasible to reduce the temperature at which the clinker melt begins to form in the kiln, promote formation of clinker compounds, and reduce the lower temperature limit of the tricalcium silicate stability range. The Cement Industry GHG White Paper states, "Fluorides are often used as a mineralizer and can reduce the sintering temperature by 190 °F. Although there is a fuel savings, that savings may be offset by the high cost of the fluxing agent or mineralizer. (ECRA, 2009)." Mineralizers will be used at CEMEX depending on cost and availability of the materials.

Kiln/Preheater Insulation

The Cement Industry GHG White Paper recommends proper insulation to keep heat loss through the kiln shell at a minimum. The proposed kiln will be insulated with refractory brick and the preheaters will be insulated with a combination of brick and castable refractory over a light-weight insulating material. The kiln refractory will be inspected during every major outage and portions of the refractory will be replaced, as needed, depending on the condition.

Refractory Material Selection

The Cement Industry GHG White Paper states, "The refractory bricks lining the combustion zone of the kiln protect the outer shell from the high combustion temperatures, as well as chemical and mechanical stresses. Although the choice of refractory materials is highly dependent on fuels, raw materials, and operating conditions, consideration should be given to refractory materials that provide the highest insulating capacity and have the longest life."

The kiln refractory for the proposed kiln will be very standard for the cement industry and will be selected based on the conditions of each zone (mainly thermal and chemical conditions). The refractory will be inspected during every major outage and will be replaced depending on the condition.

Grate Cooler Conversion

The Cement Industry GHG White Paper recommends replacing planetary and travelling grate coolers with a more energy efficient reciprocating grate coolers as an option for improving energy efficiency. The proposed kiln will be equipped with the newest technology grate cooler which will recuperate heat back to the system. The secondary air coming from the cooler will provide oxygen for combustion and heat recuperated from the clinker which will improve the overall kiln energy efficiency.

Multistage Preheater and Use of Suspension Preheater Low Pressure Drop Cyclones

The Cement Industry GHG White Paper recommends converting to multistage preheaters to allow higher energy transfer efficiency and lower fuel requirements. Cyclones will be used to preheat the raw meal prior to the proposed kiln. Exhaust gases from the in-line kiln precalciner will be routed to the cyclones and will provide the heat to preheat the raw meal suspended or residing in the cyclone. The Cement Industry GHG White Paper recommends and use of low pressure drop cyclones as a method of improving energy efficiency.

The proposed kiln will be equipped with a five-stage preheater consisting of low pressure drop cyclones in suspension. The material is fed at the top of the calciner and will exchange heat with hot gases from the kiln as they pass through the cyclone.

Heat Recovery from Kiln and Clinker Cooler Exhausts

The Cement Industry GHG White Paper states, "There are several exhaust streams in the cement manufacturing operation that contain significant amounts of heat energy, including the kiln exhaust, clinker cooler, and kiln preheater and precalciner. Generally, only long dry kilns produce exhaust gases with temperatures high enough to make heat recovery for power economical. Heat recovery for power may not be possible at facilities with in-line raw mills where the waste heat is used to extensively dry the raw materials…".

Cogeneration at the Wampum site is not feasible.

Conversion of Long Dry Kiln to Preheater/Precalciner Kiln

The Cement Industry GHG White Paper recommends reducing energy consumption by converting a long dry kiln to a preheater/precalciner kiln. The proposed kiln will be a preheater/precalciner kiln and will replace the facility's three existing long dry kilns.

Kiln Drive Efficiency

The Cement Industry GHG White Paper recommends using high efficiency motors to rotate the kiln. The design of the new kiln system will include high efficiency motors to rotate the proposed kiln.

High Efficiency Fan Design

The Cement Industry GHG White Paper recommends using adjustable speed, high efficiency fans for the kiln combustion process for increased energy efficiency. The proposed kiln will be equipped with modern, high efficiency fans.

Oxygen Enrichment

The Cement Industry GHG White Paper states that, "Oxygen enrichment is the process of injecting oxygen (as opposed to air) directly into the combustion zone (or as an adjunct to the combustion air stream) to increase combustion efficiency, reduce exhaust gas volume, and reduce the available nitrogen that may form NO_X pollutants."

This technique is not technically feasible for the new kiln.

Mid-Kiln Firing

The Cement Industry GHG Whiter Paper states that, "Mid-kiln firing, which is the practice of adding fuel (often scrap tires) at a point near the middle of the kiln, can result in reduced fuel usage thereby potentially reducing overall CO_2 emissions. This practice is most often used with long wet or long dry kilns." Mid-kiln firing is proven for long dry kilns, but results are not the same for calciner kilns. In a long, dry kiln with mid-kiln firing, the combustion efficiency increases for two reasons: (1) the fuel at the main burner is reduced and (2) a hot flame at mid-kiln firing will destroy and ensure complete combustion of the main fuel. Mid-kiln firing is not technically feasible for the proposed kiln, a preheater/precalciner design.

Air Mixing Technology

The Cement Industry GHG White Paper states that, "Mixing air is the practice of injecting a high-pressure air stream into a kiln to break up and mix stratified layers of gases within the kiln. Mixing the air improves the combustion efficiency. Due to the increased efficiency, less fuel is required, leading to lower CO_2 emissions."

The type of mixing air technology discussed in the Cement Industry White Paper is only needed if there is poor mixing at the burner pipe and will not be required for the proposed kiln design.

Preheater Riser Duct Firing

The Cement Industry GHG White Paper states that, "The operation of cement manufacturing operations that include a preheater prior to the kiln can be improved by firing a portion of the fuel in the riser duct to

increase the degree of calcination in the preheater." Firing at the riser serves two functions: (1) more mixing and longer residence time for the fuel to complete combustion and (2) generate enough CO to destroy NO_X from the kiln by the reaction of $NO + CO \rightarrow N_2 + CO_2$. This reaction has been reported to be catalyzed by limestone present in the hot meal. In the proposed kiln, a portion of the fuel will be fired in a part of the riser duct to increase the degree of calcinations in the preheater.

Use of Lower GHG-Emitting Fuel

The proposed kiln will have the inherent design capability of combusting the following fuels in the kiln/preheater system: natural gas, coal, petroleum coke, and alternative fuels as described previously, and included in the plant's current Title V permit. This intrinsic fuel flexibility is common in cement plants that often rely on solid fuels for their primary fuel. The ability to match kiln operation to the most cost- efficient fuel available is essential to the sustainable operation of a cement kiln which produces a commodity product in a market with other kilns of similar capabilities. Fuel costs, availability, reliability, and kiln process variables will primarily dictate the fuel mix that will be used in the proposed kiln.

Raw Material Substitution

Decarbonated Feedstocks (Steel Slag or Fly Ash)

The Cement Industry GHG White Paper states that, "Certain steel slag and fly ash materials may be introduced into the raw material feed or the clinker grinding process (see "Blended Cement" below) to reduce the amount of raw material needed to produce a given amount of clinker."

Due to the lack of a nearby source of either steel slag or fly ash materials, this potential option for reduction of GHG emissions is not considered feasible for this project. Since no nearby sources are available, the only method for obtaining such material would be by transporting it to the site, which would produce additional transportation related GHG emissions which would most likely eliminate any potential GHG reductions that would have resulted from the use of these materials in the proposed kiln.

Calcareous Shale Oil

The Cement Industry GHG White Paper states that, "Calcareous oil shale has been used in cement plants in Germany and Russia as an alternate feed stock. Oil shale can also be used as a fuel substitute, and one facility uses the resulting ash as an additive in the finish grinding operation.

This is not considered an option based on the THC limits established by NESHAP LLL and the tendency of the organic matter in the oil shale to create THC emissions in the kiln. Any potential GHG emission reductions produced from the use of this material would be negated by the amount of GHG emissions produced from transporting this material to the site.

Blended Cement

The Cement Industry GHG White Paper states that, "Blended cements contain supplementary cementitious materials that replace a portion of the clinker used to manufacture Portland cement. These materials are broadly divided into cementitious materials and pozzolans. Cementitious materials exhibit characteristics of cement. Granulated blast furnace slag is a commonly used cementitious material in cement manufacturing. A pozzolan is a material that when mixed with calcium hydroxide will exhibit cementitious properties. Example pozzolans used in cement manufacture include diatomite, calcined clay, calcined shale, metakaolin, silica fume, and fly ash from coal combustion."

Additional materials such as fly ash from coal combustion will be used, depending on cost and availability of these materials.

Add-On Controls

In addition to the cement production process technology options discussed above, it is appropriate to consider add-on technologies as possible ways to capture GHG emissions that are emitted from combustion and calcination, and to prevent them from entering the atmosphere. These emerging CCS technologies generally consist of processes that separate CO_2 from combustion process flue gas, and then inject it into geologic formations such as oil and gas reservoirs, un-mineable coal seams, or underground saline formations. Post-combustion technologies include the Calera process, which captures CO_2 from flue gas and converts the gas to stable solid minerals. The process employs a scrubber with high pH water containing calcium, magnesium, sodium, and chloride as the scrubbing liquid. The CO_2 is absorbed by the water, converting it to a dissolved carbonic acid species. However, this technology has not been demonstrated on a full-scale basis and pilot plant testing has only been in relation to the electric utility industry.

Membrane technology is being researched as a means to separate or adsorb CO_2 in the kiln exhaust. The captured CO_2 would then be purified and compressed for transport. This technology is still primarily in the research stage, with industrial application at least 10 years away. There are significant problems to overcome designing membrane reactors large enough to handle the kiln exhaust (EPA, Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Portland Cement Industry, Page 38, Oct. 2010).

A superheated Calcium Oxide (CaO) process has also been noted as a potential CO_2 control technology. The superheated CaO process separates the calcination and combustion reactions into independent chambers. The heat necessary to run the calciner is provided by circulating a stream of superheated CaO particles between a fluidized bed combustor and a fluidized bed calciner. Superheated CaO simulations have shown that the superheated CaO process is theoretically feasible; however, the system remains theoretical with no systems yet built (EPA, Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Portland Cement Industry, Page 38, Oct. 2010).

Of the emerging CO_2 capture technologies that have been identified, only amine absorption (post- combustion solvent capture and stripping) is currently commercially used for state-of-the art CO_2 separation processes. Amine absorption has been applied to processes in the petroleum refining and natural gas processing industries and for exhausts from gas-fired industrial boilers, but not at cement plants and there has been little work discussing its feasibility at cement plants.

Because it has not been demonstrated in practice at a cement plant, CO_2 capture is not considered to be achievable for the proposed kiln. If CO_2 capture can be achieved at a cement plant at full scale, it would need to be routed to a geologic formation capable of long-term storage. The long-term storage potential for a formation is a function of the volumetric capacity of a geologic formation and CO_2 trapping mechanisms within the formation, including dissolution in brine, reactions with minerals to form solid carbonates, and/or adsorption in porous rock. The U. S. Department of Energy's National Energy Technology Laboratory (DOE-NETL) describes the geologic formations that could potentially serve as CO_2 storage sites as follows:

"Geologic CO_2 storage involves the injection of supercritical CO_2 into deep geologic formations (injection zones) overlain by competent sealing formations and geologic traps that will prevent the CO_2 from escaping. Current research and field studies are focused on developing better understanding of 11 major types of geologic storage reservoir classes, each having their own unique opportunities and

challenges. Understanding these different storage classes provides insight into how the systems influence fluids flow within these systems today, and how CO_2 in geologic storage would be anticipated to flow in the future. The different storage formation classes include deltaic, coal/shale, fluvial, alluvial, strandplain, turbidite, eolian, lacustrine, clastic shelf, carbonate shallow shelf, and reef. Basaltic interflow zones are also being considered as potential reservoirs. These storage reservoirs contain fluids that may include natural gas, oil, or saline water; any of which may impact CO_2 storage differently…"

Step 2: Elimination of Technically Infeasible Control Technologies

Energy Efficiency

As described in Step 1 above, the following energy efficiency techniques addressed in The Cement Industry GHG White Paper are not feasible for this project:

- Use of Fluxes and Mineralizers
- Oxygen Enrichment
- Mid-Kiln Firing
- Air Mixing Technology (High Pressure Air Injection)

Raw Material Substitution

As described in Step 1 above, the following raw material substitution methods addressed in The Cement Industry GHG White Paper are not feasible for this project:

- Decarbonated Feedstocks (Steel Slag or Fly Ash)
- Calcareous Oil Shale
- Blended Cement

Add-On Controls

Post-Combustion CO_2 Capture and Compression

Though amine absorption technology for CO_2 capture has been applied to processes in the petroleum refining and natural gas processing industries, it has not been commercially applied to cement kiln exhausts and therefore has not been demonstrated in practice and is not considered technically feasible. The Cement Industry GHG White Paper list includes the following major additions to a cement plant to retrofit this technology:

- A CO_2 capture plant which includes a solvent scrubber and regenerator,
- Gas compression facilities to increase the pressure of the CO_2 product for transport by pipeline,
- High efficiency flue gas desulfurization and De-NO_X (a NO_X removal process) to satisfy the flue gas purity requirements of the CO_2 capture process, and
- A boiler to provide the steam required for regeneration of the CO_2 capture solvent (EPA, Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Portland Cement Industry, Page 37, Oct. 2010).

While post-combustion capture of CO_2 has been studied extensively for combustion sources at gas-fired power stations, there has been little work to address the feasibility of this technology at cement plants. The Cement Industry GHG White Paper lists the following technical issues associated with using post-combustion amine scrubbing at a cement kiln:

- Additional Steam Requirements. One of the major issues with using monoethanolamine (MEA) CO_2 capture is the large steam requirement for solvent regeneration. The CEMEX plant currently does not have steam generation capabilities.
- Sulfur Dioxide (SO_2). The concentration of SO_2 in the flue gas from the cement process is important for post-combustion capture with amines because amines react with acidic compounds to form salts that will not dissociate in the amine stripping system.
- Nitrogen Dioxide (NO_2). NO_X within the flue gas is problematic for MEA absorption as this results in solvent degradation.
- Dust. The presence of dust reduces the efficiency of the amine absorption process. The dust level must be kept below 15 mg/Nm^3.
- Reducing Conditions. The clinker must not be generated in reducing conditions and an excess of oxygen must be maintained in the process.
- Heat Reduction for MEA Absorption. The flue gas must be cooled from about 110 °C to about 50 °C to meet the ideal temperature for CO_2 absorption with MEA.
- Other Gases. The presence of any acidic components will reduce the efficiency of the MEA absorption process (EPA, Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Portland Cement Industry, Page 37, Oct. 2010).

Given the technical issues associated with using post-combustion amine scrubbing at a cement kiln and the fact that this technology has not been demonstrated in practice at a cement plant, it is not considered technically feasible at this time.

CO_2 Transport

Even if it is assumed that CO_2 capture and compression could feasibly be achieved for the proposed project, the high-volume CO_2 stream generated would need to be transported to a facility capable of storing it. Potential geologic storage sites in Pennsylvania and Ohio to which CO_2 could be transported if a pipeline was constructed are unknown. The potential length of such a CO_2 transport pipeline is uncertain due to the uncertainty of identifying a site(s) that is definitively suitable for large-scale, long-term CO_2 storage. The hypothetical minimum length required for any such pipeline(s) would be the distance to the closest site with recognized potential for some geological storage of CO_2 that could be demonstrated to indefinitely store a substantial portion of the large volume of CO_2 generated by the proposed project. However, there are no known nearby pipelines capable of accepting and transporting the large volume of high-pressure CO_2 from the CEMEX facility, thereby rendering implementation of a CO_2 transport system potentially infeasible.

CO_2 Storage

Even if it is assumed that CO_2 capture and compression could feasibly be achieved for the proposed project and that the CO_2 could be transported economically, the feasibility of CCS technology would still depend on the availability of a suitable sequestration site. The suitability of potential storage sites is a function of volumetric capacity of their geologic formations, CO_2 trapping mechanisms within formations (including dissolution in brine, reactions with minerals to form solid carbonates, and/or adsorption in

porous rock), and potential environmental impacts resulting from injection of CO_2 into the formations. Potential environmental impacts resulting from CO_2 injection that still require assessment before CCS technology can be considered feasible include:

- Uncertainty concerning the significance of dissolution of CO_2 into brine,
- Risks of brine displacement resulting from large-scale CO_2 injection, including a pressure leakage risk for brine into underground drinking water sources and/or surface water,
- Risks to fresh water as a result of leakage of CO_2, including the possibility for damage to the biosphere, underground drinking water sources, and/or surface water, and
- Potential effects on wildlife.

Potentially suitable storage sites include EOR sites and saline formations. It should be noted that, based on the suitability factors described above, currently the suitability of any enhanced oil recovery candidate reservoirs or any other test site to store a substantial portion of the large volume of CO_2 generated by the proposed project has yet to be fully demonstrated.

Step 3: Rank Remaining Control Technologies

As documented in Step 1, implementation of CCS technology is currently infeasible, leaving energy efficiency measures as the only technically feasible emission control options. Because nearly all of the feasible energy efficiency related processes, practices, and designs discussed in Step 1 of this application are being proposed for this project, a ranking of the control technologies is not necessary for this application. As discussed in Step 1, fuel costs, fuel availability, fuel reliability, and kiln process variables will primarily dictate the fuel mix that will be used in the kiln, and material substitution is not feasible because of availability and product quality issues.

Step 4: Evaluation of Technically Feasible Control Options

Because all of the technically feasible energy efficiency related processes, practices, and designs discussed in Step 1 of this analysis are being proposed for this project, an examination of the energy, environmental, and economic impacts of the efficiency designs is not necessary for this analysis.

Based on the reasons provided in Step 2 of this analysis above, CCS technology should be eliminated from further consideration as a potential feasible control technology for purposes of this BACT analysis.

Step 5: Selection of BACT

CEMEX performed a search of the EPA's RBLC, for Portland cement kilns; the results of that search are provided in Attachment 5. CEMEX proposes as BACT for this project, an efficient preheater, precalciner cement kiln which achieves a greenhouse gas emission limit of 0.92-ton carbon dioxide equivalent (CO_2e) per ton of clinker, based on a rolling 12-month average. Compliance will be determined using a CO_2 CEMS on the main kiln stack and through the annual reporting of GHG reporting requirements prescribed in 40 CFR Part 98. This limit is consistent with recent GHG BACT limits.

5.4.7 Sulfuric Acid Emissions

Sulfuric acid (H_2SO_4) gas is generated from the sulfur compounds in the raw materials and from sulfur in fuels used to fire the preheater/precalciner kiln system. As with SO_2, a portion of the H_2SO_4 is believed to be absorbed back into the process in the calcium-rich environment of the preheater tower and raw mill.

Control technologies for H_2SO_4 emissions are similar to those discussed in the SO_X BACT analysis; therefore, the analysis is not repeated here for H_2SO_4. The H_2SO_4 in the kiln exhaust gases passing through the baghouse will be controlled by the alkali absorption inherent in the precalciner kiln and by the fabric filter (baghouse) control device's alkali filter cake. A search of the RBLC for the last ten years yielded two BACT emission limits for H_2SO_4 of 0.11 lb H_2SO_4/ton of clinker and 0.203 lb H_2SO_4/ton of clinker (annual average). CEMEX proposes an emission limit of 0.11 lb H_2SO_4/ton clinker as BACT for the proposed kiln. Compliance with the BACT limit will be determined through a performance test.

5.5 BACT/BAT Determination for Clinker Cooler

PM (including PM_{10} and $PM_{2.5}$) is emitted from the clinker cooler. PM emissions from the clinker cooler are predominately filterable PM. Because the clinker cooler exhaust will be routed through the same stack and control equipment as the main kiln exhaust, the BACT analysis for the kiln stack can be used for the clinker cooler emissions also.

Attachment 5 contains data from a retrieval from EPA's RBLC Clearinghouse showing the permitted PM limits for clinker coolers. CEMEX proposes an emission limit of 0.02 lb PM (filterable)/ton clinker for the proposed clinker cooler. The emission limit will be achieved using a fabric filter. This level will meet the requirements of NESHAP, Subpart LLL for new clinker coolers. Compliance with the PM BACT limit will be determined by the initial performance test and ongoing compliance with the NESHAP LLL filterable PM limit will be determined using a Continuous Parametric Monitoring System.

5.6 BACT/BAT Determination for PM Point Sources

PM (including PM_{10}, and $PM_{2.5}$) at a cement plant is emitted from various point sources. PM emissions from these point sources is predominately filterable PM. Process sources of PM from the proposed project include:

- Raw material handling and storage
- Solid fuel handling and storage
- Solid fuel grinding
- Raw material milling and blending
- Clinker and gypsum handling and storage
- Cement finish grinding
- Cement handling and loadout.

Step 1: Identification of Available Control Technologies

There are several types of dust control devices, including fabric filter dust collectors (such as bag filters, baghouses, binvent filters, and s, bag filters, and filter cartridges. The level of emissions control that these devices provide may be expressed in terms of grain loading (i.e., gr/dscf) or percent control (using an uncontrolled emission factor)

Step 2: Elimination of Technically Infeasible Control Technologies

All of the dust control devices mentioned above are technically feasible.

Step 3: Ranking of Technically Feasible Control Options

The dust control devices mentioned above are comparable in terms of their control effectiveness.

Step 4: Evaluation of Technically Feasible Control Options

Fabric filters dust collectors are the most effective PM control technology for the cement plant process sources. Because CEMEX is choosing the most effective technology, depending on the type of PM point source.

Step 5: Selection of BACT

Attachment 5 contains data from a retrieval from EPA's RBLC Clearinghouse showing the permitted PM limits for process sources in cement plants. Most of the baghouses shown in the RBLC data show a grain loading of 0.01 gr/dscf. There are a few sources, however, that show rates at 0.005 gr/dscf. CEMEX commits to using baghouses that meet a rate of not more than 0.005 gr/dscf, thus achieving BACT. Compliance with the opacity limits associated with the point sources will be determined through periodic visual emission observations.

5.7 BACT/BAT Determination for Fugitive Sources

PM at a cement plant is emitted from fugitive dust sources (i.e., roads, storage piles). Fugitive PM emissions are exclusively filterable PM and contain no condensable PM component. Fugitive sources of PM from the proposed project include:

- Truck and loader traffic on unpaved roads
- Truck traffic on paved roads
- Material transfer points
- Wind erosion of storage piles.

Step 1: Identification of Available Control Technologies

The first step in the control technology analysis is to identify and discuss all potentially available control technologies. This section reviews the available PM control technologies and techniques that apply to the proposed project. In preparing this section, a review of EPA's emission standard determination methods for the Portland cement industry was made. EPA's evaluation of material processing sources (including mills, transfer points, etc.) was limited to measures needed to ensure opacity levels of 10 percent or less. No specific control technologies were evaluated by the EPA for these processes. Furthermore, no evaluation was made by the EPA for fugitive dust PM emissions.

Add-on control devices, such as baghouses, ESP systems, wet scrubbers, and cyclones, are technically infeasible for the control of these fugitive dust sources due to the impractical nature of capturing and ducting emissions to a control device. Filterable PM controls in use for a variety of material handling processes and fugitive dust sources at Portland cement plants include water sprays and enclosures for storage structures and transfer points, wind screens and enclosures for storage piles, watering and chemical suppressants or stabilizers (emulsions) used on unpaved roads and flushing and vacuum sweeping on paved roads. The efficiencies for these controls range from approximately 50 to 90+ percent individually but combining controls can achieve higher overall control levels.

Many of the efficiencies assigned to these types of control measures are based on empirical models that take into account the quantity of water used, the frequency of application, the time between applications, and the meteorological conditions present at the time of application. In addition, the natural high moisture content of certain raw materials may make the use of water sprays or other control measures unnecessary.

Step 2: Elimination of Technically Infeasible Control Technologies

The second step in the control technology analysis is to eliminate any technically infeasible or undemonstrated control technologies. Each control technology was considered and those that were infeasible based on physical, chemical, and engineering principles or undemonstrated in the Portland cement industry were eliminated.

Water sprays, enclosures, and other PM control systems have been proven to be technically feasible control options for fugitive dust sources. Therefore, these technologies must be considered further for these types of sources.

Step 3: Ranking of Technically Feasible Control Options

The third step in the control technology analysis is to rank remaining control technologies by control effectiveness. The control efficiencies listed are typical values for the indicated technology. The control technologies that are technically feasible for controlling filterable PM emissions from fugitive dust sources are discussed in the following subsections.

Paved Roads

The control technologies that are technically feasible for controlling PM emissions from paved roads include watering (flushing with water), vacuum sweeping, or a combination of these methods. Primary roadways into and throughout the cement plant will be paved.

The use of water flushing followed by vacuum sweeping provides an estimated control efficiency of between 46 to 96 percent. Individually, water flushing, and vacuum sweeping have control efficiencies of less than 70 percent. Because of the volume of traffic on most paved plant roads, the efficiency of water flushing in addition to sweeping is essentially the same as sweeping alone, as determined by the formulas in the following table. Table 10 summarizes the rankings for control options for paved roads.

TABLE 10 CONTROL EFFECTIVENESS OPTIONS FOR PAVED ROADS

OPERATION	CONTROL TECHNOLOGY	CONTROL EFFICIENCY (%)[1]
Paved Roads	Water Flushing & Vacuum Sweeping	96 - 0.2363V
	Water Flushing	69 - 0.231V
	Vacuum Sweeping	46 - 58

[1] Reference: Air Pollution Engineering Manual, 2nd ed., Air & Waste Management Association, 2000.
V = number of vehicle passes since application.

Unpaved Roads

The control technologies that are technically feasible for controlling PM emissions from unpaved roads include paving, watering, and application of chemical dust suppressants. Due to the constant changes in operational activities, travel routes in unpaved areas of the site are routinely changing. Therefore, paving roads in active unpaved areas is technically infeasible. The roads within such areas will remain unpaved. Vehicle traffic on these roads will be limited to haul trucks and loaders transporting raw materials.

PM emissions from unpaved roads can be controlled by watering or chemical dust suppression methods. Studies have shown that on heavily traveled unpaved roads, chemical suppression methods are as effective as watering at regular intervals.

The use of chemical dust suppressants (such as an emulsion) is expected to provide a 62-90+ percent control efficiency for the unpaved roads. Watering (and/or natural surface material moisture) provides control efficiencies ranging from 0 to 90+ percent, depending on the ability to maintain soil moisture content in the range of 2 to 8 percent. Table 11 summarizes the rankings for control options for unpaved roads.

TABLE 11 CONTROL EFFECTIVENESS OPTIONS FOR UNPAVED ROADS

OPERATION	CONTROL TECHNOLOGY	CONTROL EFFICIENCY (%)[1]
Unpaved Roads	Chemical Stabilization	62 - 90+
	Watering/Natural Moisture	0 - 90+

[1] Reference: Air Pollution Engineering Manual, 2nd ed., Air & Waste Management Association, 2000.

Material Transfers

Material transfers include the unloading of raw materials to storage piles and process hoppers by loader or truck. The control technologies that are technically feasible for controlling PM emissions from material transfers are water sprays and enclosures.

Studies have shown that wet suppression of material transfers can yield a PM_{10} control efficiency of 50- 90%. Studies have also shown that a three-sided enclosure around a storage pile can yield a PM_{10} control efficiency of 75% for material transfers to/from the piles. (Western Governors' Association, WRAP Fugitive Dust Handbook, September 2006.)

Storage Piles

The control technologies that are technically feasible for controlling PM emissions generated by wind erosion of storage piles are watering and enclosure.

Studies have shown that water application can yield a PM_{10} control efficiency of up to 90%, depending on frequency of application to the pile. Studies have also shown that artificial wind barriers around a pile can yield PM_{10} control efficiencies as high as 88%. (Western Governors' Association, WRAP Fugitive Dust Handbook, September 2006.) For certain materials, especially raw materials, inherently high moisture content can impede wind erosion.

Step 4: Evaluation of Technically Feasible Control Options

The fourth step in the control technology analysis is to complete the analysis of the applicable control technologies and to document the results. The feasible control technologies are typically evaluated on the basis of economic, energy, and environmental considerations. The evaluation of the most effective control technologies for PM emissions for the proposed project is presented below.

CEMEX will incorporate best management practices to minimize fugitive dust emissions from material handling and storage operations. Best management practices include limiting drop heights between loaders and truck beds. No other methods are available to control these sources.

Vacuum sweeping and/or water flushing for paved roadways and watering/natural surface moisture or chemical dust suppressant application for unpaved roadways are the maximum feasible control methods for PM emissions from fugitive dust sources. Water sprays and enclosures are the maximum feasible control methods for fugitive dust emissions from material transfers. Watering and enclosure (or inherently high material moisture content) are the maximum feasible control methods for fugitive dust emissions from wind erosion of storage piles. CEMEX has selected the maximum feasible methods available to control PM emissions from its fugitive dust sources. Therefore, no further evaluations are necessary.

Step 5: Selection of BACT

The BACT determination for PM emissions from paved roads, unpaved roads, and storage piles are presented in the following sections.

Paved Roads

CEMEX proposes as BACT vacuum sweeping and/or water flushing at a frequency as necessary to minimize silt loading on paved road surfaces. In addition, CEMEX will enforce a 15-mph speed limit on plant roads.

A review of the RBLC for Portland Cement manufacturing (90.028) indicates that the proposed techniques/work practices for reducing fugitive dust from paved roads are consistent with that proposed for other Portland Cement plants in the past 10 years. Additionally, speed reduction measures have been shown, by various organizations (e.g., Western Governors' Association, WRAP Fugitive Dust Handbook, September 2006), to significantly reduce fugitive dust generation.

Unpaved Roads

For new high-traffic roads at the plant, the top option (paving) will be utilized. For unpaved roads, CEMEX proposes to use watering (in combination with natural surface material moisture) or chemical suppressant application as necessary to minimize fugitive emissions. In addition, CEMEX will enforce a 15-mph speed limit on plant roads.

A review of the RBLC for Portland Cement manufacturing (90.028) indicates that the proposed techniques/work practices for reducing fugitive dust from unpaved roads are consistent with that proposed for other Portland Cement plants in the past 10 years. Additionally, speed reduction measures have been shown, by various organizations (e.g., Western Governors' Association, WRAP Fugitive Dust Handbook, September 2006), to significantly reduce fugitive dust generation.

Material Transfers

CEMEX proposes water sprays and partial enclosures (three-sided) as BACT for raw material unloading at the Material Storage Shed and Truck Unloading Station. These combination of controls is expected to yield control efficiencies of 90% or greater. All transfer points for conveyance of raw materials and product will be fully enclosed.

A review of the RBLC for Portland Cement manufacturing indicates that the proposed techniques/work practices for reducing fugitive dust from material transfers are consistent with that proposed for other Portland Cement plants in the past 10 years.

Storage Piles

All clinker storage will be fully enclosed. Emissions from storage of limestone, and other high moisture quarried raw materials are very low and do not need additional control measures. Fugitive emissions from lower moisture raw materials and solid fuels will be minimized by storage under roof, in a partial enclosure, or behind wind screens.

A review of the RBLC for Portland Cement Manufacturing indicates that the proposed techniques/work practices for reducing fugitive dust from storage piles are consistent with that proposed for other Portland Cement plants in the past 10 years.

Although the BACT analysis for fugitive emission sources (paved and unpaved roads, material transfers, and storage piles) focused on RBLC findings for the Portland Cement manufacturing industry sector, a review of RBLC entries for other industries shows BACT-based fugitive dust reduction techniques/work practices consistent that for Portland Cement plants.

5.8 BACT/LAER/BAT Determinations for Emergency Generator

BACT/LAER/BAT for the proposed 1,341 bhp diesel-fired emergency generator engine will be achieved by installing a vendor-certified engine, by performing proper operation and maintenance, and through burning ultra-low sulfur diesel (ULSD) fuel. CEMEX will only operate the emergency generator as necessary in an emergency. Limited testing and maintenance will also be performed up to 100 hours/year in accordance with the requirements of 40 CFR 60 Subpart IIII (NSPS Subpart IIII).

A diesel-fired compression ignition (CI) emergency generator engine is proposed as the only technically feasible option to provide critical electrical loads during a power outage. Natural gas-fired generators are not a practical option because if a power grid outage and a natural gas outage occur at the same time, CEMEX would not have the necessary power it would need to operate the plant.

CEMEX's emergency generator engine will be fired with ULSD containing no more than 0.0015 percent sulfur by weight. Excluding emergencies, the diesel engine will operate no more than 100 hours per year for testing and maintenance purposes. Total annual hours of operation will be limited to no more than 500 hours per year.

As well documented in determinations published in the EPA's RBLC, BACT/LAER for diesel-fired emergency engines is complying with applicable NSPS Subpart IIII emission limits for NO_X, CO, PM_{10}, and VOC, and burning only ULSD to control SO_2, Therefore, this is what is being proposed by CEMEX.

The potentially available control options for reducing emissions from emergency generator diesel engines include combustion controls, SCR, and NSCR. Combustion controls are implemented in the design of the engine. Typical design features include electronic engine controls, injection systems, combustion chamber geometry, and turbocharging systems. New engines are designed with these features as standard equipment.

Based on a review of the RBLC and other cement plant permits, no add-on controls were identified for diesel engines of this size with limited operation. SCR is an add-on NO_X control placed in the exhaust stream following the engine and involves injecting NH_3 into the flue gas. The NH_3 reacts with the NO_X in the presence of a catalyst to form water and nitrogen. The effectiveness of SCR depends on fuel quality and engine duty cycle (load fluctuations). Contaminants in the fuel may poison or mask the catalyst surface causing a reduction or termination in catalyst activity. Load fluctuations can cause variations in exhaust temperature and NO_X concentration which can create problems with the effectiveness of the SCR

system. SCR has not been a demonstrated NO_X control technology for emergency engines, and SCR would not be economically feasible based on a cost per ton of pollutant controlled considering the minimal emissions due to the limited operation of emergency engines. In addition, SCR is not technically feasible for emergency engines requiring quick start-ups and short operating periods.

NSCR is often referred to as a three-way conversion catalyst system because the catalyst reactor simultaneously reduces NO_X, CO, and HC and involves placing a catalyst in the exhaust stream of the engine. The reaction requires that the O_2 levels be kept low and that the engine be operated at fuel-rich air-to-fuel ratios. NSCR is not effective in controlling emissions from lean burn engines and would not be an appropriate control technology since diesel engines inherently operate on a fuel-lean basis. Even if technically feasible, NSCR would not be economically feasible based on a cost per ton of pollutant controlled considering the minimal emissions due to the limited operation of emergency engines Therefore, the only feasible control technology for the emergency generator diesel-fired engine is combustion controls which are satisfied by the vendor-certification requirements of NSPS Subpart IIII.

In summary, CEMEX is proposing that BACT/LAER/BAT for the emergency engine be satisfied by use of a vendor- certified engine certified in conformity with the applicable emission rates contained in 40 CFR Part 60 Subpart IIII for emergency engines. That is, the following emission rates apply: NO_X + NMHC (VOC) = 3.0 g/hp-hr; CO = 2.6 g/hp-hr; and, PM_{10} = 0.15 g/hp-hr. For VOC (HC – hydrocarbons) only, CEMEX proposes an emission limit of 1.0 g/bhp-hr as provided by DEP's *General Plan Approval and/or General Operating Permit for Diesel or No. 2 Fuel-fired Internal Combustion Engines (BAQ-GPA/GP 9)* as BAT. Note that EPA's NSPS Subpart IIII standards for NO_X and HC are expressed as one value (NOx + NMHC). Furthermore, CEMEX is proposing to limit the operation of the emergency generator diesel engine to 500 hours per year, and the engine will be fired with ULSD with a maximum sulfur content of 0.0015% by weight.

For GHG emissions, the following technologies were identified as potential control options for engines:

- Use of low carbon fuel
- Use of good operating and maintenance practices
- Low annual capacity factor.

Engine options include engines powered with electricity, natural gas, or liquid fuel, such as gasoline or diesel. Good operating and maintenance practices for engines include operating with the manufacturer's recommended fuel-to-air ratio and the proper maintenance of the engine, including periodic readiness testing.

The purpose of the engine is to provide a power source during emergencies, which includes electrical outages, natural gas supply outages, and natural disasters, such as floods and hurricanes. As such, the engine must be available during emergencies. Electricity and natural gas may not be available during an emergency and therefore cannot be used as an energy source for the engine.

The engine must be powered by a liquid fuel that can be stored on-site in a tank and supplied to the engine on demand, such as gasoline or diesel fuel. The default CO_2 emission factors for gasoline and diesel are comparable, 70.22 kg/MMBTU for gasoline and 73.96 kg/MMBTU for diesel. Diesel fuel has a much lower volatility than gasoline and can be stored for longer periods of time. Therefore, diesel is typically the chosen fuel for emergency engines. Because of the need to store the engine fuel on-site and the ability to store diesel for longer periods of time than gasoline, it is technically infeasible to utilize a lower carbon fuel than diesel.

The use of good operating and maintenance practices is technically feasible for the engine for control of CO_2. Also, a low annual capacity factor for the engine is technically feasible since the engine will only be operated for readiness testing, to turn the kiln during start-ups and shutdowns, or for actual emergencies.

No other technically feasible technologies, processes, practices, and/or designs are available for ranking of control effectiveness or evaluation for the proposed engine. Use of a vendor-certified engine compliant with 40 CFR 60 Subpart IIII emission standards, proper operation and maintenance of the engine including readiness testing per manufacturer instructions, the use of ULSD, and limited annual hours of operation are selected as BACT for the proposed engine.

From the RBLC, many facilities had GHG BACT items stated for diesel-fired emergency engines. These listings included annual GHG ton/year emission limits and annual operating hour limits. The BACT for the diesel-fired emergency engine proposed for this project is comparable to recently issued permits for similar diesel-fired emergency engines.

6.0 DEP PLAN APPROVAL APPLICATION

6.1 General Information Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)				DEP USE ONLY
Client ID#	282404	**APS ID#**		Date Received & General Notes
Site ID#	242104	**Auth ID#**		
Facility ID#	246188			

CLIENT INFORMATION

DEP Client ID#	**Client Type / Code**
282404	LLC / Ltd Liability Company

Organization Name or Registered Fictitious Name	**Employer ID#** (EIN)	**Dun & Bradstreet ID#**
CEMEX Construction Materials Atlantic, LLC	26-3068146	

Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**
Capalbo	James			
Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	**Mailing Address Line 2**
2001 Portland Park	

Address Last Line – City	**State**	**ZIP+4**	**Country**
Wampum	PA	16157-3913	USA

Client Contact Last Name	**First Name**	**MI**	**Suffix**
Egan	Mike	F	

Client Contact Title	**Phone**	**Ext**
Vice President	724-535-4311	

Email Address	**FAX**
jeanal.white@cemex.com	

SITE INFORMATION

DEP Site ID#	**Site Name**
242104	CEMEX Wampum Cement Plant

EPA ID# PAD083965897 **Estimated Number of Employees to be Present at Site** 150

Description of Site
Cement plant

County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
Lawrence	Wampum	☐	☒	☐	PA
County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
		☐	☐	☐	

Site Location Line 1	**Site Location Line 2**
2001 Portland Park	

Site Location Last Line – City	**State**	**ZIP+4**
Wampum	PA	16157-9109

Detailed Written Directions to Site
From I-376 E, take Exit 20 for PA-168. Turn left onto PA-168 N. Turn right onto PA-18 S. Turn left onto Main St.; sharp right onto Portland Park.

Site Contact Last Name	**First Name**	**MI**	**Suffix**
Egan	Mike	F	

Site Contact Title	**Site Contact Firm**
Vice President	CEMEX Construction Materials Atlantic, LLC

Mailing Address Line 1	**Mailing Address Line 2**
2001 Portland Park	

Mailing Address Last Line – City	State	ZIP+4
Wampum	PA	16157-9109

Phone	Ext	FAX	Email Address
724-535-4311			jeanal.white@cemex.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply)	6-Digit Code (Optional)
32, 327	327310

Client to Site Relationship
OWNOP / Owner/Operator

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. Will this project modify an existing facility, system, or activity?	☒	☐
2. Will this project involve an addition to an existing facility, system, or activity?	☒	☐

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☒	Air Emission Plant	246188	☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine DrainageTrmt/LandRecyProjLocation	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Oil & Gas Wastewater Storage Impoundment	
☐	Deep Mine Safety Operation -Anthracite		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Bituminous		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Residual Waste Operation	
☐	Encroachment Location (water, wetland)		☐	Storage Tank Location	
☐	Erosion & Sediment Control Facility		☐	Water Pollution Control Facility	
☐	Explosive Storage Location		☐	Water Resource	
			☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
ENTGN / Plant Entrance (general)	40	52	41.7139	-80	19	28.9139

Horizontal Accuracy Measure Feet *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code UNK / Unknown

Reference Point Code

Altitude Feet *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☐ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code

Geometric Type Code

Data Collection Date

Source Map Scale Number Inch(es) = Feet

--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
CEMEX Wampum Cement Plant Reactivation

Project Description
The reactivation project includes the installation and operation of a new, modern 5-stage preheater/precalciner kiln with state-of-the-art emissions controls, a new clinker cooler, and various ancillary equipment; and the conversion of an existing raw mill to a coal mill. Various existing material handling, storage, and ancillary equipment will be refurbished for use. The facility's three existing long, dry kilns will be dismantled and removed from the facility.

Project Consultant Last Name	First Name	MI	Suffix
Seinfeld	Jennifer	Sharp	

Project Consultant Title	Consulting Firm	
Client Services Manager/Department Manager	POWER Engineers, Inc.	
Mailing Address Line 1	**Mailing Address Line 2**	
10440 Little Patuxent Parkway	Suite 750	
Address Last Line – City	**State**	**ZIP+4**
Columbia	MD	21044

Phone	Ext	FAX	Email Address
410-312-7915		410-312-7901	jennifer.seinfeld@powereng.com

Time Schedules	Project Milestone (Optional)
Jan 2021	Commence construction.
Jan 2022	Complete construction.
Jan 2022	Start-up.

1. Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? ☒ Yes ☐ No

2. Is your project funded by state or federal grants? ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

3. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☐ Yes ☒ No

Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1. Is there an adopted county or multi-county comprehensive plan? ☐ Yes ☐ No

2. Is there an adopted municipal or multi-municipal comprehensive plan? ☐ Yes ☐ No

3. Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? ☐ Yes ☐ No

Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

4. Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. ☐ Yes ☐ No

5. Have you attached Municipal and County Land Use Letters for the project? ☐ Yes ☐ No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☐	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☐	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No

3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐	Yes	☒	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☐	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage. **4.0.1 Total Disturbed Acreage**	☒	Yes	☐	No
5.0	**Does the project involve any of the following?** If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	☐	Yes	☒	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☐	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☐	No
5.3	**Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☐	No
6.0	**Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☒	Yes	☐	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No

11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** If "Yes", identify each type of emission followed by the amount of that emission. **13.0.1 Enter all types & amounts of emissions; separate each set with semicolons.** See Plan Approval Application.	☒	Yes	☐	No
14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. **16.0.1 Supplier's Name** _____	☐	Yes	☒	No
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project involve a new or increased drinking water withdrawal from a stream or other water body?** If "Yes", should reference both Water Supply and Watershed Management. **17.0.1 Stream Name**	☐	Yes	☒	No
18.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. **18.0.1 Type & Amount**	☒	Yes	☐	No
19.0	**Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?**	☐	Yes	☒	No
20.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **20.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
21.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **21.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

22.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
23.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
24.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Mike F. Egan

Signature	Title	Date
MF Egan	Vice President	1-15-20

6.2 Process Plan Approval Application

2700-PM-AQ0007 Rev. 7/2004

Submit in Triplicate

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PROCESSES

Application for Plan Approval to Construct, Modify or Reactivate an Air Contamination Source and/or Install an Air Cleaning Device

This application must be submitted with the General Information Form (GIF).

Before completing this form, read the instructions provided for the form.

Section A - Facility Name, Checklist And Certification

Organization Name or Registered Fictitious Name/Facility Name: CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

DEP Client ID# (if known): 282404

Type of Review required and Fees:

☐	Source which is not subject to NSPS, NESHAPs, MACT, NSR, and PSD:	
☑	Source requiring approval under NSPS or NESHAPs or both:	$ 3,400.00
☑	Source requiring approval under NSR regulations:	$ 5,300.00
☐	Source requiring the establishment of a MACT limitation:	
☑	Source requiring approval under PSD:	$ 22,700.00

Applicant's Checklist

- ☑ **General Information Form (GIF)**
- ☑ **Process Plan Approval Application**
- ☑ **Compliance Review Form** or provide reference of most recently submitted compliance review form for facilities submitting on a periodic basis: Not Applicable
- ☑ **Copy and Proof of County and Municipal Notifications**
- ☑ **Permit Fees**
- ☑ **Addendum A:** Source Applicable Requirements (only applicable to existing Title V facility)

Certification of Truth, Accuracy and Completeness by a Responsible Official

I, Mike F. Egan, certify under penalty of law in 18 Pa. C. S. A. §4904, and 35 P.S. §4009(b) (2) that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate and complete.

(Signature): mF Eg Date: 1-15-20

Name (Print): Mike F. Egan Title: Vice President

OFFICIAL USE ONLY

Application No. _____ Unit ID _____ Site ID _____

DEP Client ID #: _____ APS. ID _____ AUTH. ID _____

Date Received _____ Date Assigned _____ Reviewed By _____

Date of 1st Technical Deficiency _____ Date of 2nd Technical Deficiency _____

Comments: _____

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material unloading - limestone, coal and slag
Associated process equipment: stone/coal reception hopper (311-01-248-01), vibrating feeder unloading station stone side (311-04-423-01), coal lump breaker (883-01-449-01), 30" belt conveyor (311-08-413-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
252	250 stpd	250 stpd

Type of Material Processed

Limestone, Coal, Slag

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Stone/coal truck unloading station (315-02-231-01) to reception hopper (311-01-248-01)

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Fug001	Control Device ID:	Z252

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.55E-03	1.83E-02	AP-42
PM_{10}		1.50E-03	6.01E-03	
$PM_{2.5}$		4.23E-04	1.70E-03	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z252			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
Z252			100.00%	
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

155

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	53.61	80.00	19.00	35.39

Stack exhaust					
Volume	ACFM	Temperature	F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material unloading - additives
Associated process equipment: additives reception hopper (341-01-248-01), vibrating feeder unloading station (341-02-423-01), 30" belt conveyor (341-08-413-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
253	250 stpd	250 stpd

Type of Material Processed

Shale, Iron ore, Pea gravel/sand, Gypsum

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Additives truck unloading station (315-02-231-01) to additives reception hopper (341-01-248-01)

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Fug002	Control Device ID:	Z253

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		8.69E-04	3.49E-03	AP-42
PM_{10}		2.85E-04	1.15E-03	
$PM_{2.5}$		8.07E-05	3.24E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z253			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
Z253			100.00%	
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

140

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	53.61	80.00	19.00	35.39

Stack exhaust

Volume	ACFM	Temperature	F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material storage feed - limestone, coal and slag
Associated process equipment: turnhead (310-09-418-01), 24" belt conveyor (311-15-413-01), 30" belt conveyor (311-19-413-01), 30" belt conveyor (311-23-413-01), 30" belt conveyor (881-01-413-01), coal bin (TAG 882-01-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
254	250 stpd	250 stpd

Type of Material Processed

Limestone, Coal, Slag

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #2 (315-08-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #4 (315-15-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1400

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #5 (315-16-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #6 (315-17-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1600

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #7 (315-12-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #8 (315-13-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone/Slag

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #9 (315-14-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #13 (315-20-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2100

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #14 (315-19-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	4000

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☑ Storage Bin	☐ Other, Describe	Name of Material Stored
				Coal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Coal Bin (882-01-01)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	200

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	311-10-312-01	Control Device ID:	C254A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.85E-02	8760	2.35E-01	Assumed control efficiency
PM_{10}		1.92E-02	8760	7.73E-02	
$PM_{2.5}$		5.43E-03	8760	2.18E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-10-312-01	Control Device ID:	C254A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.35E-01	2.35E-03	99.00%
PM_{10}	7.73E-02	7.73E-04	99.00%
$PM_{2.5}$	2.18E-02	2.18E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-10-312-01	Control Device ID:	C254A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	311-10-312-01	Control Device ID:	C254A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.85E-04	2.35E-03	AP-42
PM_{10}		1.92E-04	7.73E-04	
$PM_{2.5}$		5.43E-05	2.18E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254			100.00%		
Stack height above grade (ft.)	72.00	Stack diameter (ft.) or	1.35	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.17	-80.00	19.00	31.88

Stack exhaust

Volume	5000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	311-14-312-01	Control Device ID:	C254B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		7.01E-03	8760	2.82E-02	Assumed control efficiency
PM_{10}		2.30E-03	8760	9.26E-03	
$PM_{2.5}$		6.51E-04	8760	2.62E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-14-312-01	Control Device ID:	C254B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.82E-02	2.82E-04	99.00%
PM_{10}	9.26E-03	9.26E-05	99.00%
$PM_{2.5}$	2.62E-03	2.62E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-14-312-01	Control Device ID:	C254B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	311-14-312-01	Control Device ID:	C254B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		7.01E-05	2.82E-04	AP-42
PM_{10}		2.30E-05	9.26E-05	
$PM_{2.5}$		6.51E-06	2.62E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254			100.00%		
Stack height above grade (ft.)	72.00	Stack diameter (ft.) or	0.95	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

260

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.79	-80.00	19.00	32.45

Stack exhaust

Volume	2500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	311-20-312-01	Control Device ID:	C254C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.42E-02	8760	5.72E-02	Assumed control efficiency
PM_{10}		4.68E-03	8760	1.88E-02	
$PM_{2.5}$		1.32E-03	8760	5.31E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-20-312-01	Control Device ID:	C254C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3200 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.72E-02	5.72E-04	99.00%
PM_{10}	1.88E-02	1.88E-04	99.00%
$PM_{2.5}$	5.31E-03	5.31E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	311-20-312-01	Control Device ID:	C254C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	311-20-312-01	Control Device ID:	C254C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.42E-04	5.72E-04	AP-42
PM_{10}		4.68E-05	1.88E-04	
$PM_{2.5}$		1.32E-05	5.31E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254			100.00%		
Stack height above grade (ft.)	72.00	Stack diameter (ft.) or	1.08	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

235

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.59	-80.00	19.00	31.18

Stack exhaust

Volume	3200 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	882-01-312-01	Control Device ID:	C254D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.18E-03	8760	1.28E-02	Assumed control efficiency
PM_{10}		1.04E-03	8760	4.20E-03	
$PM_{2.5}$		2.95E-04	8760	1.19E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	882-01-312-01	Control Device ID:	C254D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.28E-02	1.28E-04	99.00%
PM_{10}	4.20E-03	4.20E-05	99.00%
$PM_{2.5}$	1.19E-03	1.19E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	882-01-312-01	Control Device ID:	C254D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	882-01-312-01	Control Device ID:	C254D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.18E-05	1.28E-04	AP-42
PM_{10}		1.04E-05	4.20E-05	
$PM_{2.5}$		2.95E-06	1.19E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254D				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.74	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.69	-80.00	19.00	30.36

Stack exhaust

Volume	1500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	885-19-312-01	Control Device ID:	C254E

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.18E-03	8760	1.28E-02	Assumed control efficiency
PM_{10}		1.04E-03	8760	4.20E-03	
$PM_{2.5}$		2.95E-04	8760	1.19E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	885-19-312-01	Control Device ID:	C254E

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1765 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.28E-02	1.28E-04	99.00%
PM_{10}	4.20E-03	4.20E-05	99.00%
$PM_{2.5}$	1.19E-03	1.19E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	885-19-312-01	Control Device ID:	C254E

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	885-19-312-01	Control Device ID:	C254E

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.18E-05	1.28E-04	AP-42
PM_{10}		1.04E-05	4.20E-05	
$PM_{2.5}$		2.95E-06	1.19E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254E			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
254			100.00%	
Stack height above grade (ft.)	20.00	Stack diameter (ft.) or	0.80	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

320

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.64	-80.00	19.00	30.46

Stack exhaust

Volume	1765 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		1.02E-02	8760	4.08E-02	Assumed control efficiency
PM_{10}		3.34E-03	8760	1.34E-02	
$PM_{2.5}$		9.43E-04	8760	3.79E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2000 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.08E-02	4.08E-04	99.00%
PM_{10}	1.34E-02	1.34E-04	99.00%
$PM_{2.5}$	3.79E-03	3.79E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.02E-04	4.08E-04	AP-42
PM_{10}		3.34E-05	1.34E-04	
$PM_{2.5}$		9.43E-06	3.79E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254F				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254 and 269			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.85	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

225

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.03	-80.00	19.00	31.18

Stack exhaust

Volume	2000 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material storage feed - additives
Associated process equipment: turnhead (340-09-418-01), Shale silo #10 (325-01-232-01), Shale silo #11 (345-01-232-01), Shale silo #12 (365-01-232-01), 30" belt conveyor (335-02-413-01), Gypsum silo #3 (335-01-232-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
255	250 stpd	250 stpd

Type of Material Processed

Shale, Iron ore, Pea gravel/sand, Gypsum

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Gypsum

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #3 (335-01-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Limestone/Slag

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #9 (315-14-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Shale

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #10 (315-19-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Iron ore

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #11 (315-19-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2000

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Pea Gravel/Sand

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #12 (315-19-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2000

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	341-10-312-01	Control Device ID:	C255A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.14E-02	8760	4.60E-02	Assumed control efficiency
PM_{10}		3.76E-03	8760	1.51E-02	
$PM_{2.5}$		1.06E-03	8760	4.27E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	341-10-312-01	Control Device ID:	C255A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3200 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.60E-02	4.60E-04	99.00%
PM_{10}	1.51E-02	1.51E-04	99.00%
$PM_{2.5}$	4.27E-03	4.27E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	341-10-312-01	Control Device ID:	C255A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	341-10-312-01	Control Device ID:	C255A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.14E-04	4.60E-04	AP-42
PM_{10}		3.76E-05	1.51E-04	
$PM_{2.5}$		1.06E-05	4.27E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S255A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
255			100.00%		
Stack height above grade (ft.)	72.00	Stack diameter (ft.) or	1.08	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

310

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.20	-80.00	19.00	32.01

Stack exhaust

Volume	3200 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	335-03-312-01	Control Device ID:	C255B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.04E-03	8760	4.20E-03	Assumed control efficiency
PM_{10}		3.43E-04	8760	1.38E-03	
$PM_{2.5}$		9.69E-05	8760	3.90E-04	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	335-03-312-01	Control Device ID:	C255B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.20E-03	4.20E-05	99.00%
PM_{10}	1.38E-03	1.38E-05	99.00%
$PM_{2.5}$	3.90E-04	3.90E-06	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	335-03-312-01	Control Device ID:	C255B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	335-03-312-01	Control Device ID:	C255B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.04E-05	4.20E-05	AP-42
PM_{10}		3.43E-06	1.38E-05	
$PM_{2.5}$		9.69E-07	3.90E-06	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S255B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
255			100.00%	
Stack height above grade (ft.)	72.00	Stack diameter (ft.) or	0.74	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

200

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.49	-80.00	19.00	30.73

Stack exhaust

Volume	1500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material storage reclaim to Raw Mill feed - limestone
Associated process equipment: 30" weight conveyor (411-32-413-01), 24" weight feeder (441-33-421-02), stone 30" belt conveyor (411-29-413-01), autoweight feeder (411-04-421-01), stone 30" belt conveyor (411-28-413-01), Pocket Belt (411-50-414-01), Hopper (TAG 411-01-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
256	270 stpd	270 stpd

Type of Material Processed

Limestone

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Limestone

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Stone Hopper (411-01-01)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	385

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.61E-02	8760	1.05E-01	Assumed control efficiency
PM_{10}		8.59E-03	8760	3.45E-02	
$PM_{2.5}$		2.43E-03	8760	9.76E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.05E-01	1.05E-03	99.00%
PM_{10}	3.45E-02	3.45E-04	99.00%
$PM_{2.5}$	9.76E-03	9.76E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.61E-04	1.05E-03	AP-42
PM_{10}		8.59E-05	3.45E-04	
$PM_{2.5}$		2.43E-05	9.76E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S256A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
256 and 257			50.00%		
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	1.35	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.08	-80.00	19.00	32.09

Stack exhaust

Volume	5000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-38-312-01	Control Device ID:	C256B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.50E-02	8760	1.00E-01	Assumed control efficiency
PM_{10}		8.20E-03	8760	3.30E-02	
$PM_{2.5}$		2.32E-03	8760	9.32E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-38-312-01	Control Device ID:	C256B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
4000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.00E-01	1.00E-03	99.00%
PM_{10}	3.30E-02	3.30E-04	99.00%
$PM_{2.5}$	9.32E-03	9.32E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-38-312-01	Control Device ID:	C256B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-38-312-01	Control Device ID:	C256B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.50E-04	1.00E-03	AP-42
PM_{10}		8.20E-05	3.30E-04	
$PM_{2.5}$		2.32E-05	9.32E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S256B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
256			100.00%		
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	1.21	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

240

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.83	-80.00	19.00	32.66

Stack exhaust

Volume	4000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-42-312-01	Control Device ID:	C256C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.50E-02	8760	1.00E-01	Assumed control efficiency
PM_{10}		8.20E-03	8760	3.30E-02	
$PM_{2.5}$		2.32E-03	8760	9.32E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-42-312-01	Control Device ID:	C256C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3200 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.00E-01	1.00E-03	99.00%
PM_{10}	3.30E-02	3.30E-04	99.00%
$PM_{2.5}$	9.32E-03	9.32E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-42-312-01	Control Device ID:	C256C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-42-312-01	Control Device ID:	C256C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.50E-04	1.00E-03	AP-42
PM_{10}		8.20E-05	3.30E-04	
$PM_{2.5}$		2.32E-05	9.32E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S256C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
256			100.00%		
Stack height above grade (ft.)	61.00	Stack diameter (ft.) or	1.08	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

285

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.41	-80.00	19.00	33.51

Stack exhaust

Volume	3200 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-58-312-01	Control Device ID:	C256D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		8.99E-03	8760	3.62E-02	Assumed control efficiency
PM_{10}		2.95E-03	8760	1.19E-02	
$PM_{2.5}$		8.35E-04	8760	3.36E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-58-312-01	Control Device ID:	C256D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	3.62E-02	3.62E-04	99.00%
PM_{10}	1.19E-02	1.19E-04	99.00%
$PM_{2.5}$	3.36E-03	3.36E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-58-312-01	Control Device ID:	C256D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-58-312-01	Control Device ID:	C256D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		8.99E-05	3.62E-04	AP-42
PM_{10}		2.95E-05	1.19E-04	
$PM_{2.5}$		8.35E-06	3.36E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S256D				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
256			100.00%		
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	1.35	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

265

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.31	-80.00	19.00	31.95

Stack exhaust

Volume	5000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw material storage reclaim to Raw Mill feed - additives and limestone
Associated process equipment: weight belt conveyor (411-05-413-01), stone 30" belt conveyor (411-27-413-02), 30" belt conveyor (411-57-413-01), 36" belt conveyor (411-30-413-01), autoweight feeder (411-23-421-02), autoweight feeder (411-24-421-02), 24" sand autoweight feeder (411-25-421-02), sand autoweight 30" belt conveyor (411-26-421-02), hopper (TAG 411-01-01), belt scale (411-44-632-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
257	290 stpd	290 stpd

Type of Material Processed

Shale, Iron ore, Pea gravel/sand, Slag, Limestone

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		2.61E-02	8760	1.05E-01	Assumed control efficiency
PM_{10}		8.59E-03	8760	3.45E-02	
$PM_{2.5}$		2.43E-03	8760	9.76E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.05E-01	1.05E-03	99.00%
PM_{10}	3.45E-02	3.45E-04	99.00%
$PM_{2.5}$	9.76E-03	9.76E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-34-312-01	Control Device ID:	C256A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.61E-04	1.05E-03	AP-42
PM_{10}		8.59E-05	3.45E-04	
$PM_{2.5}$		2.43E-05	9.76E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S256A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
256 and 257			50.00%		
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	1.35	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.08	-80.00	19.00	32.09

Stack exhaust

Volume	5000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-48-312-01	Control Device ID:	C257A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.37E-02	8760	5.49E-02	Assumed control efficiency
PM_{10}		4.49E-03	8760	1.80E-02	
$PM_{2.5}$		1.27E-03	8760	5.10E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-48-312-01	Control Device ID:	C257A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3200 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.49E-02	5.49E-04	99.00%
PM_{10}	1.80E-02	1.80E-04	99.00%
$PM_{2.5}$	5.10E-03	5.10E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-48-312-01	Control Device ID:	C257A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-48-312-01	Control Device ID:	C257A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.37E-04	5.49E-04	AP-42
PM_{10}		4.49E-05	1.80E-04	
$PM_{2.5}$		1.27E-05	5.10E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S257A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
257			100.00%		
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	1.08	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.39	-80.00	19.00	33.08

Stack exhaust

Volume	3200 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	411-52-312-01	Control Device ID:	C257B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.45E-02	8760	2.19E-01	Assumed control efficiency
PM_{10}		1.79E-02	8760	7.20E-02	
$PM_{2.5}$		5.07E-03	8760	2.04E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-52-312-01	Control Device ID:	C257B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.19E-01	2.19E-03	99.00%
PM_{10}	7.20E-02	7.20E-04	99.00%
$PM_{2.5}$	2.04E-02	2.04E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	411-52-312-01	Control Device ID:	C257B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	411-52-312-01	Control Device ID:	C257B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.45E-04	2.19E-03	AP-42
PM_{10}		1.79E-04	7.20E-04	
$PM_{2.5}$		5.07E-05	2.04E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S257B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
257			100.00%	
Stack height above grade (ft.)	23.00	Stack diameter (ft.) or	0.95	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

330

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.27	-80.00	19.00	33.56

Stack exhaust

Volume	2500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw Mill feed including recycle
Associated process equipment: belt conveyor (422-12-413-01), rejecting hopper (TAG 422-01-01), vibratory feeder (422-08-423-01), belt conveyor (422-20-413-01), belt conveyor (422-10-413-01), bucket elevator (422-11-412-01), raw mill (422-01-435-01), vibrating feeder (422-09-423-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
258	290 stpd	290 stpd

Type of Material Processed

Shale, Iron ore, Pea gravel/sand, Slag, Limestone

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from reject material load to container.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	422-13-312-01	Control Device ID:	C258A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.92E-02	8760	2.38E-01	Assumed control efficiency
PM_{10}		1.94E-02	8760	7.81E-02	
$PM_{2.5}$		5.49E-03	8760	2.21E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	422-13-312-01	Control Device ID:	C258A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6145 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.38E-01	2.38E-03	99.00%
PM_{10}	7.81E-02	7.81E-04	99.00%
$PM_{2.5}$	2.21E-02	2.21E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	422-13-312-01	Control Device ID:	C258A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	422-13-312-01	Control Device ID:	C258A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.92E-04	2.38E-03	AP-42
PM_{10}		1.94E-04	7.81E-04	
$PM_{2.5}$		5.49E-05	2.21E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S258A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
258			100.00%		
Stack height above grade (ft.)	90.00	Stack diameter (ft.) or	1.50	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

450

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	45.84	-80.00	19.00	29.94

Stack exhaust

Volume	6145 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	422-22-312-01	Control Device ID:	C258B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		0.00E+00	8760	0.00E+00	Assumed control efficiency
PM_{10}		0.00E+00	8760	0.00E+00	
$PM_{2.5}$		0.00E+00	8760	0.00E+00	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	422-22-312-01	Control Device ID:	C258B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5440 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	0.00E+00	0.00E+00	
PM_{10}	0.00E+00	0.00E+00	
$PM_{2.5}$	0.00E+00	0.00E+00	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	422-22-312-01	Control Device ID:	C258B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	422-22-312-01	Control Device ID:	C258B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		0.00E+00	0.00E+00	AP-42
PM_{10}		0.00E+00	0.00E+00	
$PM_{2.5}$		0.00E+00	0.00E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S258B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
258			100.00%		
Stack height above grade (ft.)	47.00	Stack diameter (ft.) or	1.41	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

490

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	45.61	-80.00	19.00	30.45

Stack exhaust

Volume	5440 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Raw Mill
Associated process equipment: cyclon 1 (422-26-426-01), cyclon 2 (422-27-426-01,) air slide (431-01-416-04), pneumatic pump (431-10-417-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
259	290 stpd	290 stpd

Type of Material Processed

Raw meal

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	431-07-312-01	Control Device ID:	C259A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.45E+02	8760	6.33E+02	Assumed control efficiency
PM_{10}		6.36E+01	8760	2.79E+02	
$PM_{2.5}$		2.60E+01	8760	1.14E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	431-07-312-01	Control Device ID:	C259A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
8500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.33E+02	6.33E-01	99.90%
PM_{10}	2.79E+02	5.32E-01	99.90%
$PM_{2.5}$	1.14E+02	2.85E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	431-07-312-01	Control Device ID:	C259A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	431-07-312-01	Control Device ID:	C259A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.45E-01	6.33E-01	Grain Loading
PM_{10}		1.21E-01	5.32E-01	
$PM_{2.5}$		6.50E-02	2.85E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
259			100.00%		
Stack height above grade (ft.)	50.00	Stack diameter (ft.) or	1.76	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

350

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	45.84	-80.00	19.00	28.91

Stack exhaust

Volume	8500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		NA	8760	NA	
PM_{10}		NA	8760	NA	
$PM_{2.5}$		NA	8760	NA	
SO_X		NA	8760	NA	
CO		NA	8760	NA	
NO_X		NA	8760	NA	
VOC		NA	8760	NA	
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
488315 ACFM	@	465 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	NA	1.14E+02	
PM_{10}	NA	1.12E+02	
$PM_{2.5}$	NA	9.69E+01	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.60E+01	1.14E+02	MACT LLL, NSPS Subpart F, AP-42
PM_{10}		2.56E+01	1.12E+02	
$PM_{2.5}$		2.21E+01	9.69E+01	
SO_X		5.20E+01	2.28E+02	
CO		1.79E+02	7.86E+02	
NO_X		1.95E+02	8.54E+02	
VOC		1.30E+01	4.56E+01	
Others: (e.g., HAPs)	----------	----------	----------	
HCl		3.00E+00	3.00E+00	
Hg		2.10E+01	2.10E+01	
Dioxin/Furans		2.00E-01	2.00E-01	
THC		2.40E+01	2.40E+01	
H2SO4		1.43E+01	6.26E+01	
NH3		4.13E+01	3.06E+01	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
259, 263, 264			33.33%		
Stack height above grade (ft.)	345.00	Stack diameter (ft.) or	13.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

450

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	488315 ACFM	Temperature	465 F	Moisture	12.70%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Blending (Homogenizing) Silos
Associated process equipment: #1 raw silo (441-01-232-04), #3 raw silo (441-03-232-04), #2 raw silo (441-02-232-04), #4 raw silo (441-04-232-04), #5 raw silo (441-04-232-04), distribution box (441-66-416-04), air slide (521-32-416-04), air slide (521-33-416-04), pneumatic pump (441-80-417-04)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
260	4600 stpd	4600 stpd

Type of Material Processed

Raw meal

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Raw Meal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Blending Silo #1 (441-21-735-04)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Raw Meal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Blending Silo #2 (441-25-735-04)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Raw Meal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Blending Silo #3 (441-24-735-04)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Raw Meal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Blending Silo #4 (441-26-735-04)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Raw Meal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Blending Silo #5 (441-08-232-04)		11/1/1969

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	3300

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	441-09-312-04	Control Device ID:	C260A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		4.85E+02	8760	2.13E+03	Assumed control efficiency
PM_{10}		2.14E+02	8760	9.35E+02	
$PM_{2.5}$		8.74E+01	8760	3.83E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-09-312-04	Control Device ID:	C260A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
15000 ACFM	@	158 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.13E+03	2.13E+00	99.90%
PM_{10}	9.35E+02	1.79E+00	99.90%
$PM_{2.5}$	3.83E+02	9.57E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-09-312-04	Control Device ID:	C260A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	441-09-312-04	Control Device ID:	C260A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.85E-01	2.13E+00	Grain Loading
PM_{10}		4.08E-01	1.79E+00	
$PM_{2.5}$		2.18E-01	9.57E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S260A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
260			100.00%		
Stack height above grade (ft.)	67.00	Stack diameter (ft.) or	2.34	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

340

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.48	-80.00	19.00	26.73

Stack exhaust

Volume	15000 ACFM	Temperature	158 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	521-40-312-04	Control Device ID:	C260B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		1.41E+02	8760	6.19E+02	Assumed control efficiency
PM_{10}		6.22E+01	8760	2.73E+02	
$PM_{2.5}$		2.55E+01	8760	1.12E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-40-312-04	Control Device ID:	C260B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
4235 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.19E+02	6.19E-01	99.90%
PM_{10}	2.73E+02	5.20E-01	99.90%
$PM_{2.5}$	1.12E+02	2.79E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-40-312-04	Control Device ID:	C260B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	521-40-312-04	Control Device ID:	C260B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.41E-01	6.19E-01	Grain Loading
PM_{10}		1.19E-01	5.20E-01	
$PM_{2.5}$		6.36E-02	2.79E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S260B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
260			100.00%		
Stack height above grade (ft.)	67.00	Stack diameter (ft.) or	1.24	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

275

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.49	-80.00	19.00	27.19

Stack exhaust

Volume	4235 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	441-18-312-04	Control Device ID:	C260C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.75E+02	8760	1.20E+03	Assumed control efficiency
PM_{10}		1.21E+02	8760	5.30E+02	
$PM_{2.5}$		4.95E+01	8760	2.17E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-18-312-04	Control Device ID:	C260C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
8500 ACFM	@	158 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.20E+03	1.20E+00	99.90%
PM_{10}	5.30E+02	1.01E+00	99.90%
$PM_{2.5}$	2.17E+02	5.42E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-18-312-04	Control Device ID:	C260C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	441-18-312-04	Control Device ID:	C260C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.75E-01	1.20E+00	Grain Loading
PM_{10}		2.31E-01	1.01E+00	
$PM_{2.5}$		1.24E-01	5.42E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S260C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
260			100.00%		
Stack height above grade (ft.)	40.00	Stack diameter (ft.) or	1.76	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

340

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.37	-80.00	19.00	26.93

Stack exhaust

Volume	8500 ACFM	Temperature	158 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	441-11-312-04	Control Device ID:	C260D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.56E+02	8760	1.56E+03	Assumed control efficiency
PM_{10}		1.57E+02	8760	6.86E+02	
$PM_{2.5}$		6.41E+01	8760	2.81E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-11-312-04	Control Device ID:	C260D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
11000 ACFM	@	158 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.56E+03	1.56E+00	99.90%
PM_{10}	6.86E+02	1.31E+00	99.90%
$PM_{2.5}$	2.81E+02	7.02E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-11-312-04	Control Device ID:	C260D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	441-11-312-04	Control Device ID:	C260D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.56E-01	1.56E+00	Grain Loading
PM_{10}		2.99E-01	1.31E+00	
$PM_{2.5}$		1.60E-01	7.02E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S260D				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
260			100.00%		
Stack height above grade (ft.)	102.00	Stack diameter (ft.) or	2.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

335

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.71	-80.00	19.00	26.04

Stack exhaust

Volume	11000 ACFM	Temperature	158 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	441-88-312-04	Control Device ID:	C260E

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		1.29E+02	8760	5.64E+02	Assumed control efficiency
PM_{10}		5.66E+01	8760	2.48E+02	
$PM_{2.5}$		2.32E+01	8760	1.02E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-88-312-04	Control Device ID:	C260E

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
8500 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.64E+02	5.64E-01	99.90%
PM_{10}	2.48E+02	4.74E-01	99.90%
$PM_{2.5}$	1.02E+02	2.54E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	441-88-312-04	Control Device ID:	C260E

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	441-88-312-04	Control Device ID:	C260E

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.29E-01	5.64E-01	Grain Loading
PM_{10}		1.08E-01	4.74E-01	
$PM_{2.5}$		5.79E-02	2.54E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S260E			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
260			100.00%	
Stack height above grade (ft.)	40.00	Stack diameter (ft.) or	1.76	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

375

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.55	-80.00	19.00	26.53

Stack exhaust

Volume	8500 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Blending Silo reclaim to Preheater Kiln feed
Associated process equipment: bucket elevator (441-68-412-04), air slide (441-1-416-04), constant weight hopper (TAG 441-01-04), air slide (521-08-416-04), bucket elevator (521-17-412-04), air slide (521-19-416-04), air slide (521-21-416-04), air slide (521-22-416-04), air slide (521-24-416-04), air slide (521-30-416-04), slide valve (521-02-393-04), slide valve (521-01-303-04), rotor weigh feeder (521-07-363-04), air slide (521-08-416-04)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
261	4600 stpd	4600 stpd

Type of Material Processed

Raw meal

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	521-14-312-04	Control Device ID:	C261A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.17E+02	8760	1.39E+03	Assumed control efficiency
PM_{10}		1.39E+02	8760	6.11E+02	
$PM_{2.5}$		5.70E+01	8760	2.50E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-14-312-04	Control Device ID:	C261A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
9500 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.39E+03	1.39E+00	99.90%
PM_{10}	6.11E+02	1.17E+00	99.90%
$PM_{2.5}$	2.50E+02	6.24E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-14-312-04	Control Device ID:	C261A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	521-14-312-04	Control Device ID:	C261A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.17E-01	1.39E+00	Grain Loading
PM_{10}		2.66E-01	1.17E+00	
$PM_{2.5}$		1.43E-01	6.24E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S261A			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
261			100.00%	
Stack height above grade (ft.)	67.00	Stack diameter (ft.) or	1.86	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

400

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.29	-80.00	19.00	27.39

Stack exhaust

Volume	9500 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	521-37-312-04	Control Device ID:	C261B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		9.35E+01	8760	4.10E+02	Assumed control efficiency
PM_{10}		4.12E+01	8760	1.80E+02	
$PM_{2.5}$		1.68E+01	8760	7.37E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-37-312-04	Control Device ID:	C261B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.10E+02	4.10E-01	99.90%
PM_{10}	1.80E+02	3.44E-01	99.90%
$PM_{2.5}$	7.37E+01	1.84E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	521-37-312-04	Control Device ID:	C261B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	521-37-312-04	Control Device ID:	C261B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		9.35E-02	4.10E-01	Grain Loading
PM_{10}		7.86E-02	3.44E-01	
$PM_{2.5}$		4.21E-02	1.84E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S261B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
261			100.00%	
Stack height above grade (ft.)	67.00	Stack diameter (ft.) or	0.95	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

300

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.17	-80.00	19.00	26.97

Stack exhaust

Volume	2500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Coal mill and kiln burner & calciner feed storage and reclaim
Associated process equipment: apron feeder dosing conveyor (885-24-421-01), ball mill (885-01-431-01), dinamic separator (885-07-427-01), screw conveyor (885-09-411-01), screw conveyor (886-01-411-01), pneumatic pump (886-03-417-01), finished product storage hopper (TAG 886-01-01), finished product storage hopper (TAG 886-02-01), pre-hopper (888-01-722-01), rotor weigh feeder (888-05-421-01), pre-hopper (888-02-722-01), rotor weigh feeder (888-06-722-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
262	20 stpd	20 stpd

Type of Material Processed

Crushed coal

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☑ Storage Bin	☐ Other, Describe	Name of Material Stored
				Crushed coal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Finshed Product Storage Hopper (for the kiln) (886-01-01)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	68.861

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☑ Storage Bin	☐ Other, Describe	Name of Material Stored
				Crushed coal

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Finshed Product Storage Hopper (for the calciner) (886-02-01)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	68.861

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	885-11-312-01	Control Device ID:	C262A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.48E+03	8760	6.49E+03	Assumed control efficiency
PM_{10}		6.52E+02	8760	2.85E+03	
$PM_{2.5}$		2.67E+02	8760	1.17E+03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	885-11-312-01	Control Device ID:	C262A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
47799 ACFM	@	185 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.49E+03	6.49E+00	99.90%
PM_{10}	2.85E+03	5.45E+00	99.90%
$PM_{2.5}$	1.17E+03	2.92E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	885-11-312-01	Control Device ID:	C262A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	885-11-312-01	Control Device ID:	C262A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.48E+00	6.49E+00	Grain Loading
PM_{10}		1.24E+00	5.45E+00	
$PM_{2.5}$		6.67E-01	2.92E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S262A			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
262			100.00%	
Stack height above grade (ft.)	90.00	Stack diameter (ft.) or	3.00	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

TBD

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.24	-80.00	19.00	30.75

Stack exhaust

Volume	32372 ACFM	Temperature	185 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	886-11-312-01	Control Device ID:	C262B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.50E+01	8760	2.41E+02	Assumed control efficiency
PM_{10}		2.42E+01	8760	1.06E+02	
$PM_{2.5}$		9.91E+00	8760	4.34E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-11-312-01	Control Device ID:	C262B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3235 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.41E+02	2.41E-01	99.90%
PM_{10}	1.06E+02	2.02E-01	99.90%
$PM_{2.5}$	4.34E+01	1.08E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-11-312-01	Control Device ID:	C262B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	886-11-312-01	Control Device ID:	C262B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.50E-02	2.41E-01	Grain Loading
PM_{10}		4.62E-02	2.02E-01	
$PM_{2.5}$		2.48E-02	1.08E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S262B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
262			100.00%	
Stack height above grade (ft.)	40.00	Stack diameter (ft.) or	1.08	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

415

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	46.92	-80.00	19.00	30.80

Stack exhaust

Volume	3235 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	886-12-312-01	Control Device ID:	C262C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		6.60E+01	8760	2.89E+02	Assumed control efficiency
PM_{10}		2.90E+01	8760	1.27E+02	
$PM_{2.5}$		1.19E+01	8760	5.20E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-12-312-01	Control Device ID:	C262C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1765 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.89E+02	2.89E-01	99.90%
PM_{10}	1.27E+02	2.43E-01	99.90%
$PM_{2.5}$	5.20E+01	1.30E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-12-312-01	Control Device ID:	C262C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	886-12-312-01	Control Device ID:	C262C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		6.60E-02	2.89E-01	Grain Loading
PM_{10}		5.54E-02	2.43E-01	
$PM_{2.5}$		2.97E-02	1.30E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S262C			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
262			100.00%	
Stack height above grade (ft.)	20.00	Stack diameter (ft.) or	0.80	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

515

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	41.01	-80.00	19.00	27.37

Stack exhaust

Volume	1765 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	886-13-312-01	Control Device ID:	C262D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.00E+01	8760	1.31E+02	Assumed control efficiency
PM_{10}		1.32E+01	8760	5.78E+01	
$PM_{2.5}$		5.40E+00	8760	2.37E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-13-312-01	Control Device ID:	C262D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1765 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.31E+02	1.31E-01	99.90%
PM_{10}	5.78E+01	1.10E-01	99.90%
$PM_{2.5}$	2.37E+01	5.91E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	886-13-312-01	Control Device ID:	C262D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	886-13-312-01	Control Device ID:	C262D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.00E-02	1.31E-01	AP-42
PM_{10}		2.52E-02	1.10E-01	
$PM_{2.5}$		1.35E-02	5.91E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S262D			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
262			100.00%	
Stack height above grade (ft.)	40.00	Stack diameter (ft.) or	0.80	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

360

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.80	80.00	19.00	27.63

Stack exhaust

Volume	1765 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Clinker Cooler
Associated process equipment: clinker cooler (561-01-472-04), clinker pan conveyor (571-01-414-04), cyclon (561-10-426-04), drag chain conveyor (561-12 415-04), drag chain conveyor (561-13-415-04)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
264	3120 stpd	3120 stpd

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		NA	8760	NA	
PM_{10}		NA	8760	NA	
$PM_{2.5}$		NA	8760	NA	
SO_X		NA	8760	NA	
CO		NA	8760	NA	
NO_X		NA	8760	NA	
VOC		NA	8760	NA	
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
488315 ACFM	@	465 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	NA	1.14E+02	
PM_{10}	NA	1.12E+02	
$PM_{2.5}$	NA	9.69E+01	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.60E+01	1.14E+02	MACT LLL, NSPS Subpart F, AP-42
PM_{10}		2.56E+01	1.12E+02	
$PM_{2.5}$		2.21E+01	9.69E+01	
SO_X		5.20E+01	2.28E+02	
CO		1.79E+02	7.86E+02	
NO_X		1.95E+02	8.54E+02	
VOC		1.30E+01	4.56E+01	
Others: (e.g., HAPs)	----------	----------	----------	
HCl		3.00E+00	3.00E+00	
Hg		2.10E+01	2.10E+01	
Dioxin/Furans		2.00E-01	2.00E-01	
THC		2.40E+01	2.40E+01	
H2SO4		1.43E+01	6.26E+01	
NH3		4.13E+01	3.06E+01	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
259, 263, 264			33.33%		
Stack height above grade (ft.)	345.00	Stack diameter (ft.) or	13.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

450

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	488315 ACFM	Temperature	465 F	Moisture	12.70%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	561-21-312-04	Control Device ID:	C264A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		0.00E+00	8760	0.00E+00	Assumed control efficiency
PM_{10}		0.00E+00	8760	0.00E+00	
$PM_{2.5}$		0.00E+00	8760	0.00E+00	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	561-21-312-04	Control Device ID:	C264A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
ACFM	@	F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	0.00E+00	0.00E+00	
PM_{10}	0.00E+00	0.00E+00	
$PM_{2.5}$	0.00E+00	0.00E+00	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	561-21-312-04	Control Device ID:	C264A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	561-21-312-04	Control Device ID:	C264A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		0.00E+00	0.00E+00	AP-42
PM_{10}		0.00E+00	0.00E+00	
$PM_{2.5}$		0.00E+00	0.00E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S264A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
264			100.00%		
Stack height above grade (ft.)		Stack diameter (ft.) or		Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

500

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	41.17	80.00	19.00	26.14

Stack exhaust

Volume	ACFM	Temperature	F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		3.97E-02	8760	1.59E-01	Assumed control efficiency
PM_{10}		1.30E-02	8760	5.24E-02	
$PM_{2.5}$		3.68E-03	8760	1.48E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5400 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.59E-01	1.59E-03	99.00%
PM_{10}	5.24E-02	5.24E-04	99.00%
$PM_{2.5}$	1.48E-02	1.48E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.97E-04	1.59E-03	AP-42
PM_{10}		1.30E-04	5.24E-04	
$PM_{2.5}$		3.68E-05	1.48E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
264 and 266			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.40	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

315

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	41.85	80.00	19.00	24.51

Stack exhaust

Volume	5400 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Main dust collector dust reclaim
Associated process equipment: mixing chamber (TAG 511-01-04), screw conveyor (511-50-411-04), pneumatic pump (511-51-417-04), dust hopper (511-03-04), screw conveyor (511-61-411-04), screw conveyor (511-63-411-04), screw conveyor (511-64-411-04), slide valve (511-65-393-04), pneumatic pump (511-66-417-04), screw conveyor (511-27-411-04), screw conveyor (511-29-411-04), screw conveyor (511-18-411-04), screw conveyor (511-28-411-04), main bag house (511-03-312-04)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
265	?	?

Type of Material Processed

CKD

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	CKD

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Dust Hopper (511-03-04)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	5,826 ft3

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-54-312-04	Control Device ID:	C265A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		7.09E+01	8760	3.11E+02	Assumed control efficiency
PM_{10}		3.12E+01	8760	1.37E+02	
$PM_{2.5}$		1.28E+01	8760	5.59E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-54-312-04	Control Device ID:	C265A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	3.11E+02	3.11E-01	99.90%
PM_{10}	1.37E+02	2.61E-01	99.90%
$PM_{2.5}$	5.59E+01	1.40E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-54-312-04	Control Device ID:	C265A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-54-312-04	Control Device ID:	C265A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		7.09E-02	3.11E-01	Grain Loading
PM_{10}		5.96E-02	2.61E-01	
$PM_{2.5}$		3.19E-02	1.40E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S265A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
265			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.95	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

500

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.11	-80.00	19.00	29.23

Stack exhaust

Volume	2500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-74-312-04	Control Device ID:	C265B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		9.88E+01	8760	4.33E+02	Assumed control efficiency
PM_{10}		4.35E+01	8760	1.90E+02	
$PM_{2.5}$		1.78E+01	8760	7.79E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-74-312-04	Control Device ID:	C265B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.33E+02	4.33E-01	99.90%
PM_{10}	1.90E+02	3.64E-01	99.90%
$PM_{2.5}$	7.79E+01	1.95E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-74-312-04	Control Device ID:	C265B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-74-312-04	Control Device ID:	C265B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		9.88E-02	4.33E-01	Grain Loading
PM_{10}		8.30E-02	3.64E-01	
$PM_{2.5}$		4.45E-02	1.95E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S265B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
265			100.00%		
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	1.13	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

515

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.30	-80.00	19.00	29.16

Stack exhaust

Volume	3500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-126-312-04	Control Device ID:	C265C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.43E+01	8760	6.28E+01	Assumed control efficiency
PM_{10}		6.31E+00	8760	2.76E+01	
$PM_{2.5}$		2.58E+00	8760	1.13E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-126-312-04	Control Device ID:	C265C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.28E+01	6.28E-02	99.90%
PM_{10}	2.76E+01	5.27E-02	99.90%
$PM_{2.5}$	1.13E+01	2.82E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-126-312-04	Control Device ID:	C265C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-126-312-04	Control Device ID:	C265C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.43E-02	6.28E-02	Grain Loading
PM_{10}		1.20E-02	5.27E-02	
$PM_{2.5}$		6.45E-03	2.82E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S265C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
265			100.00%		
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.43	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

515

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.25	80.00	19.00	28.85

Stack exhaust

Volume	500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Clinker dome storage and reclaim
Associated process equipment: clinker pan conveyor (571-02-414-04), clinker hopper (TAG 573-01-01), bulk mobile loader (573-06-347-01), belt conveyor (573-05-413-01), belt conveyor (573-39-413-01), clinker dome, belt conveyor (574-34-413-01), belt conveyor (574-37-413-01), belt conveyor (574-39-413-01), belt conveyor (574-31-413-01), belt conveyor (574-38-413-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
266	200 stph	200 stph

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Dome	Clinker

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Clinker Dome		3/1/1969

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	68,000 stph

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pan conveyor feed and belt conveyor reclaim

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Clinker

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Clinker Hopper (573-01-01)	TBD	TBD

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	386 stph

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pan conveyor feed and belt conveyor reclaim

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	573-08-312-01	Control Device ID:	C266A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		0.00E+00	8760	0.00E+00	Assumed control efficiency
PM_{10}		0.00E+00	8760	0.00E+00	
$PM_{2.5}$		0.00E+00	8760	0.00E+00	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	573-08-312-01	Control Device ID:	C266A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	0.00E+00	0.00E+00	
PM_{10}	0.00E+00	0.00E+00	
$PM_{2.5}$	0.00E+00	0.00E+00	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	573-08-312-01	Control Device ID:	C266A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	573-08-312-01	Control Device ID:	C266A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		0.00E+00	0.00E+00	AP-42
PM_{10}		0.00E+00	0.00E+00	
$PM_{2.5}$		0.00E+00	0.00E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.95	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

250

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.57	-80.00	19.00	24.04

Stack exhaust

Volume	2500 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.97E-02	8760	1.59E-01	Assumed control efficiency
PM_{10}		1.30E-02	8760	5.24E-02	
$PM_{2.5}$		3.68E-03	8760	1.48E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5400 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.59E-01	1.59E-03	99.00%
PM_{10}	5.24E-02	5.24E-04	99.00%
$PM_{2.5}$	1.48E-02	1.48E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	571-05-312-01	Control Device ID:	C266B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.97E-04	1.59E-03	AP-42
PM_{10}		1.30E-04	5.24E-04	
$PM_{2.5}$		3.68E-05	1.48E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
264 and 266			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.40	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

315

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	41.85	80.00	19.00	24.51

Stack exhaust

Volume	5400 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-44-312-01	Control Device ID:	C266C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		6.61E-03	8760	2.66E-02	Assumed control efficiency
PM_{10}		2.17E-03	8760	8.73E-03	
$PM_{2.5}$		6.14E-04	8760	2.47E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-44-312-01	Control Device ID:	C266C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6300 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.66E-02	2.66E-04	99.00%
PM_{10}	8.73E-03	8.73E-05	99.00%
$PM_{2.5}$	2.47E-03	2.47E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-44-312-01	Control Device ID:	C266C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-44-312-01	Control Device ID:	C266C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		6.61E-05	2.66E-04	AP-42
PM_{10}		2.17E-05	8.73E-05	
$PM_{2.5}$		6.14E-06	2.47E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.51	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

340

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.73	-80.00	19.00	25.63

Stack exhaust

Volume	6300 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		2.70E-02	8760	1.08E-01	Assumed control efficiency
PM_{10}		8.86E-03	8760	3.56E-02	
$PM_{2.5}$		2.50E-03	8760	1.01E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6300 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.08E-01	1.08E-03	99.00%
PM_{10}	3.56E-02	3.56E-04	99.00%
$PM_{2.5}$	1.01E-02	1.01E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.70E-04	1.08E-03	AP-42
PM_{10}		8.86E-05	3.56E-04	
$PM_{2.5}$		2.50E-05	1.01E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266D				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266 and 267			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.51	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

225

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.29	-80.00	19.00	28.72

Stack exhaust

Volume	6300 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-32-312-01	Control Device ID:	C266E

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.32E-02	8760	5.31E-02	Assumed control efficiency
PM_{10}		4.34E-03	8760	1.75E-02	
$PM_{2.5}$		1.23E-03	8760	4.93E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-32-312-01	Control Device ID:	C266E

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6300 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.31E-02	5.31E-04	99.00%
PM_{10}	1.75E-02	1.75E-04	99.00%
$PM_{2.5}$	4.93E-03	4.93E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-32-312-01	Control Device ID:	C266E

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-32-312-01	Control Device ID:	C266E

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.32E-04	5.31E-04	AP-42
PM_{10}		4.34E-05	1.75E-04	
$PM_{2.5}$		1.23E-05	4.93E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266E				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.51	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

260

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	40.35	80.00	19.00	22.49

Stack exhaust

Volume	6300 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-35-312-01	Control Device ID:	C266F

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.32E-02	8760	5.31E-02	Assumed control efficiency
PM_{10}		4.34E-03	8760	1.75E-02	
$PM_{2.5}$		1.23E-03	8760	4.93E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-35-312-01	Control Device ID:	C266F

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6300 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.31E-02	5.31E-04	99.00%
PM_{10}	1.75E-02	1.75E-04	99.00%
$PM_{2.5}$	4.93E-03	4.93E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-35-312-01	Control Device ID:	C266F

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-35-312-01	Control Device ID:	C266F

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.32E-04	5.31E-04	AP-42
PM_{10}		4.34E-05	1.75E-04	
$PM_{2.5}$		1.23E-05	4.93E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266F				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.51	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

375

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	39.78	80.00	19.00	23.83

Stack exhaust

Volume	6300 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-42-312-01	Control Device ID:	C266G

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		1.32E-02	8760	5.31E-02	Assumed control efficiency
PM_{10}		4.34E-03	8760	1.75E-02	
$PM_{2.5}$		1.23E-03	8760	4.93E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-42-312-01	Control Device ID:	C266G

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3200 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.31E-02	5.31E-04	99.00%
PM_{10}	1.75E-02	1.75E-04	99.00%
$PM_{2.5}$	4.93E-03	4.93E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-42-312-01	Control Device ID:	C266G

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-42-312-01	Control Device ID:	C266G

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.32E-04	5.31E-04	AP-42
PM_{10}		4.34E-05	1.75E-04	
$PM_{2.5}$		1.23E-05	4.93E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266G				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.08	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

305

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	40.64	-80.00	19.00	23.42

Stack exhaust

Volume	3200 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	573-11-312-01	Control Device ID:	C266H

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		0.00E+00	8760	0.00E+00	Assumed control efficiency
PM_{10}		0.00E+00	8760	0.00E+00	
$PM_{2.5}$		0.00E+00	8760	0.00E+00	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	573-11-312-01	Control Device ID:	C266H

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
ACFM	@	F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	0.00E+00	0.00E+00	
PM_{10}	0.00E+00	0.00E+00	
$PM_{2.5}$	0.00E+00	0.00E+00	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	573-11-312-01	Control Device ID:	C266H

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	573-11-312-01	Control Device ID:	C266H

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		0.00E+00	0.00E+00	AP-42
PM_{10}		0.00E+00	0.00E+00	
$PM_{2.5}$		0.00E+00	0.00E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266H				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266			100.00%		
Stack height above grade (ft.)		Stack diameter (ft.) or		Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

250

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.07	80.00	19.00	23.97

Stack exhaust

Volume	ACFM	Temperature	F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Clinker dome reclaim feed to clinker silo #15
Associated process equipment: belt conveyor (574-41-413-01), clinker silo #15 (572-02-232-02)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
267	1747.2 stpd	1747.2 stpd

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Clinker

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Clinker Silo #15 (572-02-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	3200

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.70E-02	8760	1.08E-01	Assumed control efficiency
PM_{10}		8.86E-03	8760	3.56E-02	
$PM_{2.5}$		2.50E-03	8760	1.01E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
6300 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.08E-01	1.08E-03	99.00%
PM_{10}	3.56E-02	3.56E-04	99.00%
$PM_{2.5}$	1.01E-02	1.01E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-46-312-01	Control Device ID:	C266D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.70E-04	1.08E-03	AP-42
PM_{10}		8.86E-05	3.56E-04	
$PM_{2.5}$		2.50E-05	1.01E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S266D				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
266 and 267			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.51	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

225

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.29	-80.00	19.00	28.72

Stack exhaust

Volume	6300 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Clinker dome reclaim feed to material storage building

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
268	748.8 stpd	748.8 stpd

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Storage Building	Clinker, Gypsum

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Storage Building		?

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	3100

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-48-312-01	Control Device ID:	C268A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		2.38E-03	8760	9.57E-03	Assumed control efficiency
PM_{10}		7.82E-04	8760	3.14E-03	
$PM_{2.5}$		2.21E-04	8760	8.88E-04	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-48-312-01	Control Device ID:	C268A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	9.57E-03	9.57E-05	99.00%
PM_{10}	3.14E-03	3.14E-05	99.00%
$PM_{2.5}$	8.88E-04	8.88E-06	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-48-312-01	Control Device ID:	C268A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-48-312-01	Control Device ID:	C268A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.38E-05	9.57E-05	AP-42
PM_{10}		7.82E-06	3.14E-05	
$PM_{2.5}$		2.21E-06	8.88E-06	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S268A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
268			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.13	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

215

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.73	-80.00	19.00	28.11

Stack exhaust

Volume	3500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	574-49-312-01	Control Device ID:	C268B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		2.38E-03	8760	9.57E-03	Assumed control efficiency
PM_{10}		7.82E-04	8760	3.14E-03	
$PM_{2.5}$		2.21E-04	8760	8.88E-04	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-49-312-01	Control Device ID:	C268B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
3500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	9.57E-03	9.57E-05	99.00%
PM_{10}	3.14E-03	3.14E-05	99.00%
$PM_{2.5}$	8.88E-04	8.88E-06	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	574-49-312-01	Control Device ID:	C268B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	574-49-312-01	Control Device ID:	C268B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.38E-05	9.57E-05	AP-42
PM_{10}		7.82E-06	3.14E-05	
$PM_{2.5}$		2.21E-06	8.88E-06	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S268B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
268			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.13	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

225

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.47	-80.00	19.00	27.93

Stack exhaust

Volume	3500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Clinker dome reclaim feed to clinker silo #1
Associated process equipment: #7 clinker belt conveyor (571-08-413-01), clinker silo #1 (572-01-232-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
269	624 stpd	624 stpd

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Clinker

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Raw Material Silo #1 (572-01-232-01)		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	1700

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Belt conveyor transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.02E-02	8760	4.08E-02	Assumed control efficiency
PM_{10}		3.34E-03	8760	1.34E-02	
$PM_{2.5}$		9.43E-04	8760	3.79E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2000 ACFM	@	140 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	4.08E-02	4.08E-04	99.00%
PM_{10}	1.34E-02	1.34E-04	99.00%
$PM_{2.5}$	3.79E-03	3.79E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	571-09-312-01	Control Device ID:	C254F

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.02E-04	4.08E-04	AP-42
PM_{10}		3.34E-05	1.34E-04	
$PM_{2.5}$		9.43E-06	3.79E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S254F				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
254 and 269			50.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.85	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

200

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.03	-80.00	19.00	31.18

Stack exhaust

Volume	2000 ACFM	Temperature	140 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Storage reclaim feed to Finish Mill #1
Associated process equipment: synthetic gypsum hopper (612-02-248-01), clinker conveyor feeder belt (612-08-413-01), clinker autoweight feeder (612-01-421-01), clinker conveyor feeder belt (612-08-413-01), stone autoweight feeder (612-06-421-01), gypsum autoweight feeder (612-07-421-01),

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
270	35 stph	35 stph

Type of Material Processed

Clinker, Gypsum, Limestone

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from front loader to synthetic gypsum hopper (612-02-248-01)

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	612-18-312-01	Control Device ID:	C270A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.27E-04	8760	5.11E-04	Assumed control efficiency
PM_{10}		4.18E-05	8760	1.68E-04	
$PM_{2.5}$		1.18E-05	8760	4.75E-05	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-18-312-01	Control Device ID:	C270A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	5.11E-04	5.11E-06	99.00%
PM_{10}	1.68E-04	1.68E-06	99.00%
$PM_{2.5}$	4.75E-05	4.75E-07	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-18-312-01	Control Device ID:	C270A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	612-18-312-01	Control Device ID:	C270A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.27E-06	5.11E-06	AP-42
PM_{10}		4.18E-07	1.68E-06	
$PM_{2.5}$		1.18E-07	4.75E-07	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S270A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
270			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	0.74	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

200

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.17	-80.00	19.00	31.22

Stack exhaust

Volume	1500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	612-20-312-01	Control Device ID:	C270B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.75E-01	8760	7.02E-01	Assumed control efficiency
PM_{10}		6.38E-02	8760	2.57E-01	
$PM_{2.5}$		9.87E-03	8760	3.97E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-20-312-01	Control Device ID:	C270B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
15000 ACFM	@	195 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	7.02E-01	7.02E-03	99.00%
PM_{10}	2.57E-01	2.57E-03	99.00%
$PM_{2.5}$	3.97E-02	3.97E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-20-312-01	Control Device ID:	C270B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	612-20-312-01	Control Device ID:	C270B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.75E-03	7.02E-03	AP-42
PM_{10}		6.38E-04	2.57E-03	
$PM_{2.5}$		9.87E-05	3.97E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S270B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
270			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	2.34	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

265

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.19	-80.00	19.00	30.67

Stack exhaust

Volume	15000 ACFM	Temperature	195 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Fug003	Control Device ID:	Z270

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.27E-04	5.11E-04	AP-42
PM_{10}		4.18E-05	1.68E-04	
$PM_{2.5}$		1.18E-05	4.75E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z270			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
Z270			100.00%	
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

215

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.23	80.00	19.00	31.49

Stack exhaust

Volume	ACFM	Temperature	F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Finish Mill #1
Associated process equipment: separator (622-06-427-01), cement ball mill #1 (622-01-431-01), air slide (622-10-416-01), bucket elevator (622-05-412-01), pneumatic pump (622-11-417-01)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
271	35 stph	35 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	622-07-312-01	Control Device ID:	C271A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		6.85E+02	8760	3.00E+03	Assumed control efficiency
PM_{10}		3.01E+02	8760	1.32E+03	
$PM_{2.5}$		1.23E+02	8760	5.40E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-07-312-01	Control Device ID:	C271A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
22400 ACFM	@	194 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	3.00E+03	3.00E+00	99.90%
PM_{10}	1.32E+03	2.52E+00	99.90%
$PM_{2.5}$	5.40E+02	1.35E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-07-312-01	Control Device ID:	C271A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	622-07-312-01	Control Device ID:	C271A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		6.85E-01	3.00E+00	Grain Loading
PM_{10}		5.75E-01	2.52E+00	
$PM_{2.5}$		3.08E-01	1.35E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S271A			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
271			100.00%	
Stack height above grade (ft.)	76.00	Stack diameter (ft.) or	2.85	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

285

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.87	-80.00	19.00	30.74

Stack exhaust

Volume	22400 ACFM	Temperature	194 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	612-25-312-01	Control Device ID:	C271B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		2.08E+02	8760	9.12E+02	Assumed control efficiency
PM_{10}		9.16E+01	8760	4.01E+02	
$PM_{2.5}$		3.75E+01	8760	1.64E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-25-312-01	Control Device ID:	C271B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
15000 ACFM	@	195 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	9.12E+02	9.12E-01	99.90%
PM_{10}	4.01E+02	7.66E-01	99.90%
$PM_{2.5}$	1.64E+02	4.10E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-25-312-01	Control Device ID:	C271B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	612-25-312-01	Control Device ID:	C271B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.08E-01	9.12E-01	Grain Loading
PM_{10}		1.75E-01	7.66E-01	
$PM_{2.5}$		9.37E-02	4.10E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S271B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
271			100.00%	
Stack height above grade (ft.)	40.00	Stack diameter (ft.) or	2.34	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

235

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.92	-80.00	19.00	30.30

Stack exhaust

Volume	15000 ACFM	Temperature	195 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Storage reclaim feed to Finish Mill #2
Associated process equipment: wet stone autoweight 24" belt feeder (612-02-421-02), feed belt conveyor (612-10-413-02), cold gypsum/clinker autoweight 42" belt feeder (612-03-421-02), feed belt conveyor (612-10-413-02), hot clinker autoweight 42" belt feeder (612-04-421-02), clinker feeder (612-06-413-02), synthetic gypsum hopper (612-07-248-02), gypsum belt feeder (612-09-413-02)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
272	105 stph	105 stph

Type of Material Processed

Clinker, Gypsum, Limestone, CKD

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitive emissions result from front end loader to synthetic gypsum hopper (612-07-248-02)

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	612-14-312-02	Control Device ID:	C272A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		6.82E-01	8760	2.74E+00	Assumed control efficiency
PM_{10}		2.50E-01	8760	1.00E+00	
$PM_{2.5}$		3.79E-02	8760	1.52E-01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-14-312-02	Control Device ID:	C272A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
4000 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.74E+00	2.74E-02	99.00%
PM_{10}	1.00E+00	1.00E-02	99.00%
$PM_{2.5}$	1.52E-01	1.52E-03	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-14-312-02	Control Device ID:	C272A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	612-14-312-02	Control Device ID:	C272A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		6.82E-03	2.74E-02	AP-42
PM_{10}		2.50E-03	1.00E-02	
$PM_{2.5}$		3.79E-04	1.52E-03	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S272A				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
272			100.00%		
Stack height above grade (ft.)	25.00	Stack diameter (ft.) or	1.21	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

250

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	46.28	-80.00	19.00	27.43

Stack exhaust

Volume	4000 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	622-24-312-02	Control Device ID:	C272B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.43E+01	8760	2.38E+02	Assumed control efficiency
PM_{10}		2.39E+01	8760	1.05E+02	
$PM_{2.5}$		9.78E+00	8760	4.28E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-24-312-02	Control Device ID:	C272B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	464 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.38E+02	2.38E-01	99.90%
PM_{10}	1.05E+02	2.00E-01	99.90%
$PM_{2.5}$	4.28E+01	1.07E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-24-312-02	Control Device ID:	C272B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	622-24-312-02	Control Device ID:	C272B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.43E-02	2.38E-01	Grain Loading
PM_{10}		4.56E-02	2.00E-01	
$PM_{2.5}$		2.44E-02	1.07E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S272B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
272			100.00%	
Stack height above grade (ft.)	45.00	Stack diameter (ft.) or	0.95	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

260

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.71	-80.00	19.00	28.92

Stack exhaust

Volume	2500 ACFM	Temperature	464 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Fug004	Control Device ID:	Z272

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.08E-04	2.04E-03	AP-42
PM_{10}		1.67E-04	6.72E-04	
$PM_{2.5}$		4.72E-05	1.90E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z272			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
Z272			100.00%	
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

215

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.83	80.00	19.00	29.67

Stack exhaust					
Volume	ACFM	Temperature	F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Finish Mill #2

Associated process equipment: separator dust collector air slide (631-01-416-02), transfer air slide (631-02-416-02), cement cooler (E) (631-06-338-02), air slide (631-15-416-02), cement cooler (W) (631-10-338-02), FK air slide (631-08-416-02), pneumatic transport (631-09-417-02), feed belt conveyor (612-10-413-02), feed bucket elevator (612-11-412-02), #2 finish mill (622-01-431-02), air slide (622-04-416-02), separator bucket elevator (622-06-412-02), gluconate feeder (612-12-421-02), feed bucket elevator (612-11-412-02), pneumatic pump (511-51-417-04), dust hopper (511-03-04), feed belt conveyor (612-10-413-02)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
273	105 stph	105 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source is a combination of new and existing equipment. Some of the existing equipment will be refurbished, repaired, and upgraded.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	622-09-312-02	Control Device ID:	C273A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.46E+03	8760	6.41E+03	Assumed control efficiency
PM_{10}		6.44E+02	8760	2.82E+03	
$PM_{2.5}$		2.64E+02	8760	1.15E+03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-09-312-02	Control Device ID:	C273A

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
105400 ACFM	@	194 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.41E+03	6.41E+00	99.90%
PM_{10}	2.82E+03	5.39E+00	99.90%
$PM_{2.5}$	1.15E+03	2.89E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-09-312-02	Control Device ID:	C273A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	622-09-312-02	Control Device ID:	C273A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.46E+00	6.41E+00	Grain Loading
PM_{10}		1.23E+00	5.39E+00	
$PM_{2.5}$		6.59E-01	2.89E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S273A			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
273			100.00%	
Stack height above grade (ft.)	101.00	Stack diameter (ft.) or	8.00	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

170

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.64	-80.00	19.00	29.27

Stack exhaust

Volume	83000 ACFM	Temperature	195 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	622-15-312-02	Control Device ID:	C273B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		3.11E+02	8760	1.36E+03	Assumed control efficiency
PM_{10}		1.37E+02	8760	6.00E+02	
$PM_{2.5}$		5.60E+01	8760	2.45E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-15-312-02	Control Device ID:	C273B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
22400 ACFM	@	194 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.36E+03	1.36E+00	99.90%
PM_{10}	6.00E+02	1.15E+00	99.90%
$PM_{2.5}$	2.45E+02	6.14E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	622-15-312-02	Control Device ID:	C273B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	622-15-312-02	Control Device ID:	C273B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		3.11E-01	1.36E+00	Grain Loading
PM_{10}		2.62E-01	1.15E+00	
$PM_{2.5}$		1.40E-01	6.14E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S273B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
273			100.00%		
Stack height above grade (ft.)	101.00	Stack diameter (ft.) or	3.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

190

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.76	-80.00	19.00	29.39

Stack exhaust

Volume	50000 ACFM	Temperature	195 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	612-19-312-02	Control Device ID:	C273C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.67E-02	8760	6.71E-02	Assumed control efficiency
PM_{10}		5.49E-03	8760	2.21E-02	
$PM_{2.5}$		1.55E-03	8760	6.23E-03	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-19-312-02	Control Device ID:	C273C

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.71E-02	6.71E-04	99.00%
PM_{10}	2.21E-02	2.21E-04	99.00%
$PM_{2.5}$	6.23E-03	6.23E-05	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	612-19-312-02	Control Device ID:	C273C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	612-19-312-02	Control Device ID:	C273C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.67E-04	6.71E-04	AP-42
PM_{10}		5.49E-05	2.21E-04	
$PM_{2.5}$		1.55E-05	6.23E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S273C				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
273			100.00%		
Stack height above grade (ft.)	38.00	Stack diameter (ft.) or	0.95	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

240

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.25	-80.00	19.00	29.44

Stack exhaust

Volume	2500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

East Cement Silos

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
209	1680 stpd	1680 stpd

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #18		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #19		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #20		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #21		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #22		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #23		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #24		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #25		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #26		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #27		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #28		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #29		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission points are controlled by baghouses.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	EAST CEMENT SILOS (18-29)	Control Device ID:	C209

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		4.39E+02	8760	1.92E+03	Assumed control efficiency
PM_{10}		1.93E+02	8760	8.46E+02	
$PM_{2.5}$		7.90E+01	8760	3.46E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	EAST CEMENT SILOS (18-29)	Control Device ID:	C209

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
12000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.92E+03	1.92E+00	99.90%
PM_{10}	8.46E+02	1.62E+00	99.90%
$PM_{2.5}$	3.46E+02	8.65E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	EAST CEMENT SILOS (18-29)	Control Device ID:	C209

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	EAST CEMENT SILOS (18-29)	Control Device ID:	C209

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.39E-01	1.92E+00	Grain Loading
PM_{10}		3.69E-01	1.62E+00	
$PM_{2.5}$		1.98E-01	8.65E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S209				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
209			100.00%		
Stack height above grade (ft.)	115.00	Stack diameter (ft.) or	2.30	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

200

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.87	-80.00	19.00	34.26

Stack exhaust

Volume	12000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

West Cement Silos

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
210	1680 stpd	1680 stpd

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #6		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #7		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #8		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #9		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #10		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #11		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #12		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #13		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #14		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #15		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #16		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☑ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored
				Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Silo #17		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	2161

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	WEST CEMENT SILOS (6-17)	Control Device ID:	C210

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		4.39E+02	8760	1.92E+03	Assumed control efficiency
PM_{10}		1.93E+02	8760	8.46E+02	
$PM_{2.5}$		7.90E+01	8760	3.46E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	WEST CEMENT SILOS (6-17)	Control Device ID:	C210

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
12000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.92E+03	1.92E+00	99.90%
PM_{10}	8.46E+02	1.62E+00	99.90%
$PM_{2.5}$	3.46E+02	8.65E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	WEST CEMENT SILOS (6-17)	Control Device ID:	C210

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	WEST CEMENT SILOS (6-17)	Control Device ID:	C210

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.39E-01	1.92E+00	Grain Loading
PM_{10}		3.69E-01	1.62E+00	
$PM_{2.5}$		1.98E-01	8.65E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S210				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
210			100.00%		
Stack height above grade (ft.)	115.00	Stack diameter (ft.) or	2.30	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

500

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	48.60	-80.00	19.00	34.87

Stack exhaust

Volume	12000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

South Packer

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
213	15 stph	15 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Hopper 5		12/1/1960

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	South Packer Baghouse	Control Device ID:	C213

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.65E+02	8760	2.48E+03	Assumed control efficiency
PM_{10}		2.49E+02	8760	1.09E+03	
$PM_{2.5}$		1.02E+02	8760	4.46E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	South Packer Baghouse	Control Device ID:	C213

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design	
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?	
		☐ Yes	☐ No
Can each compartment be isolated for repairs and/or filter replacement?		☐ Yes	☐ No
Are temperature controls provided (Describe in detail)		☐ Yes	☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
34000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.48E+03	2.48E+00	99.90%
PM_{10}	1.09E+03	2.08E+00	99.90%
$PM_{2.5}$	4.46E+02	1.11E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	South Packer Baghouse	Control Device ID:	C213

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	South Packer Baghouse	Control Device ID:	C213

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.65E-01	2.48E+00	Grain Loading
PM_{10}		4.75E-01	2.08E+00	
$PM_{2.5}$		2.54E-01	1.11E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S213				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
213			100.00%		
Stack height above grade (ft.)	61.00	Stack diameter (ft.) or	3.90	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

370

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.15	-80.00	19.00	36.74

Stack exhaust

Volume	34000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

North Packer

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
214	8 stph	8 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Hopper 1		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Hopper 2		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Hopper 3		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:

i. Expected commencement date of construction/reconstruction/installation:

ii. Expected completion date of construction/reconstruction/installation:

iii. Anticipated date of start-up:

Operation will continue as permitted.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	North Packer Baghouse	Control Device ID:	C214

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.65E+02	8760	2.48E+03	Assumed control efficiency
PM_{10}		2.49E+02	8760	1.09E+03	
$PM_{2.5}$		1.02E+02	8760	4.46E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	North Packer Baghouse	Control Device ID:	C214

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design	
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?	
		☐ Yes	☐ No
Can each compartment be isolated for repairs and/or filter replacement?		☐ Yes	☐ No
Are temperature controls provided (Describe in detail)		☐ Yes	☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
34000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.48E+03	2.48E+00	99.90%
PM_{10}	1.09E+03	2.08E+00	99.90%
$PM_{2.5}$	4.46E+02	1.11E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	North Packer Baghouse	Control Device ID:	C214

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	North Packer Baghouse	Control Device ID:	C214

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.65E-01	2.48E+00	Grain Loading
PM_{10}		4.75E-01	2.08E+00	
$PM_{2.5}$		2.54E-01	1.11E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S214				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
214			100.00%		
Stack height above grade (ft.)	61.00	Stack diameter (ft.) or	3.90	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

360

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.58	-80.00	19.00	37.04

Stack exhaust

Volume	34000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Masonry Packer

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
215	12 stph	12 stph

Type of Material Processed

Masonry

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Hopper	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Hopper 4		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	Masonry Packer Baghouse	Control Device ID:	C215

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		5.65E+02	8760	2.48E+03	Assumed control efficiency
PM_{10}		2.49E+02	8760	1.09E+03	
$PM_{2.5}$		1.02E+02	8760	4.46E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	Masonry Packer Baghouse	Control Device ID:	C215

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design	
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?	
		☐ Yes	☐ No
Can each compartment be isolated for repairs and/or filter replacement?		☐ Yes	☐ No
Are temperature controls provided (Describe in detail)		☐ Yes	☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
34000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.48E+03	2.48E+00	99.90%
PM_{10}	1.09E+03	2.08E+00	99.90%
$PM_{2.5}$	4.46E+02	1.11E+00	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	Masonry Packer Baghouse	Control Device ID:	C215

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Masonry Packer Baghouse	Control Device ID:	C215

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.65E-01	2.48E+00	Grain Loading
PM_{10}		4.75E-01	2.08E+00	
$PM_{2.5}$		2.54E-01	1.11E+00	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S215				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
215			100.00%		
Stack height above grade (ft.)	61.00	Stack diameter (ft.) or	3.90	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

370

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	47.57	-80.00	19.00	36.95

Stack exhaust

Volume	34000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

East/West Truck Loading

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
216	76 stph	76 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Loading Bin	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
East Truck Loading Bins		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Loading Bin	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
West Truck Loading Bins		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	EAST/WEST TRUCK LOADING Baghouse	Control Device ID:	C216

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.66E+02	8760	7.28E+02	Assumed control efficiency
PM_{10}		7.32E+01	8760	3.20E+02	
$PM_{2.5}$		2.99E+01	8760	1.31E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	EAST/WEST TRUCK LOADING Baghouse	Control Device ID:	C216

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design	
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?	
		☐ Yes	☐ No
Can each compartment be isolated for repairs and/or filter replacement?		☐ Yes	☐ No
Are temperature controls provided (Describe in detail)		☐ Yes	☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
10000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	7.28E+02	7.28E-01	99.90%
PM_{10}	3.20E+02	6.12E-01	99.90%
$PM_{2.5}$	1.31E+02	3.28E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	EAST/WEST TRUCK LOADING Baghouse	Control Device ID:	C216

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	EAST/WEST TRUCK LOADING Baghouse	Control Device ID:	C216

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.66E-01	7.28E-01	Grain Loading
PM_{10}		1.40E-01	6.12E-01	
$PM_{2.5}$		7.48E-02	3.28E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S216			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
216			100.00%	
Stack height above grade (ft.)	50.00	Stack diameter (ft.) or	3.30	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

400

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.38	-80.00	19.00	37.25

Stack exhaust

Volume	10000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

New Truck Loading

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
217	12 stph	12 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Loading Bin	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
New Truck Loading Bin		5/1/1963

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	NEW TRUCK LOADING Baghouse (Scale 3)	Control Device ID:	C217

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		7.32E+01	8760	3.20E+02	Assumed control efficiency
PM_{10}		3.22E+01	8760	1.41E+02	
$PM_{2.5}$		1.32E+01	8760	5.77E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	NEW TRUCK LOADING Baghouse (Scale 3)	Control Device ID:	C217

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
2000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	3.20E+02	3.20E-01	99.90%
PM_{10}	1.41E+02	2.69E-01	99.90%
$PM_{2.5}$	5.77E+01	1.44E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	NEW TRUCK LOADING Baghouse (Scale 3)	Control Device ID:	C217

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	NEW TRUCK LOADING Baghouse (Scale 3)	Control Device ID:	C217

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		7.32E-02	3.20E-01	Grain Loading
PM_{10}		6.15E-02	2.69E-01	
$PM_{2.5}$		3.29E-02	1.44E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S217				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
217			100.00%		
Stack height above grade (ft.)	36.00	Stack diameter (ft.) or	0.90	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

475

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	49.60	-80.00	19.00	36.17

Stack exhaust

Volume	2000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Railcar Loading

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
218	9 stph	9 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Loading Bin	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Railcar East Loading Bin		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☑ Other, Describe	Name of Material Stored
			Loading Bin	Cement

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
Railcar West Loading Bin		6/1/1957

State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Loose	--

Turn over per year in tons	Turn over per day in tons
--	

Describe fugitive dust control system for loading and handling operations

Baghouse control

Describe material handling system

Pneumatic transport

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	RAILCAR LOADING Baghouse	Control Device ID:	C218

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		1.83E+02	8760	8.01E+02	Assumed control efficiency
PM_{10}		8.05E+01	8760	3.53E+02	
$PM_{2.5}$		3.29E+01	8760	1.44E+02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F	% Moisture	@°F	% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	RAILCAR LOADING Baghouse	Control Device ID:	C218

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design	
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?	
		☐ Yes	☐ No
Can each compartment be isolated for repairs and/or filter replacement?		☐ Yes	☐ No
Are temperature controls provided (Describe in detail)		☐ Yes	☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
5000 ACFM	@	70 F	

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	8.01E+02	8.01E-01	99.90%
PM_{10}	3.53E+02	6.73E-01	99.90%
$PM_{2.5}$	1.44E+02	3.61E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	RAILCAR LOADING Baghouse	Control Device ID:	C218

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	RAILCAR LOADING Baghouse	Control Device ID:	C218

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.83E-01	8.01E-01	Grain Loading
PM_{10}		1.54E-01	6.73E-01	
$PM_{2.5}$		8.23E-02	3.61E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S218			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
218			100.00%	
Stack height above grade (ft.)	53.00	Stack diameter (ft.) or	1.10	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

360

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.30	-80.00	19.00	34.70

Stack exhaust

Volume	5000 ACFM	Temperature	70 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Railcar Loading

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
178	12 stph	12 stph

Type of Material Processed

Cement

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of existing equipment that will be refurbished, repaired, and upgraded as needed.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from cement loading into railcars.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation: ii. Expected completion date of construction/reconstruction/installation: iii. Anticipated date of start-up:	Operation will continue as permitted.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	New Railcar Loading Baghouse (178)	Control Device ID:	C178

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate: Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Calculation/ Estimation Method
PM		6.71E-02	8760	2.70E-01	Assumed control efficiency
PM_{10}		2.46E-02	8760	9.89E-02	
$PM_{2.5}$		3.73E-03	8760	1.50E-02	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	New Railcar Loading Baghouse (178)	Control Device ID:	C178

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design
TBD	TBD	☐ Suction Design

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
ACFM	@	F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.70E-01	2.70E-03	99.00%
PM_{10}	9.89E-02	9.89E-04	99.00%
$PM_{2.5}$	1.50E-02	1.50E-04	99.00%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	New Railcar Loading Baghouse (178)	Control Device ID:	C178

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	New Railcar Loading Baghouse (178)	Control Device ID:	C178

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		6.71E-04	2.70E-03	AP-42
PM_{10}		2.46E-04	9.89E-04	
$PM_{2.5}$		3.73E-05	1.50E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S178			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
178			100.00%	
Stack height above grade (ft.)	13.00	Stack diameter (ft.) or	0.74	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

160

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	50.27	80.00	19.00	30.43

Stack exhaust

Volume	ACFM	Temperature	75 F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Limestone Storage Pile

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
180	4000 st	4000 st

Type of Material Processed

Limestone

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

NA

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from storage pile transfers and wind erosion.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation: ii. Expected completion date of construction/reconstruction/installation: iii. Anticipated date of start-up:	Operation will continue as permitted.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Limestone Storage Pile	Control Device ID:	Z180

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		7.47E-04	3.27E-03	
PM_{10}		3.53E-04	1.55E-03	
$PM_{2.5}$		5.35E-05	2.34E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z180				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
Z180			NA		
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

140

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	53.50	80.00	19.00	36.63

Stack exhaust					
Volume	NA ACFM	Temperature	NA F	Moisture	NA%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Coal Storage Pile

Manufacturer	Model No.	Number of Sources
TBD	TBD	1

Source Designation	Maximum Capacity	Rated Capacity
181	1500 st	1500 st

Type of Material Processed

Coal

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

NA

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from storage pile transfers and wind erosion.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Coal Storage Pile	Control Device ID:	Z181

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.13E-04	2.25E-03	
PM_{10}		2.43E-04	1.06E-03	
$PM_{2.5}$		3.68E-05	1.61E-04	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z181				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
Z181			NA		
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

140

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	54.59	80.00	19.00	37.78

Stack exhaust

Volume	NA ACFM	Temperature	NA F	Moisture	NA%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Unpaved Roads

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
184	NA	NA

Type of Material Processed

NA

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

NA

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from vehicle travel on unpaved roads.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Unpaved Roads	Control Device ID:	Z184

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.62E-01	7.21E-01	
PM_{10}		1.34E-01	2.09E-01	
$PM_{2.5}$		1.34E-02	2.09E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z184				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
174			NA		
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

TBD

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Stack exhaust					
Volume	NA ACFM	Temperature	NA F	Moisture	NA%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Paved Roads

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
185	NA	NA

Type of Material Processed

NA

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

NA

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Fugitives result from vehicle travel on paved roads.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	Operation will continue as permitted.
ii. Expected completion date of construction/reconstruction/installation:	
iii. Anticipated date of start-up:	

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Paved Roads	Control Device ID:	Z185

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.51E+00	2.36E+00	
PM_{10}		3.02E-01	4.72E-01	
$PM_{2.5}$		7.42E-02	1.16E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	Z185				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
185			NA		
Stack height above grade (ft.)	NA	Stack diameter (ft.) or	NA	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

TBD

Does stack height meet Good Engineering Practice (GEP)?

NA

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

Stack exhaust

Volume	NA ACFM	Temperature	NA F	Moisture	NA%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Preheater/Precalciner Kiln
Associated process equipment: preheater 5 stages (531-01-462-04), hot gas cyclone (885-34-426-01), calciner (531-02-464-04), rotary kiln (541-01-471-04), air slide (521-08-416-04), rotor weigh feeder (521-07-363-04), kiln burner (551-01-474-04), activated carbon silo (511-02-04), L.I.W. feeder (511-111-481-04), hydrated lime silo (TAG 511-04-04), L.I.W. feeder (511-85-481-04), screw conveyor (511-86-411-04), vent hopper (TAG 511-05-04), nozzle lance and downcomer (531-12-323-04)

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
263	3120 stpd	3120 stpd

Type of Material Processed

Clinker

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) **From:** None **To:** None

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number #2 Fuel Oil	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF Btu/SCF
Coal	22.7 TPH	182,500 Tons	% by wt			Btu/lb Btu/lb
Other* Non-hazardous Engineered Fuels						
Spent Activated Carbon						
Class A Dried Sewage Sludge						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Ammonia

Tank I.D. No.	Manufacturer	Date Installed
T263		

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

NA

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Emission point(s) are controlled by baghouse(s).

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		NA	8760	NA	
PM_{10}		NA	8760	NA	
$PM_{2.5}$		NA	8760	NA	
SO_X		NA	8760	NA	
CO		NA	8760	NA	
NO_X		NA	8760	NA	
VOC		NA	8760	NA	
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
488315 ACFM	@	465 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	NA	1.14E+02	
PM_{10}	NA	1.12E+02	
$PM_{2.5}$	NA	9.69E+01	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-03-312-04	Control Device ID:	C259B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.60E+01	1.14E+02	MACT LLL, NSPS Subpart F, AP-42
PM_{10}		2.56E+01	1.12E+02	
$PM_{2.5}$		2.21E+01	9.69E+01	
SO_X		5.20E+01	2.28E+02	
CO		1.79E+02	7.86E+02	
NO_X		1.95E+02	8.54E+02	
VOC		1.30E+01	4.56E+01	
Others: (e.g., HAPs)	----------	----------	----------	
HCl		3.00E+00	3.00E+00	
Hg		2.10E+01	2.10E+01	
Dioxin/Furans		2.00E-01	2.00E-01	
THC		2.40E+01	2.40E+01	
H2SO4		1.43E+01	6.26E+01	
NH3		4.13E+01	3.06E+01	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
259, 263, 264			33.33%		
Stack height above grade (ft.)	345.00	Stack diameter (ft.) or	13.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes	☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

450

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	488315 ACFM	Temperature	465 F	Moisture	12.70%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - SNCR	Control Device ID:	C263A

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
$PM_{2.5}$					
SO_X					
CO					
NO_X		NA	8760	NA	
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

10.

- ☐ **Selective Catalytic Reduction (SCR)**
- ☑ **Selective Non-Catalytic Reduction (SNCR)**
- ☐ **Non-Selective Catalytic Reduction (NSCR)**

Equipment Specifications

Manufacturer	Type	Model No.
TBD		

Design Inlet Volume (SCFM)	Design operating temperature (°F)

Is the system equipped with process controls for proper mixing/control of the reducing agent in gas stream? If yes, give details.

Attach efficiency and other pertinent information (e.g. ammonia slip)

Operating Parameters

Volume of gases handled

488315 ACFM @ 465 °F

Operating temperature range for the SCR/SNCR/NSCR system (°F)

From °F To °F

Reducing agent used, if any	Oxidation catalyst used, if any
Ammonia	None

State expected range of usage rate and concentration.

Service life of catalyst	Ammoni slip (ppm)

Describe fully with a sktech giving locations of equipment, control systems, important parameters and method of operation.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
NOx	NA	8.54E+02	Varies

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - SNCR	Control Device ID:	C263A

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will follow manufacturer's recommended specifications for maintenance procedures and schedule for the proper operation and maintenance of the equipment.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - SNCR	Control Device ID:	C263A

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		See Stack 259B		
PM_{10}				
$PM_{2.5}$				
SO_X				
CO				
NO_X		1.95E+02	8.54E+02	
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
263			100.00%		
Stack height above grade (ft.)	0.00	Stack diameter (ft.) or	0.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

575

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	460000 ACFM	Temperature	465 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Lime Control System	Control Device ID:	C263B

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
$PM_{2.5}$					
SO_X		NA	8760	NA	
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	
HCl		NA	NA	NA	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

13. Other Control Equipment

Equipment Specifications

Manufacturer	Type	Model No.
TBD	Hydrated Lime Control System	TBD

Design Volume (SCFM)	Capacity
229474.2857	

Describe pH monitoring and pH adjustment, if any.

Indicate the liquid flow rater and describe equipment provided to measure pressure drop and flow rate, if any.

Attach efficiency curve and/or other efficienty information.

Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Operating Parameters

Volume of gases handled

488315	ACFM @	465	°F	12.7	% moisture

Describe fully giving important parameters and method of operation.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
SOx	NA	2.28E+02	
HCl	NA	1.34E+01	

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Lime Control System	Control Device ID:	C263B

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will follow manufacturer's recommended specifications for maintenance procedures and schedule for the proper operation and maintenance of the equipment.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Lime Control System	Control Device ID:	C263B

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		See Stack 259B		
PM_{10}				
$PM_{2.5}$				
SO_X		5.20E+01	2.28E+02	
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	
HCl		3.06E+00	1.34E+01	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	0.00	Stack diameter (ft.) or	0.00	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

575

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	460000 ACFM	Temperature	465 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Activated Carbon System	Control Device ID:	C263C

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
$PM_{2.5}$					
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	
Hg		NA	NA	NA	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			

Inlet Volume		ACFM	Outlet Volume		ACFM
@°F	% Moisture		@°F	% Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

13. Other Control Equipment

Equipment Specifications

Manufacturer	Type	Model No.
TBD	Activated Carbon Control System	TBD

Design Volume (SCFM)	Capacity
229474.2857	

Describe pH monitoring and pH adjustment, if any.

Indicate the liquid flow rater and describe equipment provided to measure pressure drop and flow rate, if any.

Attach efficiency curve and/or other efficienty information.

Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Operating Parameters

Volume of gases handled

488315	ACFM @	465	°F	12.7	% moisture

Describe fully giving important parameters and method of operation.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Activated Carbon System	Control Device ID:	C263C

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will follow manufacturer's recommended specifications for maintenance procedures and schedule for the proper operation and maintenance of the equipment.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Main Kiln Stack - Activated Carbon System	Control Device ID:	C263C

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		See Stack 259B		
PM_{10}				
$PM_{2.5}$				
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	
Hg		2.70E-03	1.20E-02	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S259B				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
263			100.00%		
Stack height above grade (ft.)	0.00	Stack diameter (ft.) or	0.00	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

575

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.56	-80.00	19.00	28.53

Stack exhaust

Volume	460000 ACFM	Temperature	465 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-114-312-04	Control Device ID:	C263D

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		5.62E+01	8760	2.46E+02	Assumed control efficiency
PM_{10}		2.47E+01	8760	1.08E+02	
$PM_{2.5}$		1.01E+01	8760	4.43E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-114-312-04	Control Device ID:	C263D

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	2.46E+02	2.46E-01	99.90%
PM_{10}	1.08E+02	2.07E-01	99.90%
$PM_{2.5}$	4.43E+01	1.11E-01	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-114-312-04	Control Device ID:	C263D

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-114-312-04	Control Device ID:	C263D

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		5.62E-02	2.46E-01	Grain Loading
PM_{10}		4.72E-02	2.07E-01	
$PM_{2.5}$		2.53E-02	1.11E-01	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263D			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	50.00	Stack diameter (ft.) or	0.74	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.78	80.00	19.00	26.31

Stack exhaust

Volume	1500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-122-312-04	Control Device ID:	C263E

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.89E+01	8760	8.26E+01	Assumed control efficiency
PM_{10}		8.30E+00	8760	3.63E+01	
$PM_{2.5}$		3.39E+00	8760	1.49E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-122-312-04	Control Device ID:	C263E

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	8.26E+01	8.26E-02	99.90%
PM_{10}	3.63E+01	6.94E-02	99.90%
$PM_{2.5}$	1.49E+01	3.72E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-122-312-04	Control Device ID:	C263E

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-122-312-04	Control Device ID:	C263E

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.89E-02	8.26E-02	Grain Loading
PM_{10}		1.58E-02	6.94E-02	
$PM_{2.5}$		8.49E-03	3.72E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263E			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	50.00	Stack diameter (ft.) or	0.43	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.85	80.00	19.00	26.27

Stack exhaust

Volume	500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-123-312-04	Control Device ID:	C263F

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.89E+01	8760	8.26E+01	Assumed control efficiency
PM_{10}		8.30E+00	8760	3.63E+01	
$PM_{2.5}$		3.39E+00	8760	1.49E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-123-312-04	Control Device ID:	C263F

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	75 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	8.26E+01	8.26E-02	99.90%
PM_{10}	3.63E+01	6.94E-02	99.90%
$PM_{2.5}$	1.49E+01	3.72E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-123-312-04	Control Device ID:	C263F

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-123-312-04	Control Device ID:	C263F

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.89E-02	8.26E-02	Grain Loading
PM_{10}		1.58E-02	6.94E-02	
$PM_{2.5}$		8.49E-03	3.72E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263F			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	50.00	Stack diameter (ft.) or	0.43	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.81	80.00	19.00	26.20

Stack exhaust

Volume	500 ACFM	Temperature	75 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-91-312-04	Control Device ID:	C263G

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		4.26E+01	8760	1.87E+02	Assumed control efficiency
PM_{10}		1.88E+01	8760	8.21E+01	
$PM_{2.5}$		7.67E+00	8760	3.36E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-91-312-04	Control Device ID:	C263G

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
1500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	1.87E+02	1.87E-01	99.90%
PM_{10}	8.21E+01	1.57E-01	99.90%
$PM_{2.5}$	3.36E+01	8.40E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-91-312-04	Control Device ID:	C263G

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-91-312-04	Control Device ID:	C263G

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		4.26E-02	1.87E-01	Grain Loading
PM_{10}		3.58E-02	1.57E-01	
$PM_{2.5}$		1.92E-02	8.40E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263G				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
263			100.00%		
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.74	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	42.60	-80.00	19.00	29.60

Stack exhaust

Volume	1500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-98-312-04	Control Device ID:	C263H

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.43E+01	8760	6.28E+01	Assumed control efficiency
PM_{10}		6.31E+00	8760	2.76E+01	
$PM_{2.5}$		2.58E+00	8760	1.13E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-98-312-04	Control Device ID:	C263H

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.28E+01	6.28E-02	99.90%
PM_{10}	2.76E+01	5.27E-02	99.90%
$PM_{2.5}$	1.13E+01	2.82E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-98-312-04	Control Device ID:	C263H

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-98-312-04	Control Device ID:	C263H

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.43E-02	6.28E-02	Grain Loading
PM_{10}		1.20E-02	5.27E-02	
$PM_{2.5}$		6.45E-03	2.82E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263H				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
263			100.00%		
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.43	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.69	80.00	19.00	26.15

Stack exhaust

Volume	500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-99-312-04	Control Device ID:	C263I

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.43E+01	8760	6.28E+01	Assumed control efficiency
PM_{10}		6.31E+00	8760	2.76E+01	
$PM_{2.5}$		2.58E+00	8760	1.13E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-99-312-04	Control Device ID:	C263I

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum	Maximum	

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.28E+01	6.28E-02	99.90%
PM_{10}	2.76E+01	5.27E-02	99.90%
$PM_{2.5}$	1.13E+01	2.82E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-99-312-04	Control Device ID:	C263I

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-99-312-04	Control Device ID:	C263I

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.43E-02	6.28E-02	Grain Loading
PM_{10}		1.20E-02	5.27E-02	
$PM_{2.5}$		6.45E-03	2.82E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263I				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
263			100.00%		
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.43	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.38	-80.00	19.00	28.99

Stack exhaust

Volume	500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-100-312-04	Control Device ID:	C263J

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.43E+01	8760	6.28E+01	Assumed control efficiency
PM_{10}		6.31E+00	8760	2.76E+01	
$PM_{2.5}$		2.58E+00	8760	1.13E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-100-312-04	Control Device ID:	C263J

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (°F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.28E+01	6.28E-02	99.90%
PM_{10}	2.76E+01	5.27E-02	99.90%
$PM_{2.5}$	1.13E+01	2.82E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-100-312-04	Control Device ID:	C263J

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-100-312-04	Control Device ID:	C263J

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.43E-02	6.28E-02	Grain Loading
PM_{10}		1.20E-02	5.27E-02	
$PM_{2.5}$		6.45E-03	2.82E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263J			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.43	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.64	80.00	19.00	26.05

Stack exhaust

Volume	500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section C - Air Cleaning Device

Baghouse Equipment Number or Stack Description:	511-101-312-04	Control Device ID:	C263K

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM		1.43E+01	8760	6.28E+01	Assumed control efficiency
PM_{10}		6.31E+00	8760	2.76E+01	
$PM_{2.5}$		2.58E+00	8760	1.13E+01	
SO_X					
CO					
NO_X					
VOC					
Others: (e.g., HAPs)	---	---	---	---	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No		Water injection rate	GPM
Radiation and convection cooling ☐ Yes ☐ No		Air dilution ☐ Yes ☐ No If yes,	CFM
Forced Draft ☐ Yes ☐ No		Water cooled duct work ☐ Yes ☐ No	
Other			
Inlet Volume	ACFM	Outlet Volume	ACFM
@°F % Moisture		@°F % Moisture	

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-101-312-04	Control Device ID:	C263K

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
TBD	TBD	

Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided (Describe in detail) ☐ Yes ☑ No

Dew point at maximum moisture	F	Design inlet volume	ACFM

Type of Fabric

Material			☐ Felted	☐ Membrane
Weight	oz/sq. yd	oz/sq. yd	☐ Woven	☐ Others: List:
Thickness			☐ Felted-Woven	

Fabric permeability (clean) @ 1/2" water-Δ P		CFM/sq. ft	
Filter dimensions	Length	Diameter/ Width	
Effective area per filter		Maximum operating temperature (^{o}F)	
Effective air to cloth ratio	Minimum		Maximum

Drawing of Fabric Filter
A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled			Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.
500 ACFM	@	248 F	TBD

Type of filter cleaning

☐ Manual Cleaning	☐ Bag Collapse	☐ Reverse Air Jets
☐ Mechanical Shakers	☐ Sonic Cleaning	☐ Other:
☐ Pneumatic Shakers	☐ Reverse Air Flow	

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated by

☐ Timer	Frequency if time actuated	
☐ Expected pressure drop range	in. of water	☐ Other Specify:

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
PM	6.28E+01	6.28E-02	99.90%
PM_{10}	2.76E+01	5.27E-02	99.90%
$PM_{2.5}$	1.13E+01	2.82E-02	99.90%

Section C - Air Cleaning Device (Continued)

Baghouse Equipment Number or Stack Description:	511-101-312-04	Control Device ID:	C263K

14. Costs

Indicate cost associated with air cleaning deice and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Particulate air cleaning devices are process equipment, for product/material recovery, that collect and reintroduce the product/material into the process.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

TBD

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

CEMEX will maintain baghouses and dust handling systems according to manufacturer's specifications. A sufficient quantity of replacement bags will be kept on site.

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	511-101-312-04	Control Device ID:	C263K

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.43E-02	6.28E-02	Grain Loading
PM_{10}		1.20E-02	5.27E-02	
$PM_{2.5}$		6.45E-03	2.82E-02	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S263K			
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
263			100.00%	
Stack height above grade (ft.)	15.00	Stack diameter (ft.) or	0.43	Weather Cap
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

280

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.60	80.00	19.00	26.00

Stack exhaust

Volume	500 ACFM	Temperature	248 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Emergency Diesel Engine

Manufacturer	Model No.	Number of Sources
Caterpillar	CAT C32-1250	1

Source Designation	Maximum Capacity	Rated Capacity
274	1000 kW	1000 kW

Type of Material Processed

NA

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	100

Seasonal variations (Months) From: NA **To:** NA

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number ULSD	67 GPH @ 60°F	33000 x 10^3 Gal	0.0015 % by wt		127500	Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

ULSD

Tank I.D. No.	Manufacturer	Date Installed
T274		

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

NA

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☑ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Conduct opacity monitoring per the applicable NSPS/MACT requirements, and/or follow applicable fugitive dust plan.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

No fugitive emissions are associated with this source.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

It is not anticipated that start up, shut down, process upsets, and/or disruptions will have any impact on emissions. The plant will not be operated unless the control systems are functioning as designed.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Emergency Engine	Control Device ID:	NA

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		1.12E-01	2.81E-02	Manufacturer Data
PM_{10}		1.12E-01	2.81E-02	
$PM_{2.5}$		1.12E-01	2.81E-02	
SO_X		1.41E-02	3.52E-03	
CO		2.17E+00	5.42E-01	
NO_X		2.77E+01	6.92E+00	
VOC		5.39E-02	1.35E-02	
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number	S274				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:		
274			100.00%		
Stack height above grade (ft.)	0.00	Stack diameter (ft.) or	0.67	Weather Cap	
Grade elevation (ft.)	850	Outlet duct area (sq.ft.)		☐ Yes ☑ No	

Distance of discharge to nearest property line (ft.). Locate on topographic map.

580

Does stack height meet Good Engineering Practice (GEP)?

Yes

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	43.73	80.00	19.00	30.60

Stack exhaust

Volume	2618.3363584 ACFM	Temperature	868.28 F	Moisture	Negligible%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Cooling Tower

Manufacturer	Model No.	Number of Sources
TBD	TBD	1
Source Designation	**Maximum Capacity**	**Rated Capacity**
CT	352 gpm	352 gpm

Type of Material Processed

Hot water

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	7	365	8760

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
NA	NA	NA	NA

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
NA	NA	NA	NA

Seasonal variations (Months) From: NA **To:** NA

If variations exist, describe them:

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content	
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Oil Number	GPH @ 60°F	x 10^3 Gal	% by wt			Btu/Gal. Lbs./Gal @ 60°F
Natural Gas	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Gas (other)	SCFH	x 10^6 Gal	grain/100 SCF			Btu/SCF
Coal	TPH	Tons	% by wt			Btu/lb
Other*						

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day):	
	Filling Rate (gal./min.):	
	Duration of fill (hr./fill):	

B. For Solids

Type	☐ Silo	☐ Storage Bin	☐ Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential" ☐ Yes ☐ No

If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Attachment 3

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Describe each proposed modification to an existing source.

This source consists of new equipment.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

Anticipated Milestones:	
i. Expected commencement date of construction/reconstruction/installation:	January 2021
ii. Expected completion date of construction/reconstruction/installation:	January 2022
iii. Anticipated date of start-up:	January 2022

Section F - Flue and Air Contaminant Emissions

Baghouse Equipment Number or Stack Description:	Cooling Tower	Control Device ID:	NA

1. Estimated Atmospheric Emissions*

Pollutant	Maximum Emission Rate			Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Tons/Year	
PM		2.64E-03	1.16E-02	
PM_{10}		2.18E-03	9.55E-03	
$PM_{2.5}$		9.45E-06	4.14E-05	
SO_X				
CO				
NO_X				
VOC				
Others: (e.g., HAPs)	----------	----------	----------	

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack Exhauster

Stack Designation/Number				
List Source(s) or source ID exhausted to this stack			% of flow exhausted to stack:	
Stack height above grade (ft.)		Stack diameter (ft.) or		Weather Cap
Grade elevation (ft.)		Outlet duct area (sq.ft.)		☐ Yes ☑ No

Distance of discharge to nearest property line (ft.). Locate on topographic map.

Does stack height meet Good Engineering Practice (GEP)?

If modeling (estimating) of ambient air quality impacts I needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack ** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40.00	52.00	44.60	80.00	19.00	31.31

Stack exhaust					
Volume	ACFM	Temperature	F	Moisture	%

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

Exhauster (attach fan curves)		in. of water		HP @		RPM

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.

Yes, some sources at the site are being modified. Emissions from the project are described in Sections 4 and 5 of the application document.

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards.

a. Prevention of Significant Deterioration permit (PSD), 40 CFR 52?	☑ Yes	☐ No
b. New Source Review (NSR), 25 Pa. Code Chapter 127, Subchapter E?	☑ Yes	☐ No
c. New Source Performance Standards (NSPS), 40 CFR Part 60? (If Yes, which subpart)	☑ Yes	☐ No
Subparts A, F, Y, OOO, and IIII		
d. National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61? If Yes, which subpart)	☐ Yes	☑ No
e. Maximum Achievable Control Technology (MACT) 40 CFR Part 63? (If Yes, which part)	☑ Yes	☐ No
Subparts A, LLL, and ZZZZ		

Attach a demonstration showing that the emissions from any new sources will be the minimum attainable through the use of best available technology (BAT).

See Section 5 of application document.

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last five (5) years for applicable PSD pollutant(s) if the facility is an existing major facility (PSD purposes)

There have been no emission increases or decreases within the past 5 years.

6.3 Compliance Review Form

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Fully and accurately provide the following information, as specified. Attach additional sheets as necessary.

Type of Compliance Review Form Submittal (check all that apply)

☐ Original Filing
☒ Amended Filing

Date of Last Compliance Review Form Filing: 08/01/2016

Type of Submittal

☒ New Plan Approval ☐ New Operating Permit ☐ Renewal of Operating Permit
☐ Extension of Plan Approval ☐ Change of Ownership ☐ Periodic Submission (@ 6 mos)
☐ Other: _____

SECTION A. GENERAL APPLICATION INFORMATION

Name of Applicant/Permittee/("applicant")
(non-corporations-attach documentation of legal name)
CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Address 2001 Portland Park
Wampum, PA 16157

Telephone 724-535-4311 **Taxpayer ID#** 26-3068146

Permit, Plan Approval or Application ID# Title V Permit No. 37-00013

Identify the form of management under which the applicant conducts its business (check appropriate box)

☐ Individual ☐ Syndicate ☐ Government Agency
☐ Municipality ☐ Municipal Authority ☐ Joint Venture
☐ Proprietorship ☐ Fictitious Name ☐ Association
☐ Public Corporation ☐ Partnership ☒ Other Type of Business, specify below:
☐ Private Corporation ☐ Limited Partnership Limited Liability Company

Describe below the type(s) of business activities performed.

The CEMEX Wampum Cement Plant currently receives cement products via rail. Products are unloaded and transferred to silos by a pneumatic pump system. Products are transferred from the silos and loaded into trucks for shipment at one (1) of three (3) truck loadout stations. Cement has not been manufactured at the facility since 2010. This Plan Approval application is for the authorization to resume cement manufacturing operations at the facility.

SECTION B. GENERAL INFORMATION REGARDING "APPLICANT"

If applicant is a corporation or a division or other unit of a corporation, provide the names, principal places of business, state of incorporation, and taxpayer ID numbers of all domestic and foreign parent corporations (including the ultimate parent corporation), and all domestic and foreign subsidiary corporations of the ultimate parent corporation with operations in Pennsylvania. Please include all corporate divisions or units, (whether incorporated or unincorporated) and privately held corporations. (A diagram of corporate relationships may be provided to illustrate corporate relationships.) Attach additional sheets as necessary.

Unit Name	Principal Places of Business	State of Incorporation	Taxpayer ID	Relationship to Applicant
CEMEX, Inc.	Houston, Texas	Louisiana	72-0296500	Parent

SECTION C. SPECIFIC INFORMATION REGARDING APPLICANT AND ITS "RELATED PARTIES"

Pennsylvania Facilities. List the name and location (mailing address, municipality, county), telephone number, and relationship to applicant (parent, subsidiary or general partner) of applicant and all Related Parties' places of business, and facilities in Pennsylvania. Attach additional sheets as necessary.

Unit Name	Street Address	County and Municipality	Telephone No.	Relationship to Applicant
CEMEX Wampum Cement Plant	2001 Portland Park Wampum, PA 16157	Lawrence County Wampum Borough	724-535-4311	Applicant
Kosmos Cement Company Pittsbugh Terminal	200-B Neville Road Pittsburgh, PA 15225	Allegheny County Neville Township	412-777-6047	Affiliate
CEMEX Wampum Quarry	201 Tony Ditko Road Wampum, PA 16157	Lawrence County Wayne Township Shenango Township	724-535-4311	Affiliate

Provide the names and business addresses of all general partners of the applicant and parent and subsidiary corporations, if any.

Name	Business Address
None	

List the names and business address of persons with overall management responsibility for the process being permitted (i.e. plant manager).

Name	Business Address
Mike F. Egan, Vice President	2001 Portland Park, Wampum, PA 16157

Plan Approvals or Operating Permits. List all plan approvals or operating permits issued by the Department or an approved local air pollution control agency under the APCA to the applicant or related parties that are currently in effect or have been in effect at any time 5 years prior to the date on which this form is notarized. This list shall include the plan approval and operating permit numbers, locations, issuance and expiration dates. Attach additional sheets as necessary.

Air Contamination Source	Plan Approval/ Operating Permit#	Location	Issuance Date	Expiration Date
CEMEX Wampum Cement Plant	Title V Permit No. 37-00013	Wampum, PA	March 13, 2017	February 28, 2022
Kosmos Cement Company Pittsbugh Terminal	ACHD Minor Source Operating Permit No. 0017	Pittsburgh, PA	January 24, 2017	January 23, 2022
Kosmos Cement Company Pittsbugh Terminal	ACHD Minor Source/Minor Modification Permit No. 0017-I010	Pittsburgh, PA	July 16, 2019	January 16, 2021

Compliance Background. (Note: Copies of specific documents, if applicable, must be made available to the Department upon its request.) List all documented conduct of violations or enforcement actions identified by the Department pursuant to the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. Attach additional sheets as necessary. See the definition of "documented conduct" for further clarification. Unless specifically directed by the Department, deviations which have been previously reported to the Department in writing, relating to monitoring and reporting, need not be reported.

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing or Corrected/Date	Dollar Amount Penalty
None						$
						$
						$
						$
						$
						$
						$
						$
						$
						$

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Incident Status: Litigation Existing/Continuing Or Corrected/Date
None				

<u>CONTINUING OBLIGATION</u>. Applicant is under a continuing obligation to update this form using the Compliance Review Supplemental Form if any additional deviations occur between the date of submission and Department action on the application.

VERIFICATION STATEMENT
Subject to the penalties of Title 18 Pa.C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I verify under penalty of law that I am authorized to make this verification on behalf of the Applicant/Permittee. I further verify that the information contained in this Compliance Review Form is true and complete to the best of my belief formed after reasonable inquiry. I further verify that reasonable procedures are in place to ensure that "documented conduct" and "deviations" as defined in 25 Pa Code Section 121.1 are identified and included in the information set forth in this Compliance Review Form.
Signature: [signature] Date: 1-15-20
Mike F. Egan
Name (Print or Type)
Vice President
Title

6.4 Addendum A – Source Applicable Requirements Addendum 1 – Method of Compliance Worksheets

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Entire Site (Site Level)	
25 Pa. Code §123.1	Certain fugitive emissions restriction: reasonable actions to prevent PM from becoming airborne shall be taken.	NA
25 Pa. Code §123.2	Fugitive PM emissions restriction: fugitive PM emissions shall not be visible at the point the emissions pass outside the person's property.	NA
25 Pa. Code §123.31	Malodorous air contaminant emissions restriction: malodors shall not be detectable outside the property of the person on whose land the source is being operated.	NA
25 Pa. Code §123.41	Visible emissions restriction: < 20% opacity for a period or periods aggregating more than three minutes in any 1 hour. Visible emissions restriction: < 60% opacity at any time. The limitations of §123.41 shall not apply to a visible emission when the presence of uncombined water is the only reason for failure of the emission to meet the limitations; when the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions; or when the emission results from sources specified in §123.1(a)(1) through (6).	NA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☒ **The entire site**

☐ **A group of sources, Group ID:**

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.1

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** NA
2. **Monitoring device location:** NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. **How will data be reported:** NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

NA

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

Reasonable actions will be taken to prevent PM from becoming airborne. Such actions include use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land; application of asphalt, oil, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which may give rise to airborne dusts; paving and maintenance of roadways; and prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☒ **The entire site**

☐ **A group of sources, Group ID:**

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.2

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Daily visual inspections of the areas surrounding the plant to detect the presence of fugitive PM emissions.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

A log of the daily visual inspections shall be maintained and shall be made available to the Department upon request. Any fugitive PM emissions that are detected by plant personnel shall be reported to the Shift Supervisor. The Shift Supervisor shall record the event on the inspection log. Appropriate corrective action shall be taken and noted in the inspection log.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

Reasonable actions will be taken to prevent PM from becoming airborne. Such actions include use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land; application of asphalt, oil, water, or suitable chemicals on dirt roads, material stockpiles, and other surfaces which may give rise to airborne dusts; paving and maintenance of roadways; and prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☒ **The entire site**

☐ **A group of sources, Group ID:**

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.31

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Daily inspections of the areas surrounding the plant to detect the presence of malodors.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

A log of the daily inspections shall be maintained and shall be made available to the Department upon request. Any malodors that are detected by plant personnel shall be reported to the Shift Supervisor. The Shift Supervisor shall record the event on the inspection log. Appropriate corrective action shall be taken and noted in the inspection log.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☒ **The entire site**

☐ **A group of sources, Group ID:**

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.41

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Trained and qualified observer and/or DEP-approved device.

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Daily visual inspections of the areas surrounding the plant to detect the presence of visible emissions.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

A log of the daily inspections shall be maintained and shall be made available to the Department upon request. Any visible emissions that are detected by plant personnel shall be reported to the Shift Supervisor. The Shift Supervisor shall record the event on the inspection log. Appropriate corrective action shall be taken and noted in the inspection log.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Kiln	
25 Pa. Code §123.13(b)(1) & (2)	Whichever is greater: PM emissions restriction: ≤ allowable emissions (pounds per hour) calculated by the formula in 25 Pa. Code §123.13(b)(2): $A = .76E^{0.42}$ where A = allowable emissions in pounds per hour; E = emission index = F X W pounds per hour; F = process factor in pounds per unit; and W = production or charging rate in units per hour. The factor F (150 pounds per ton (dry solids feed) for Portland cement manufacturing - Clinker production) shall be obtained from the table in 25 Pa. Code §123.13(b)(1). The units for F and W shall be compatible. OR PM emissions restriction: ≤ 0.02 grain per dry standard cubic foot.	NA
25 Pa. Code §123.21(b)	SOx emissions restriction (expressed as SO_2): ≤ 500 ppm, by volume, dry basis.	NA
25 Pa. Code §127.12(a)(5)	A new source subject to the Plan Approval requirements shall comply with BAT. NH_3 BAT emissions restriction: ≤ 65 ppm, by volume, dry basis.	NA
25 Pa. Code §127.205(1)	A new or modified facility subject to NNSR shall comply with LAER for NOx emissions. NOx LAER emissions restriction: ≤ 1.50 pounds per ton of clinker produced (30-operating day, rolling average).	NA
25 Pa. Code §127.205(1)	A new or modified facility subject to NNSR shall comply with LAER for VOC emissions. VOC LAER emissions restriction: ≤ 0.07/0.1 pound per ton of clinker produced (hourly/annual).	NA
25 Pa. Code §129.97(h)(3)(ii)	NOx RACT emissions restriction: ≤ 2.36 pounds per ton of clinker produced.	NA
25 Pa. Code §145.143(b)(2)(iii)(B)	Each year, the owner or operator of a Portland cement kiln shall determine the allowable emissions of NOx during the period of May 1 through September 30 by multiplying the tons of clinker produced by the Portland cement kiln for the period by 2.36 pounds of NOx per ton of clinker produced.	NA
40 CFR 60.62(a)(3)	1.5 pounds NOx per ton clinker, 30-operating day rolling average basis	N/A
40 CFR 60.62(a)(1)(ii)	0.02 pound PM per ton of clinker	N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Kiln	
40 CFR 60.62(a)(4)	0.4 pounds SO2 per ton of clinker, 30-operating day rolling average basis	N/A
40 CFR §63.1343, Table 1	PM (filterable): 0.02 lb/ton clinker. Calculated for a design that includes an inline coal mill, and a combined kiln and clinker cooler exhaust, see equations in 40 CFR §63.1343 (b), comingled sources	N/A
40 CFR §63.1343, Table 1	Dioxin/furan: if temperature at the inlet to the fabric filter is < 400F, limit is 0.04 ng/dscm; otherwise limit if 0.02 ng/dscm	N/A
40 CFR §63.1343, Table 1	Mercury: 21 lb/Mm tons clinker, 30 operating day rolling average	N/A
40 CFR §63.1343, Table 1	Total hydrocarbons: 24 ppmvd at 7% oxygen (or 12 ppmvd total organic HAP), 30 operating day rolling average	N/A
40 CFR §63.1343, Table 1	HCl: 3 ppmvd at 7% oxygen, 30 operating day rolling average	N/A

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.13(b)(1) & (2). See Worksheet for 40 CFR 60, Subpart F and 40 CFR 63, Subpart LLL

Compliance Method based upon: ☐ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.):

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. How will data be reported:

Section 3: Testing

1. **Reference Test Method Description:** _____
2. **Reference Test Method Citation:** _____

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

_____

_____

_____

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

_____

_____

_____

1. **Reporting start date:** _____

Section 6: Work Practice Standard

Describe any work practice standards:

_____

_____

_____

_____

_____

_____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.21(b)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS.

2. Monitoring device location: Within stack.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Continuous monitoring of the concentration by volume of SO_2 emissions.

3. How will data be reported: As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 3: Testing

1. Reference Test Method Description:	Determination of SO_2 emissions from stationary sources.
2. Reference Test Method Citation:	USEPA Methods 6, 6A, or 6C.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

The applicable recordkeeping requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

The applicable reporting requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

1. Reporting start date:	As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 6: Work Practice Standard

Describe any work practice standards:

The SOx control system will be operated at all times when the source is operating. The source, SO_2 CEMS, and SOx control system will be operated in accordance with the manufacturer’s specifications and in a manner consistent with good air pollution control practices.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §127.12(a)(5)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

SNCR system manufacturer's guarantee and specifications used to demonstrate that the NH_3 emissions (NH_3 slip) comply with the NH_3 BAT emission restriction.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

The SNCR system will be operated in accordance with the manufacturer's specifications and in a manner consistent with good air pollution control practices.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §127.205(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS.

2. Monitoring device location: Within stack.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Continuous monitoring of the concentration by volume of NOx emissions.

3. How will data be reported: As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 3: Testing

1. Reference Test Method Description:	Determination of NOx emissions from stationary sources.
2. Reference Test Method Citation:	USEPA Methods 7, 7A, 7C, 7D, or 7E.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Records of clinker production sufficient to determine compliance with the NOx LAER emission limit. The applicable recordkeeping requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

The applicable reporting requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

1. Reporting start date:	As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §60.65.

Section 6: Work Practice Standard

Describe any work practice standards:

The NOx control systems will be operated at all times when the source is operating. The source, NOx CEMS, and NOx control systems will be operated in accordance with the manufacturer’s specifications and in a manner consistent with good air pollution control practices.

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §127.205(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS.

2. Monitoring device location: Within stack.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Continuous monitoring of the concentration by volume of THC emissions.

3. How will data be reported: As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §63.1354.

Section 3: Testing

1. Reference Test Method Description:	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer.
2. Reference Test Method Citation:	USEPA Method 25A.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Records of clinker production sufficient to determine compliance with the VOC LAER emission limit. The applicable recordkeeping requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §63.1355.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

The applicable reporting requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §63.1354.

1. Reporting start date:	As per the applicable requirements of 25 Pa. Code Chapter 139, the Department's Continuous Source Monitoring Manual, and 40 CFR §63.1354.

Section 6: Work Practice Standard

Describe any work practice standards:

The source and the THC CEMS will be operated in accordance with the manufacturer’s specifications and in a manner consistent with good air pollution control practices.

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §129.97(h)(3)(ii)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS.

2. Monitoring device location: Within stack.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Continuous monitoring of the concentration by volume of NOx emissions.

3. How will data be reported: Per 25 Pa. Code §129.100(a)(1), in accordance with the requirements of Chapter 139, Subchapter C.

Section 3: Testing

1. Reference Test Method Description:	Determination of NOx emissions from stationary sources.
2. Reference Test Method Citation:	USEPA Methods 7, 7A, 7C, 7D, or 7E.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Per 25 Pa. Code §129.100(a)(2), monitor clinker production rates in accordance with 40 CFR §63.1350(d). Per 25 Pa. Code §129.100(d)(1) & (2), records must include sufficient data and calculations to demonstrate that the requirements of §§129.96 - 129.99 are met; and data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement. Per 25 Pa. Code §129.100(h)(1) through (4), the records will include the total hours of operation; the type and quantity of fuel used; the quantity of clinker produced; and the date, time, and duration of a start-up, shutdown, or malfunction of the kiln or emissions monitoring system.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Per 25 Pa. Code §129.100(i), records shall be made available to the Department upon receipt of a written request from the Department.

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

The NOx control systems will be operated at all times when the source is operating. The source, NOx CEMS, and NOx control systems will be operated in accordance with the manufacturer’s specifications and in a manner consistent with good air pollution control practices.

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §145.143(b)(2)(iii)(B)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS, per 25 Pa. Code §145.144(a)(1).

2. Monitoring device location: Within stack.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Continuous monitoring of the concentration by volume of NOx emissions.

3. How will data be reported: Per 25 Pa. Code §145.144(a)(2), in accordance with the requirements of Chapter 139, Subchapter C.

Section 3: Testing

1. Reference Test Method Description:	Determination of NOx emissions from stationary sources.
2. Reference Test Method Citation:	USEPA Methods 7, 7A, 7C, 7D, or 7E.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Per 25 Pa. Code §145.146(a), maintain an operating log including the following on a monthly basis: the total hours of operation; the type and quantity of fuel used; and the quantity of clinker produced. Per 25 Pa. Code §145.146(b), records maintained must include the following: source tests and operating parameters established during the initial source test and subsequent testing; the date, time, and duration of any start-up, shutdown, or malfunction of the kiln or emissions monitoring system; and the date and type of maintenance, repairs, or replacements performed on the kiln, control devices, and emission monitoring systems. Per 25 Pa. Code §145.146(c), records must be maintained onsite for 5 years and be made available to the Department upon request.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Per 25 Pa. Code §145.145(a), submit a written report to the Department which includes the following: the difference between the actual NOx emissions from the kiln during the interval from May 1 through September 30 and the allowable emissions for that period; and the calculations used to determine the difference in emissions, including the CEMS data and clinker production data used to show compliance with the allowable emission limits in §145.143(b)(2). The clinker production data must consist of the quantity of clinker, in tons, produced per day for each kiln.

1. Reporting start date:	Annually, by October 31 of each year.

Section 6: Work Practice Standard

Describe any work practice standards:

NA

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.63(a)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Weigh scale system to measure and record weight rates of clinker produced or kiln feed.

2. Monitoring device location: N/A

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hourly clinker production or hourly kiln feed in tons of mass per hour. If using kiln feed weigh scale system, calculate the hourly clinker production rate using kiln-specific feed-to-clinker ratio based on reconciled clinker production rates. Update ratio monthly.

3. How will data be reported: N/A

Section 3: Testing

1. Reference Test Method Description:	N/A
2. Reference Test Method Citation:	N/A

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production rates or feed rates before initial use. During each quarter, determine, record, and maintain record of the ongoing accuracy of the system. If measuring clinker production directly, record daily production rates. If measuring kiln feed rates and calculating clinker production, record daily kiln feed and clinker production rates.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:	

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(3), 40 CFR 60.63(d)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** CEM
2. **Monitoring device location:** Stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Measure NOx concentration, by volume, continuously at all times the process is operating and convert to 1-hr averages of emissions data per 40 CFR 60.63(g)(3), except during periods of monitoring system malfunctions and related repairs and required quality assurance/quality control activities, per 40 CFR 60.63 (g)(1).

3. **How will data be reported:** (See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Performance evaluation of NOx CEMS monitor, per 40 CFR 60.13(c)
2. Reference Test Method Citation:	40 CFR 60, Appendix B, Performance Specification 2

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii).

Calculate and record rolling 30 kiln operating day average NOx emission rate daily per 40 CFR 60.64(c)(1).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Submit semiannual reports of excess emissions with content per 40 CFR 60.7(c).

Submit semiannual reports of malfunction information required to be recorded per 40 CFR 60.7(b). Include frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in venting of emissions.

Submit RATA data for CEMS to EPA's CDX using CEDRI, per 40 CFR 60.64(d)(2), within 60 days after the date of completing the CEMS performance evaluation.

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
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Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(3), 40 CFR 60.63(h)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Continuous monitor
2. **Monitoring device location:** Stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Stack gas flow rate

2. **How will data be reported:** N/A

Section 3: Testing

1. Reference Test Method Description:	Relative accuracy test
2. Reference Test Method Citation:	40 CFR 60, Appendix B, Performance Specification 6, Section 8.2

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Stack gas flow rate per 40 CFR 60.63(h)(4), (h)(5) & (h)(6).

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii)

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(1)(ii), 40 CFR 60.63(a)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Weigh scale system to measure and record weight rates of clinker produced or kiln feed.

2. **Monitoring device location:** N/A

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hourly clinker production or hourly kiln feed in tons of mass per hour. If using kiln feed weigh scale system, calculate the hourly clinker production rate using kiln-specific feed-to-clinker ratio based on reconciled clinker production rates. Update ratio monthly.

3. **How will data be reported:** N/A

Section 3: Testing

1. Reference Test Method Description:	N/A
2. Reference Test Method Citation:	N/A

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production rates or feed rates before initial use. During each quarter, determine, record, and maintain record of the ongoing accuracy of the system. If measuring clinker production directly, record daily production rates. If measuring kiln feed rates and calculating clinker production, record daily kiln feed and clinker production rates.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(1)(ii), 40 CFR 60.63(c)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): PM Continuous Performance Monitoring System (CPMS) with stack test

2. Monitoring device location: At stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

PM emission level via stack test (initially and at least annually thereafter) and 4-20 milliamp or digital signal output during the initial stack test and on a continuous basis thereafter. For each PM stack test, conduct at least three separate runs each while the mill is on and the mill is off under the conditions that exist when the source is operating at a level reasonably expected to occur.

3. How will data be reported: (See *Section 5: Reporting*)

Section 3: Testing

3. Reference Test Method Description: Determination of Particulate Matter Emissions

4. Reference Test Method Citation: 40 CFR 60, Appendix A, Method 5 or Method 5I

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

PM CMPS parameter data measured continuously at all times the process is operating, except during periods of monitoring system malfunction and related repairs and required quality assurance/quality control activities, per 40 CFR 60.63(g)(1). Data must be converted to 1-hr averages of emissions per 40 CFR 60.63(g)(3). Use all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate arithmetic average operating parameter in milliamps or the digital equivalent on a 30 operating day rolling average basis, updated at the end of each new kiln operating day.

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii)

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Submit semiannual reports of excess emissions with content per 40 CFR 60.7(c).

Submit semiannual reports of malfunction information required to be recorded per 40 CFR 60.7(b). Include frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in venting of emissions.

2. Reporting start date: TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(1)(ii), 40 CFR 60.64(b)(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☒ **Testing** ☒ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): N/A

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. How will data be reported:

Section 3: Testing

1. Reference Test Method Description:	Determination of Particulate Matter Emissions
2. Reference Test Method Citation:	40 CFR 60, Appendix A, Method 5 or Method 5I

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

N/A

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Submit results of stack test within 60 days of the test completion date to EPA's WebFIRE database by using CEDRI per 40 CFR 60.64(d)(1).

For PM test reports used to set PM CPMS operating limit, the electronic submission of report must include technical information on PM CPMS instrument as outlined in 40 CFR 60.64(d)(3).

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(1)(ii), 40 CFR 60.63(h)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Continuous monitor

2. Monitoring device location: Stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Stack gas flow rate

3. How will data be reported: N/A

Section 3: Testing

1. Reference Test Method Description:	Relative accuracy test
2. Reference Test Method Citation:	40 CFR 60, Appendix B, Performance Specification 6, Section 8.2

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Stack gas flow rate per 40 CFR 60.63(h)(4), (h)(5) & (h)(6).

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:	

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(4), 40 CFR 60.63(a)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Weigh scale system to measure and record weight rates of clinker produced or kiln feed.

2. Monitoring device location: N/A

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hourly clinker production or hourly kiln feed in tons of mass per hour. If using kiln feed weigh scale system, calculate the hourly clinker production rate using kiln-specific feed-to-clinker ratio based on reconciled clinker production rates. Update ratio monthly.

3. How will data be reported: N/A

Section 3: Testing

1. Reference Test Method Description: N/A

2. Reference Test Method Citation: N/A

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production rates or feed rates before initial use. During each quarter, determine, record, and maintain record of the ongoing accuracy of the system. If measuring clinker production directly, record daily production rates. If measuring kiln feed rates and calculating clinker production, record daily kiln feed and clinker production rates.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date: N/A

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(4), 40 CFR 60.63(e)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): CEMS

2. Monitoring device location: Stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Meaure SO_2 concentration, by volume, continuously at all times the process is operating and convert to 1-hr aveages of emissions data per 40 CFR 60.63(g)(3), except during periods of monitoring system malfunction and related repairs and required quality assurance/quality control activities, per 40 CFR 60.63(g)(1).

3. How will data be reported:	(See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Performance evaluation of SO_2 CEMS monitor, per 40 CFR 60.13(c)
2. Reference Test Method Citation:	40 CFR 60, Appendix B, Performance Specification 2

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii).

Calculate and record rolling 30 kiln operating day average SO2 emission rate daily per 40 CFR 60.64(c)(1).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

Submit semiannual reports of excess emissions with content per 40 CFR 60.7(c).

Submit semiannual reports of malfunction information required to be recorded per 40 CFR 60.7(b). Include frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in venting of emissions.

Submit RATA data for CEMS to EPA's CDX using CEDRI, per 40 CFR 60.64(d)(2), within 60 days after the date of completing the CEMS performance evaluation.

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.62(a)(4), 40 CFR 60.63(h)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Continuous monitor

2. Monitoring device location: Stack

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Stack gas flow rate

3. How will data be reported:

Section 3: Testing

1. Reference Test Method Description:	Relative accuracy test
2. Reference Test Method Citation:	40 CFR 60, Appendix B, Performance Specification 6, Section 8.2

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Stack gas flow rate per 40 CFR 60.63(h)(4), (h)(5) & (h)(6).

Develop (and submit to permitting authority for approval upon request) a site-specific monitoring plan containing the elements listed in 40 CFR 60.63(i)(1)(i) through (iii) and (i)(2)(i) through (iii).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1, PM

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Weigh scale system to measure and record weight rates of clinker produced or kiln feed.; PM continuous parametric monitoring system (PM CPMS)

2. Monitoring device location: Kiln/clinker cooler stack for PM CPMS

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hourly clinker production or hourly kiln feed in tons of mass per hour. For PM CPMS, a 4-20 milliamp or digital signal output and the establishment of its relationahip to manual reference method measurements

3. How will data be reported: Units of milliamps or the monitors digital equivalent

Section 3: Testing

1. Reference Test Method Description:	Method 5 or 5I of Appendix A-3 of Part 60
2. Reference Test Method Citation:	40 CFR §63.1349(b)(1)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1 (D/F)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Continuous monitoring system for temperature of exhaust gases

2. **Monitoring device location:** Exhaust gases from the kiln per 40 §63.1350(g)

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Temperature

3. **How will data be reported:** Degrees F

Section 3: Testing

1. Reference Test Method Description:	Method 23 of Appendix A-7 of Part 60
2. Reference Test Method Citation:	40 §63.1349(b)(3)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355 including D/F temperature CMS

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1 (Mercury)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Use of Hg CEMS or sorbent trap, 30 day rolling average (63.1350(h) or (k) and clinker production (63.1350(d))

2. Monitoring device location: Exhaust gases from the kiln per 40 §63.1350(g)

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hg

3. How will data be reported: Lb/MM Tons

Section 3: Testing

1. Reference Test Method Description:	Performance Specification 12A
2. Reference Test Method Citation:	40 §63.1349(b)(5)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1 (THC)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Use of a THC monitor per 63.1350(i)
2. **Monitoring device location:** Exhaust gases from the kiln per 40 §63.1350(i)

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

THC

3. **How will data be reported:** ppmvd at 7% oxygen

Section 3: Testing

1. Reference Test Method Description:	Method 25A, Appendix A of Part 60
2. Reference Test Method Citation:	40 §63.1349(b)(4)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Kiln

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1 (HCl)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Use of a SO_2 monitor per §63.1350(l) and §60.63(e)-(f)
2. **Monitoring device location:** Exhaust gases from the kiln per §60.63(e)-(f)

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

SO2

3. **How will data be reported:** ppmvd at 7% oxygen

Section 3: Testing

1. Reference Test Method Description:	Method 321, Appendix A of Part 63
2. Reference Test Method Citation:	40 §63.1349(b)(6)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Clinker Cooler	
25 Pa. Code §123.13(b)(1) & (2)	Whichever is greater: PM emissions restriction: ≤ allowable emissions (pounds per hour) calculated by the formula in 25 Pa. Code §123.13(b)(2): $A = .76E^{0.42}$ where A = allowable emissions in pounds per hour; E = emission index = F X W pounds per hour; F = process factor in pounds per unit; and W = production or charging rate in units per hour. The factor F (50 pounds per ton (product) for Portland cement manufacturing - Clinker cooling) shall be obtained from the table in 25 Pa. Code §123.13(b)(1). The units for F and W shall be compatible. OR PM emissions restriction: ≤ 0.02 grain per dry standard cubic foot.	NA
40 CFR §63.1343, Table 1	PM (filterable): 0.02 lb/ton clinker. Calculated for a design that includes an inline coal mill, and a combined kiln and clinker cooler exhaust, see equations in 40 CFR §63.1343 (b), comingled sources	N/A

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Clinker Cooler

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.13(b)(1) & (2). See Worksheet for 40 CFR 60, Subpart F and 40 CFR 63, Subpart LLL

Compliance Method based upon: ☐ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.):

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. How will data be reported:

Section 3: Testing

1. **Reference Test Method Description:** _____

2. **Reference Test Method Citation:** _____

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

. _____

_____

_____

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

_____

_____

_____

1. **Reporting start date:** _____

Section 6: Work Practice Standard

Describe any work practice standards:

_____

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Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Clinker Cooler

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1, PM

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Weigh scale system to measure and record weight rates of clinker produced or kiln feed.; PM continuous parametric monitoring system (PM CPMS)

2. Monitoring device location: Kiln/clinker cooler stack for PM CPMS

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hourly clinker production or hourly kiln feed in tons of mass per hour. For PM CPMS, a 4-20 milliamp or digital signal output and the establishment of its relationahip to manual reference method measurements

3. How will data be reported: Units of milliamps or the monitors digital equivalent

Section 3: Testing

1. Reference Test Method Description:	Method 5 or 5I of Appendix A-3 of Part 60
2. Reference Test Method Citation:	40 CFR §63.1349(b)(1)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Limestone Unloading	
40 CFR 60.672(b) (Table 3 to Subpart OOO of Part 60)	Raw material unloading for limestone: Opacity limit of 12%.	N/A

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Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Raw material unloading

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.672(a) and (b), 40 CFR 60.674(b) & (c); 40 CFR 60.675(c)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Water supression: Visual inspection.

2. Monitoring device location: Wet suppression: At location of water spray nozzles.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Wet Suppression: Monthly visual inpections of water flow to discharge spray nozzles.

3. How will data be reported: (See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Visual Determination of Opacity of Emissions
2. Reference Test Method Citation:	40 CFR 60, Appendix A, Method 9, using procedures in 40 CFR 60.11 and 40 CFR 60.675(c)

Conduct opacity performance tests according to requirements in 40 CFR 60.8.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

For wet suppression systems, keep logbook of water spray nozzles inspections and record date of each inspection and any corrective actions taken.

General requirements outlined in 40 CFR 60.7, 60.8, and 60.11, as applicable.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

General requirements outlined in 40 CFR 60.7, 60.8, 60.11, and 60.19, as applicable.

Submit written reports of all performance test results conducted to demonstrate compliance with standards under 40 CFR 60.672, including reports of opacity observations made using Method 9 to demonstrate compliance, per 40 CFR 60.676(f).

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Coal Mill, Storage and Handling	
25 Pa. Code §123.13(c1)(1)(i)	PM emissions restriction: ≤ 0.04 grain per dry standard cubic foot, when the effluent gas volume is less than 150,000 dry standard cubic feet per minute.	N/A
25 Pa. Code §123.1(a)(5)	Coal Pile: Fugitive emissions restriction for stockpiling of materials: reasonable actions to prevent PM from becoming airborne shall be taken.	N/A
25 Pa. Code §123.2	Coal Pile: Fugitive PM emissions restriction for stockpiling of materials: fugitive PM emissions shall not be visible at the point the emissions pass outside the person's property.	N/A
40 CFR 60.254(b)(1)	Coal mill: Opacity must not be equal or greater than 10%.	N/A
40 CFR 60.254(b)(2)	Coal mill: For mechanical vents, PM emissions must not exceed 0.010 gr/dscf (0.023 g/dscm).	N/A
40 CFR 60.254(c)	Open coal storage piles: prepare and operate in accordance with a fugitive dust emissions control plan	N/A
40 CFR 60.254(b)(1)	Coal truck unloading: Opacity must not be equal or greater than 10% from the coal pile	N/A
40 CFR 60.254(b)(1)	Coal unloading and storage for coal storage: Opacity must not be equal or greater than 10% from unloading for coal storage	N/A
40 CFR 60.254(b)(2)	Coal unloading and storage: For mechanical vents, PM emissions must not exceed 0.010 gr/dscf (0.023 g/dscm)	N/A

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Addendum 1
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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Mill

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.13(c)(1)(i)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Magnehelic gauge (or equivalent).

2. Monitoring device location: Magnehelic gauge (or equivalent) located on fabric collector (baghouse).

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Pressure drop across control device continuously measured.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Supporting information and calculations used to demonstrate that the PM emissions comply with the PM emission restriction. Daily records of pressure drop readings recorded at least once per operating day.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

A sufficient quantity of spare bags for the control device will be kept on hand in order to be able to immediately replace any bags requiring replacement due to deterioration resulting from routine operation of the source. The control device will be operated at all times when the source is operating. The source and control device will be operated in accordance with the manufacturer's specifications and in a manner consistent with good air pollution control practices.

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Pile

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.1(a)(5)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

NA

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

Reasonable actions will be taken to prevent PM from becoming airborne. Such actions include application of asphalt, oil, water, or suitable chemicals on material stockpiles.

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Pile

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.2

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Daily visual inspections of the areas surrounding the plant to detect the presence of fugitive PM emissions.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

A log of the daily visual inspections shall be maintained and shall be made available to the Department upon request. Any fugitive PM emissions that are detected by plant personnel shall be reported to the Shift Supervisor. The Shift Supervisor shall record the event on the inspection log. Appropriate corrective action shall be taken and noted in the inspection log.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

Reasonable actions will be taken to prevent PM from becoming airborne. Such actions include application of asphalt, oil, water, or suitable chemicals on material stockpiles.

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

- ☐ **The entire site**
- ☐ **A group of sources, Group ID:**
- ☒ **A single source, Unit ID:** Coal Mill
- ☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.254(b)(1), 40 CFR 60.255(b)(2)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

- ☒ **Monitoring**
- ☒ **Testing**
- ☒ **Reporting**
- ☒ **Record Keeping**
- ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Option to conduct human visual observations (EPA Method 22; EPA Method 9, as applicable) (40 CFR 60.255(f)).
2. **Monitoring device location:** For human visual observations, at the location of each affected source.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

For human visual observations: daily 15-second observation period for coal preparation and processing plant; monthly visual observation for all process and control equipment (see 40 CFR 63.255(f)(1) for more detail on frequency/duration).

3. **How will data be reported:** (See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Visual Determination of Opacity of Emissions
2. Reference Test Method Citation:	40 CFR 60, Appendix A, Method 9, with procedures in 40 CFR 60.11

Conduct all performance tests according to requirements in 40 CFR 60.8 using the procedures in 40 CFR 60.257(b)(1) through (b)(8), as applicable.
Conduct initial performance test and subsequent tests per 40 CFR 60.255(b)(2)(i) through (b)(2)(iii). Method 9 tests must be 1 hour – ten 6-minute averages (40 CFR 60.257(a)(1)(i)) – or per 40 CFR 60.257(a)(1)(ii). Other visible emissions observer requirements and options are outlined in 40 CFR 60.257(a)(2) and (a)(3).
Alternatively, can comply with requirements in 40 CFR 60.255(f) – See Section 2 above.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

General requirements outlined in 40 CFR 60.7, 60.8, and 60.11.

Maintain on-site logbook with elements outlined 40 CFR 60.258(a)(1) through (a)(5).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

General requirements outlined in 40 CFR 60.7, 60.8, 60.11, and 60.19.

Consistent with 40 CFR 60.7, submit semi-annually periods of excess emissions per 40 CFR 60.258(b)(3).

Consistent with 40 CFR 60.8, submit performance test results to PA DEP and EPA per 40 CFR 60.258(c) & (d).

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Pile

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.254(c)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): N/A

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. How will data be reported:

Section 3: Testing

1. Reference Test Method Description: N/A

2. Reference Test Method Citation:

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Maintain on-site logbook with element outlined 40 CFR 60.258(a)(6).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

N/A

1. Reporting start date:

Section 6: Work Practice Standard

Describe any work practice standards:

Develop and implement a fugitive coal dust emissions control plan that identifies and describes the control measures to be used to minimize fugitive coal dust emissions from each open storage pile, per 40 CFR 60.254(c). PA DEP can be petitioned to approve, for inclusion in the plan, alternative control measures.

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Truck Unloading

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 254(b)(1), 40 CFR 60.255(h),

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Human visual observations (40 CFR 60.255(h)(2))
2. **Monitoring device location:** At the locations of all process and control equipment

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Monthly human visual observations

3. **How will data be reported:** (See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Visual Determination of Opacity of Emissions
2. Reference Test Method Citation:	40 CFR 60, Appendix A, Method 9

For each affected coal truck dump operation, conduct initial performance test and subsequent test every 5 calendar years, per 40 CFR 60.255(h)(1)(i) and (h)(1)(ii).

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

General requirements outlined in 40 CFR 60.7, 60.8, and 60.11, as applicable.

Maintain on-site logbook with elements outlined 40 CFR 60.258(a)(1) through (a)(5).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

General requirements outlined in 40 CFR 60.7, 60.8, 60.11, and 60.19, as applicable.

Consistent with 40 CFR 60.7, submit semi-annually periods of excess emissions per 40 CFR 60.258(b)(3).

Consistent with 40 CFR 60.8, submit performance test results to PA DEP and EPA per 40 CFR 60.258(c) & (d).

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Coal Truck Unloading

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 254(b)(1), 40 CFR 60.255(h),

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** Human visual observations (40 CFR 60.255(h)(2))
2. **Monitoring device location:** At the locations of all process and control equipment

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Monthly human visual observations

3. **How will data be reported:** (See *Section 5: Reporting*)

Section 3: Testing

1. Reference Test Method Description:	Visual Determination of Opacity of Emissions
2. Reference Test Method Citation:	40 CFR 60, Appendix A, Method 9

For each affected coal truck dump operation, conduct initial performance test and subsequent test every 5 calendar years, per 40 CFR 60.255(h)(1)(i) and (h)(1)(ii).

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

General requirements outlined in 40 CFR 60.7, 60.8, and 60.11, as applicable.

Maintain on-site logbook with elements outlined 40 CFR 60.258(a)(1) through (a)(5).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

General requirements outlined in 40 CFR 60.7, 60.8, 60.11, and 60.19, as applicable.

Consistent with 40 CFR 60.7, submit semi-annually periods of excess emissions per 40 CFR 60.258(b)(3).

Consistent with 40 CFR 60.8, submit performance test results to PA DEP and EPA per 40 CFR 60.258(c) & (d).

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

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Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

- ☐ **The entire site**
- ☒ **A group of sources, Group ID:** Coal Unloading and Storage
- ☐ **A single source, Unit ID:**
- ☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR 60.254(b)(2), 40 CFR 60.255(b)(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

- ☐ **Monitoring**
- ☒ **Testing**
- ☒ **Reporting**
- ☒ **Record Keeping**
- ☐ **Work Practice Standard**

Section 2: Monitoring

1. **Monitoring device type (stack test, CEM, etc.):** N/A
2. **Monitoring device location:**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. **How will data be reported:**

Section 3: Testing

1. **Reference Test Method Description:** Determination of Particulate Matter Emissions
2. **Reference Test Method Citation:** 40 CFR 60, Appendix A, Method 5, 5B, 5D, or 17

Conduct all performance tests according to requirements in 40 CFR 60.8 and using the procedures in 40 CFR 60.257(b)(1) through (b)(8), as applicable.
Conduct initial and performance test and subsequent tests per 40 CFR 60.255(b)(1)(i) through (b)(1)(iii). Per 40 CFR 60.255(d), affected facilities using a control device with a design controlled potential PM emission rate of 1.1 tpy or less are exempt from 40 CFR 60.255(b)(1)(i) and (b)(1)(ii) if conditions of 40 CFR 60.255(d)(1) through (d)(3) are met.

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

General requirements outlined in 40 CFR 60.7, 60.8, and 60.11.

Maintain on-site logbook with elements outlined 40 CFR 60.258(a)(1) and (a)(3) through (a)(5).

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

General requirements outlined in 40 CFR 60.7, 60.8, 60.11, and 60.19.

Consistent with 40 CFR 60.8, submit performance test results to PA DEP and EPA per 40 CFR 60.258(c) & (d).

1. Reporting start date: TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Raw Mill and Finish Mills	
25 Pa. Code §123.13(c)(1)(i)	PM emissions restriction: ≤ 0.04 grain per dry standard cubic foot, when the effluent gas volume is less than 150,000 dry standard cubic feet per minute.	NA
40 CFR §63.1343, Table 1	10% opacity	NA

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☐ **A group of sources, Group ID:**

☒ **A single source, Unit ID:** Raw Mill and Finish Mills

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.13(c)(1)(i) See Method of Compliance Worksheet for 40 CFR 63, Subpart LLL

Compliance Method based upon: ☐ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☐ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.):

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

3. How will data be reported:

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Raw Mill and Finish Mill

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1343, Table 1 (opacity)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Visual, Method 22, Monitoring plan under 40 §63.1350(p)

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Opacity

3. How will data be reported:

Section 3: Testing

1. Reference Test Method Description:	Method 9 Appendix A-4 of Part 60
2. Reference Test Method Citation:	40 §63.1349(b)(2)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

*R*eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
Sources (besides Kiln and Clinker cooler) subject to NSPS, Subpart F or MACT, Subpart LLL		
40 §63.1345	Opacity must not be equal to or greater than 10%	N/A
40 §60.62(c)	Opacity must not be equal to or greater than 10%	N/A

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SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id:	26-3068146	**Firm Name:**	CEMEX Construction Materials Atlantic, LLC
Plant Code:	01	**Plant Name:**	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** NSPS Subpart F and MACT Subpart LLL sources

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 40 CFR §63.1345 and 40 CFR §60.62(c)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☒ **Testing** ☒ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Per 63.1350(f), conduct monthly visible emissions test using Method 22 of each affected source using Method 22 monthly and in accordance with required monitoring plan.

2. Monitoring device location:

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Opacity

3. How will data be reported: Visible emissions

Section 3: Testing

1. Reference Test Method Description:	Method 9 (Appendix A-4 of Part 60) performance test for 3 hr, except for specific test results. Use the maximum 6-minute average opacity exhibitied during performance test to determine compliance
2. Reference Test Method Citation:	§63.1349(b)(2)

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Recordkeeping per Subpart A, and as detailed in 63.1355

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

*R*eporting per Subpart A , and as detailed in 63.1354. (Table 1 of 40 §63.1354 details the Subpart A provisions that apply).

Semi-annual reports via CEDRI

1. Reporting start date:	TBD

Section 6: Work Practice Standard

Describe any work practice standards:

N/A

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.
Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used
	Electric Generators	
25 Pa. Code §123.13(c)(1)(i)	PM emissions restriction: ≤ 0.04 grain per dry standard cubic foot, when the effluent gas volume is less than 150,000 dry standard cubic feet per minute.	NA
25 Pa. Code §123.21(b)	SOx emissions restriction (expressed as SO_2): ≤ 500 ppm, by volume, dry basis.	NA
25 Pa. Code §127.205(1)	A new or modified facility subject to NNSR shall comply with LAER for NOx emissions.	NA
25 Pa. Code §127.205(1)	A new or modified facility subject to NNSR shall comply with LAER for VOC emissions.	NA
25 Pa. Code §129.97(c)(8)	An emergency standby engine operating less than 500 hours in a 12-month rolling period which is located at a major NOx emitting facility or major VOC emitting facility subject to 25 Pa. Code §129.96 shall install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices.	NA

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Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Electric Generators

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.13(c)(1)(i)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Supporting information and calculations used to demonstrate that the PM emissions comply with the PM emission restriction.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

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Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Electric Generators

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §123.21(b)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description: NA

2. Reference Test Method Citation: NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Supporting information and calculations used to demonstrate that the SOx emissions comply with the SOx emission restriction.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date: NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

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Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Electric Generators

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §127.205(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Manufacturer's certified emissions data used to demonstrate that the NOx emissions comply with the NOx LAER emission restriction.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

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Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Electric Generators

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §127.205(1)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☐ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☐ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): NA

2. Monitoring device location: NA

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

NA

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Manufacturer's certified emissions data used to demonstrate that the VOC emissions comply with the VOC LAER emission restriction.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

NA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Addendum 1
Method Of Compliance Worksheet

SECTION 1. APPLICABLE REQUIREMENT

Federal Tax Id: 26-3068146 **Firm Name:** CEMEX Construction Materials Atlantic, LLC

Plant Code: 01 **Plant Name:** CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant

Applicable Requirement for: (please check only one box below)

☐ **The entire site**

☒ **A group of sources, Group ID:** Electric Generators

☐ **A single source, Unit ID:**

☐ **Alternative Scenario, Scenario Name:**

Citation #: 25 Pa. Code §129.97(c)(8)

Compliance Method based upon: ☒ **Applicable Requirement** ☐ **Gap Filling Requirement**

Method of Compliance Type: (Check all that applies and complete all appropriate sections below)

☒ **Monitoring** ☐ **Testing** ☐ **Reporting**

☒ **Record Keeping** ☒ **Work Practice Standard**

Section 2: Monitoring

1. Monitoring device type (stack test, CEM, etc.): Non-resettable hour meter.

2. Monitoring device location: Engine.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Hours of engine operation.

3. How will data be reported: NA

Section 3: Testing

1. Reference Test Method Description:	NA
2. Reference Test Method Citation:	NA

Section 4: Record Keeping

Describe what parameters will be recorded and the frequency of recording:

Records of the monthly and 12-month rolling period hours of engine operation.

Section 5: Reporting

Describe what is to be reported and the frequency of reporting:

NA

1. Reporting start date:	NA

Section 6: Work Practice Standard

Describe any work practice standards:

Install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices.

6.5 Addendum 3 – CAM Applicability Worksheets for Sources

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	26-3068146		
Firm Name	CEMEX Construction Materials Atlantic, LLC / Wampum Cement Plant		
Plant Code	01	Source I.D.	See Application Document Section 3.3
Control Type		AIRS Code No.	Pollutant
Control Make		Control Model No.	Control Efficiency
Control I.D.		Source or Emission Unit Name	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

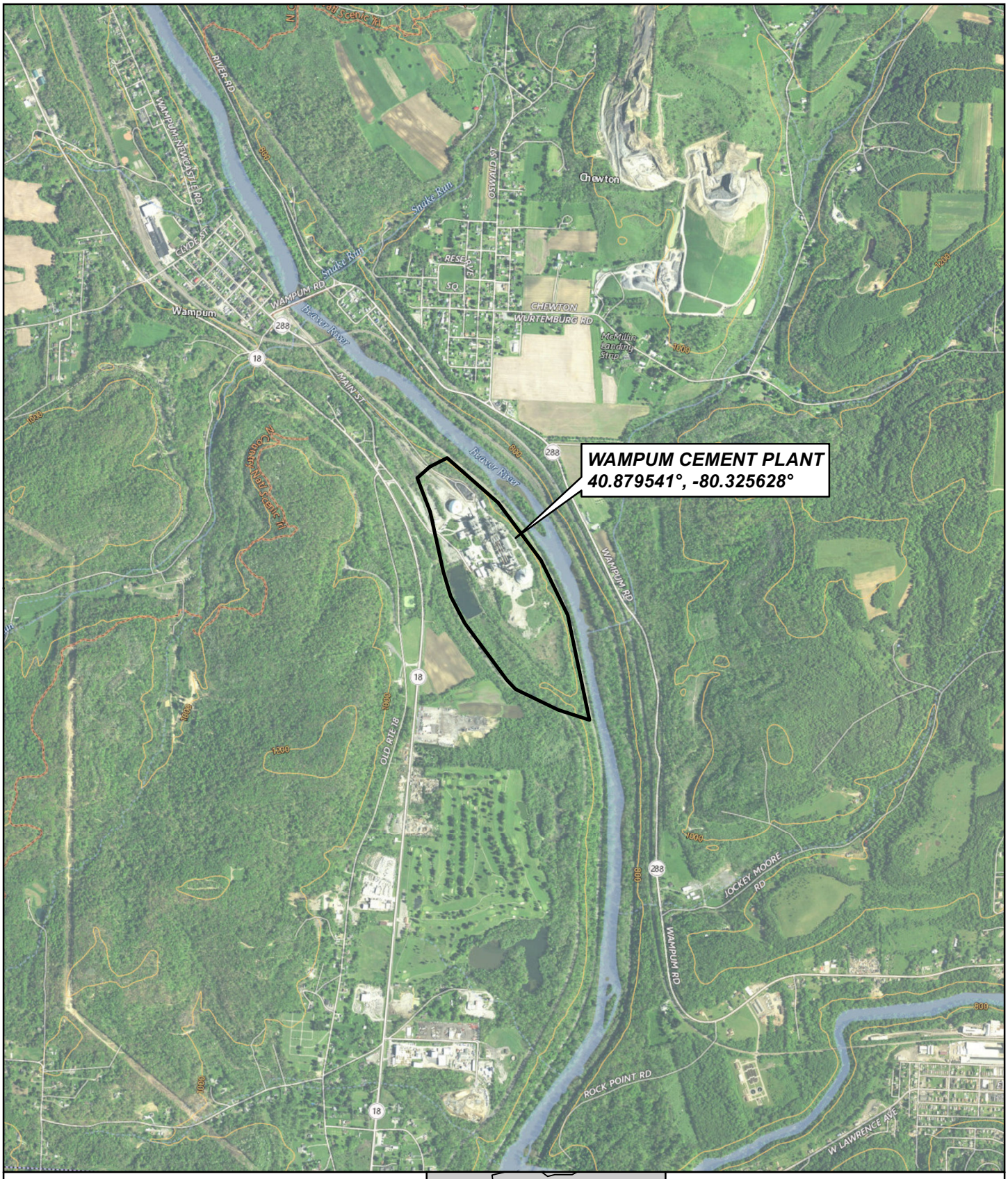
SECTION C. CAM STATUS

Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

DOCUMENT ATTACHMENTS

1. **Site Location Map**
2. **Facility Site Plan**
3. **Process Flow Diagram**
4. **Proof and Copies of Municipal Notifications**
5. **RBLC Summary**
6. **Emissions Calculations**
7. **Copy of Application Fee Check**
8. **Air Quality Analysis Report**

ATTACHMENT 1 SITE LOCATION MAP



Legend

Property Boundary

0 1,000 2,000

Feet

CEMEX - WAMPUM CEMENT PLANT

AREA MAP

LAWRENCE COUNTY, PA

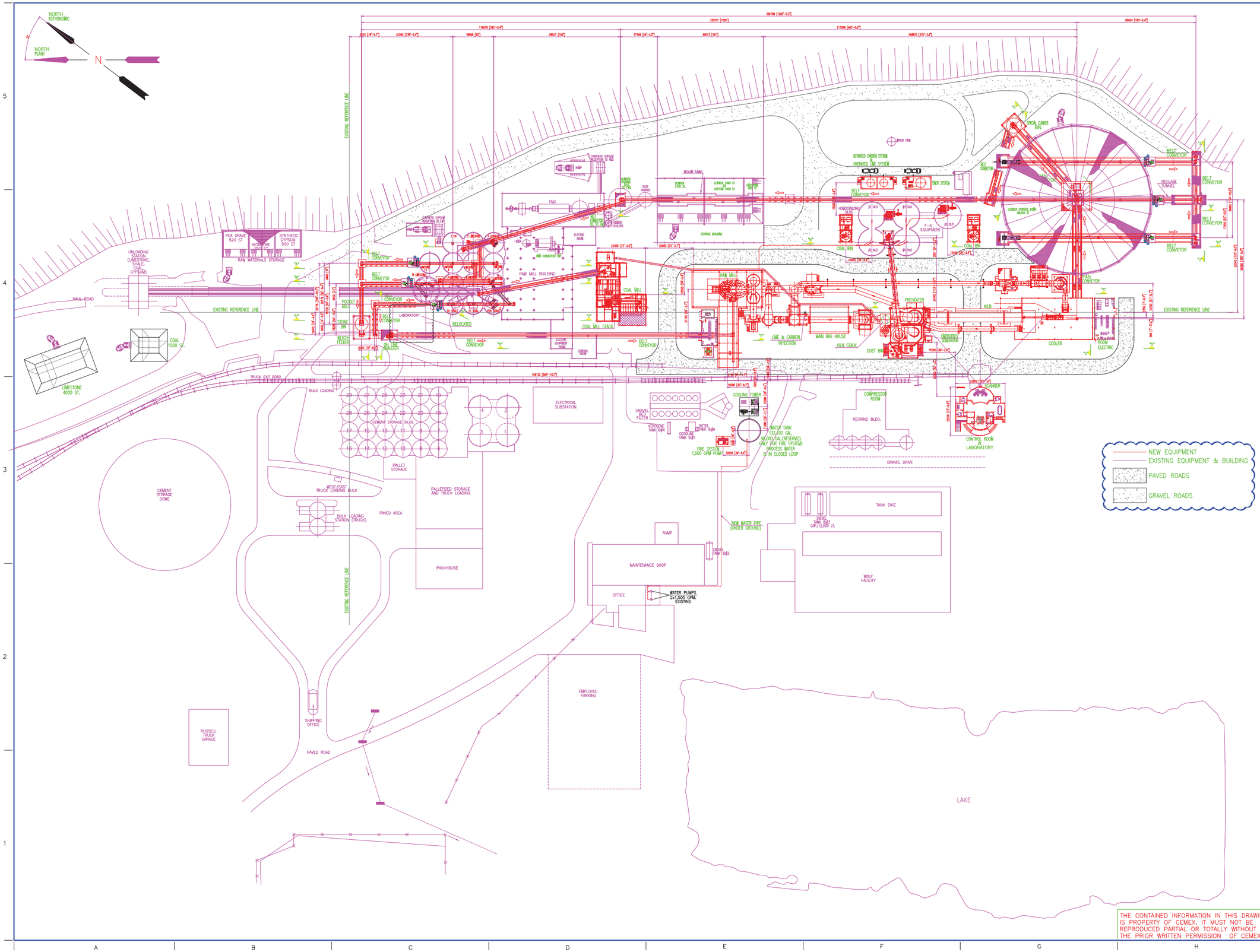
Map Source: USGS Topographic Map

POWER ENGINEERS

Date: 11/1/2019

Path: H:\Cemex\Wampum GIS\Area_Map.mxd

ATTACHMENT 2 FACILITY SITE PLAN



REVISIONS			
No.	DATE	DESCRIPTION	BY

111-11-04-005	PREHEATER FEEDING SYSTEM	CEMEX
111-11-04-004	CALCINATION LINE	CEMEX
111-11-04-003	HANDLING CLINKER	CEMEX
111-11-04-002	HANDLING RAW MATERIALS	CEMEX
DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
USE ONLY AS REFERENCE

DATE: 09-NOV.-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 12/06/2018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:

GENERAL ARRANGEMENT
LAY OUT
No.4 KILN NEW LINE

ALTERNATIVE 9

DRAWN:	V.G.A.	DATE:	APRIL/2018
CHECKED:	J.A.T.	DATE:	APRIL/2018
APPROVED:	G.B.R.	DATE:	
ACOTS:	mm	SCALE:	1:750

DRAWING No. 111-11-04-001 | REV.No. B

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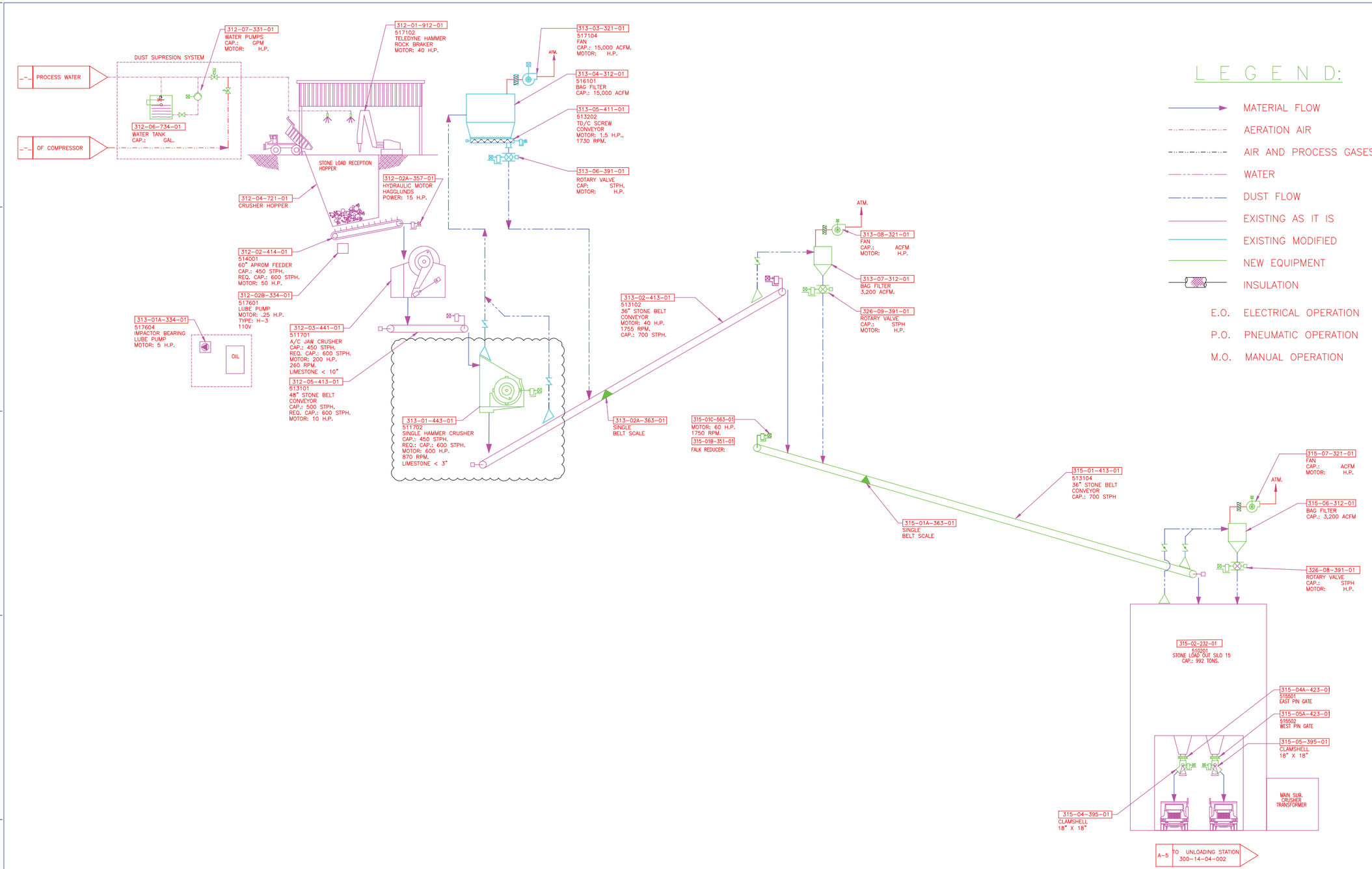
FILE: 181109_1111104001_B
PRINT DATE: 11/09/2018

ATTACHMENT 3 PROCESS FLOW DIAGRAMS



L E G E N D:

- MATERIAL FLOW
- AERATION AIR
- AIR AND PROCESS GASES
- WATER
- DUST FLOW
- EXISTING AS IT IS
- EXISTING MODIFIED
- NEW EQUIPMENT
- INSULATION

E.O. ELECTRICAL OPERATION

P.O. PNEUMATIC OPERATION

M.O. MANUAL OPERATION

REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No. | TITLE | SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
USE ONLY AS REFERENCE

DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 30/APR/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX WAMPUM

PLANT: WAMPUM PENNSYLVANIA

PROJECT No. WAMPUM 4K
NAME: #4 KLIN

TITLE:

CRUSHER SYSTEM FLOW DIAGRAM MODIFICATION

DRAWN: R.M.A	DATE: 30/APR/018
CHECKED: J.A.T.	DATE: 30/APR/018
APPROVED: M.Q.A.	DATE:
ACOTS: NONE	SCALE: 1:1

DRAWING No. 300-14-04-001 | REV.No. B

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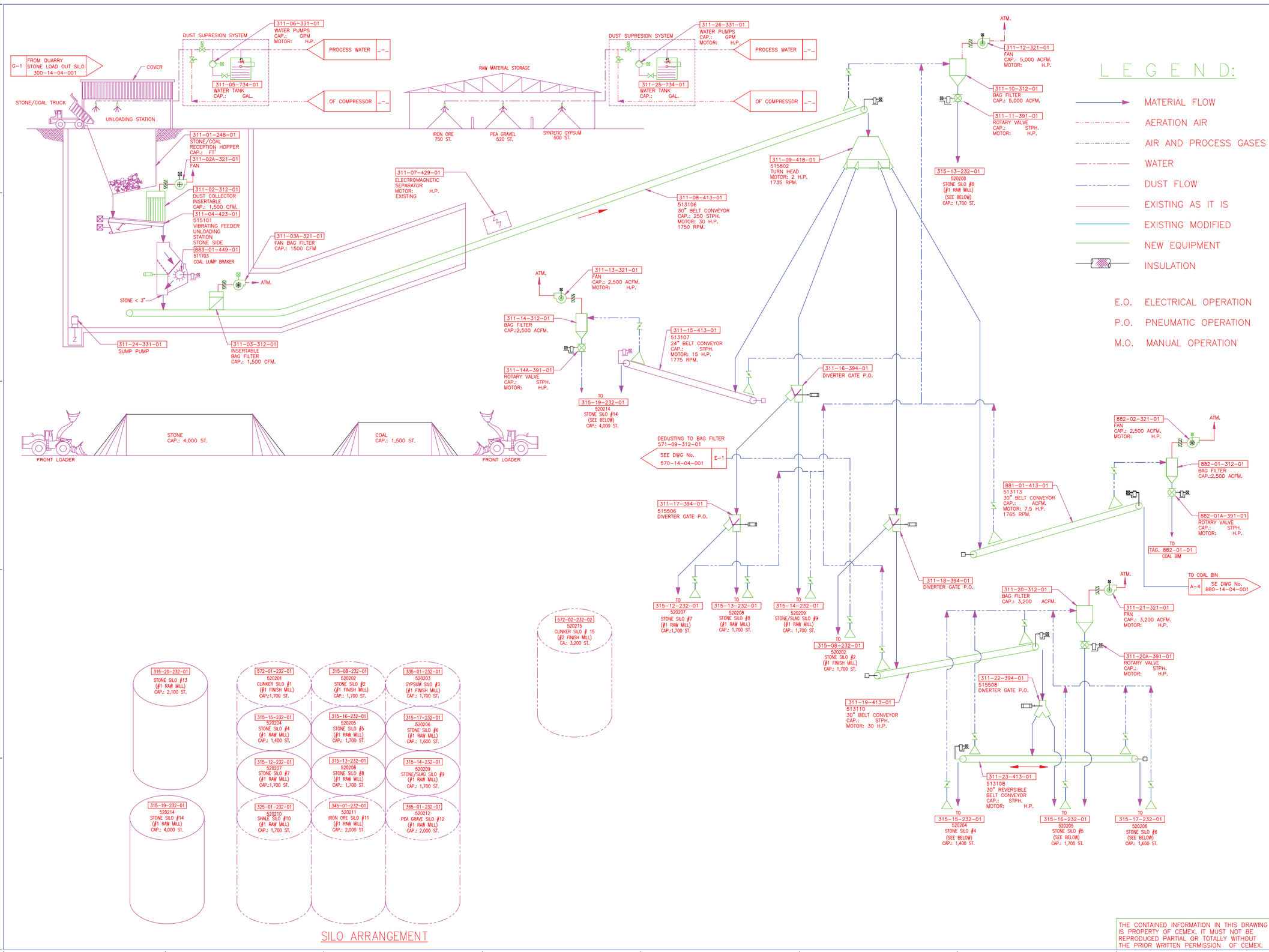
FILE: 300-14-04-001_B_CR
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY
DRAWING IN PROCESS
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DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 30/APR/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:

STONE/COAL CONVEYOR SYSTEM FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 30/BR/018
CHECKED: J.A.T.	DATE: 30/ABR/018
APPROVED: M.Q.A	DATE:
ACOTS: NONE	SCALE: 1:1

DRAWING No. 300-14-04-002 REV.No. B

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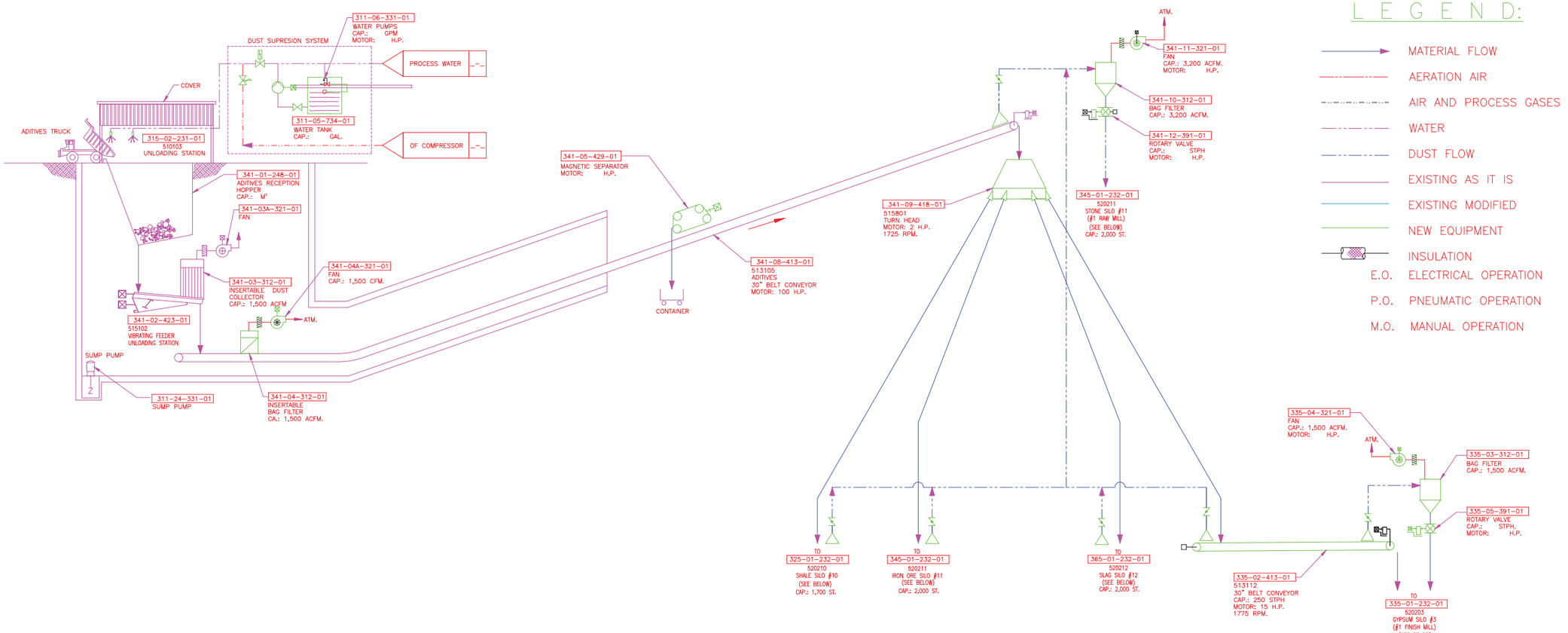
FILE: 300-14-04-002_B_STO
PRINT DATE: 06/06/2018



SILO ARRANGEMENT

L E G E N D:

- MATERIAL FLOW
- AERATION AIR
- AIR AND PROCESS GASES
- WATER
- DUST FLOW
- EXISTING AS IT IS
- EXISTING MODIFIED
- NEW EQUIPMENT
- INSULATION

E.O. ELECTRICAL OPERATION

P.O. PNEUMATIC OPERATION

M.O. MANUAL OPERATION

REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No. | TITLE | SUPPLIER

REFERENCE DRAWING

PRELIMINARY
DRAWING IN PROCESS
USE ONLY AS REFERENCE
DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 30/APR/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:

ADITIVES CONVEYOR SYSTEM FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 30/APR/018
CHECKED: J.A.T.	DATE: 30/APR/018
APPROVED: G.B.R.	DATE:
ACOTS: NONE	SCALE: 1:1

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DRAWING No. 300-14-04-003 | REV.No. B

FILE: 300-14-04-003_B_AD
PRINT DATE: 06/06/2018

L E G E N D:

- MATERIAL FLOW
- AERATION AIR
- AIR AND PROCESS GASES
- WATER
- DUST FLOW
- EXISTING AS IT IS
- EXISTING MODIFIED
- NEW EQUIPMENT
- INSULATION

E.O. ELECTRICAL OPERATION
P.O. PNEUMATIC OPERATION
M.O. MANUAL OPERATION

411-41-321-01
FAN
CAP.: 3,200 CFM
MOTOR: H.P.

411-42-312-01
BAG FILTER
CAP.:3,200 ACFM

411-43-391-01
ROTARY VALVE
CAP.: STPH
MOTOR: H.P.

TAG. 411-01-01
BIN
CAP.:385 ST.

411-44-632-01
BELT SCALE

411-45-413-01
SCRAPPER

411-46-421-01
WEIGHT BELT FEEDER
CAP.: 270 STPH.
POWER: KW.

411-39-321-01
FAN
CAP.: 4,000 ACFM.
MOTOR: H.P.

411-38-312-01
BAG FILTER
CAP.: 4,000 CFM.

411-40-391-01
ROTARY VALVE
CAP.: STPH.
MOTOR: H.P.

411-35-321-01
FAN
CAP.: 5,000 CFM.
MOTOR: H.P.

411-36A-327-01
SLIDE GATE M.O.

313-37-391-01
ROTARY VALVE
CAP: STPH.
MOTOR: H.P.

411-34-312-01
BAG FILTER
CAP.: 5,000 CFM

411-36-411-01
SCREW CONVEYOR
MOTOR: H.P.,
RPM.

411-50-414-01
POCKET BELT
CONVEYOR
CAP.: 270 STPH.
MOTOR: H.P.
RPM

411-51-321-01
FAN
CAP.: 2,500 ACFM.
MOTOR: H.P.

411-52-312-01
BAG FILTER
CAP.: 2,500 ACFM.

411-47-321-01
FAN
CAP.: 3,200 ACFM.
MOTOR: H.P.

411-48-312-01
BAG FILTER
CAP.: 3,200 CFM.

411-49-391-01
ROTARY VALVE
CAP.: STPH.
MOTOR: H.P.

411-53-391-05
ROTARY VALVE
CAP.: STPH.
MOTOR: H.P.

411-57-413-01
30" BELT CONVEYOR
CAP.: 100 STPH.
MOTOR: H.P.

411-65-032-01
ON LINE ANALYZER
POWER: 2.8 H.P.

411-29-413-01
523101
STONE
30" BELT CONVEYOR
CAP.: 200 STPH.
MOTOR: 5 H.P.

411-28-413-01
523106
STONE
30" BELT CONVEYOR
CAP.: 200 STPH.
MOTOR: H.P.
RPM.

411-27-413-02
523104
STONE
30" BELT CONVEYOR
CAP.: 100 STPH.

411-30-413-01
36" BELT CONVEYOR
CAP.: 290 STPH.
MOTOR: H.P.

315-19-232-01
520214
STONE SILO #14
(#1 RAW MILL)
CAP.: 4,000 ST.

315-12-232-01
520207
STONE SILO #7
(#1 RAW MILL)
CAP.:1,700 ST.

315-13-232-01
520208
STONE SILO #8
(#1 RAW MILL)
CAP.: 1,700 ST.

315-14-232-01
520209
STONE/SLAG SILO #9
(#1 RAW MILL)
CAP.: 1,700 ST.

315-20-232-01
520213
SILO #13
STONE

315-15-232-01
520204
STONE SILO #4
(#1 RAW MILL)
CAP.:1,400 ST.

315-16-232-01
520205
STONE SILO #5
(#1 RAW MILL)
CAP.: 1,700 ST.

315-17-232-01
520206
STONE SILO #6
(#1 RAW MILL)
CAP.: 1,600 ST.

411-06-396-01
PIN GATE

411-19-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-07-396-01
PIN GATE

411-20-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-63-396-01
PIN GATE

411-64-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-08-396-01
411-09-396-01
PIN GATE

411-17-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-01-396-01
PIN GATE

411-18-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-02-396-01
PIN GATE

411-03-396-01
PIN GATE

411-21-395-01
CLAM GATE
CAP.: 100 STPH.
MOTOR: KW.

411-14-396-01
411-15-396-01
411-16-396-01
PIN GATE

411-32-413-01
30"-STONE
WEIGHT BELT CONVEYOR
CAP.: 100 STPH.
MOTOR: .75 H.P.

411-33-421-02
525406
24"-STONE
WEIGHT FEEDER
CAP.: 100 STPH.
MOTOR: .5 H.P.

411-31-421-03
525412
24" STONE
WEIGHT FEEDER
CAP.: 100 STPH.
MOTOR: .75 H.P.

411-04-421-01
525404
24" STONE
AUTOWEIGHT FEEDER
CAP.: STPH.
MOTOR: 05 H.P.
1750 RPM.

411-05-413-01
30" STONE
WEIGHT BELT CONVEYOR
CAP.: STPH.
MOTOR: .5 H.P.

325-01-232-01
31509-23201
520210
SHALE SILO #10
CAP.: 1,700 ST.

345-01-232-01
31510-23201
520211
IRON ORE SILO #11
CAP.: 2,000 ST.

365-01-232-01
31511-23201
520212
PEA GRAVEL SILO #12
CAP.: 2,000 ST.

411-10-396-01
PIN GATE

411-11-396-01
PIN GATE

411-12-396-01
411-13-396-01
PIN GATE

411-23-421-02
525407
24" SHALE AUTOWEIGHT
FEEDER
CAP.: 30 STPH.
MOTOR: 1 H.P.
1750 RPM.

411-24-421-02
525408
24" IRON AUTOWEIGHT
FEEDER
CAP.: 20 STPH.
MOTOR: 1 H.P.
1750 RPM.

411-25-421-02
525409
24" PEA GRAVEL
AUTOWEIGHT FEEDER
CAP.: 20 STPH.
MOTOR: H.P.
180 RPM.

411-26-421-02
SAND AUTOWEIGHT
30" BELT CONVEYOR
CAP.: 20 STPH.
MOTOR: .5 H.P.
180 RPM.

411-59-321-01
FAN
CAP.: 5,000 CFM.
MOTOR: H.P.

411-58-312-01
BAG FILTER
CAP.: 5,000 CFM

411-60-411-01
SCREW CONVEYOR
MOTOR: H.P.,
RPM.

411-61-327-01
SLIDE GATE M.O.

313-62-391-01
ROTARY VALVE
CAP: STPH.
MOTOR: H.P.

DEDUSTING IN
BAG FILTER
422-13-312-01

TO BELT CONVEYOR
No. 422-12-413-01
A-5
SEE DWG No.
420-14-04-001

ATM.

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REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No. | TITLE | SUPPLIER

REFERENCE DRAWING

PRELIMINARY
DRAWING IN PROCESS
USE ONLY AS REFERENCE
DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:

FEEDING RAW MATERIALS TO RAW MILL FLOW DIAGRAM

DRAWN:	R.M.A.	DATE:	30/APR/018
CHECKED:	J.A.T.	DATE:	30/APR/018
APPROVED:	M.Q.A	DATE:	
ACOTS:	NONE	SCALE:	1:1

DRAWING No. 411-14-01-001
REV.No. B

FILE: 411-14-04-001_B.dwg
PRINT DATE: 06/06/2018

FROM BELT CONVEYOR No. 411-04-413-01
H-1 SEE DWG No. 411-14-01-001

422-63-361-01 HOIST CAP.: T

600 ACFM

2049 ACFM

989 ACFM

1130 ACFM

422-14A-327-01 REGULATION VALVE M.O.

422-14-321-01 FAN CAP.: 6,145 ACFM. MOTOR: 25 H.P.

ATM.

422-13-312-01 BAG FILTER CAP.: 6,145 ACFM. CLOTH AREA 872 Ft2

422-17-682-01 METAL DETECTOR

422-16-429-01 MAGNETIC SEPARATOR MOTOR: H.P. POWER: KW

422-15-391-01 ROTARY VALVE CAP.: STPH. MOTOR: .5 H.P..

422-18-394-01 TWO WAY VALVE P.O.

422-12-413-01 BELT CONVEYOR CAP. NOM.: 295 STPH. CAP. MAX.: 357 STPH. DENSITY: 87 Lb/Ft3 MOISTURE: 9% WIDTH: 800 mm. MOTOR: H.P.

422-33-334-01 LUBRICATION PUMP REDUCER MOTOR: H.P.

422-04A-351-01 CLASSIFIER REDUCER

422-05-563-01 CLASSIFIER MOTOR TYP.: SCLB 215 H.P.

422-34-331-01 RAW MILL SEPARATOR GREASE LUBRICATOR

422-62-361-01 HOIST CAP.: 16.5 T.

422-04-427-01 LSKS CLASSIFIER

422-23A-327-01 REGULATION VALVE M.O.

ATM.

422-23-321-01 FAN CAP.: 5,440 ACFM MOTOR: 25 H.P.

422-22-312-01 BAG FILTER CAP.: 5,440 ACFM CLOTH AREA 872 Ft2

422-24-391-01 ROTARY VALVE MOTOR: .5 H.P.

422-11-412-01 BUCKET ELEVATOR CAP.: 75 STPH MOTOR: 30 H.P. DENSITY: 87.4 Lb/Ft3

TAG 422-01-01 REJECTING HOPPER

318 ACFM

422-64-627-01 LEVEL DETECTOR

422-65-632-01 WEIGHING CELLS

422-19-396-01 SLIDE GATE P.O.

422-21-682-01 METAL DETECTOR

CAP. 706 Ft3

422-08-423-01 VIBRATORY FEEDER OP. CAP.: 45 STPH MOTOR: KW

848 ACFM

848 ACFM

422-20-413-01 BELT CONVEYOR OP. CAP.: 95 STPH MOTOR: 5.5 H.P. DENSITY: WIDTH: 650 mm.

422-25-394-01 TWO WAY VALVE P.O.

17 ACFM

1448 ACFM

848 ACFM

848 ACFM

422-10-413-01 BELT CONVEYOR OP. CAP.: 75 STPH. MOTOR: 7.5 H.P. WIDTH: 650 mm.

CONTAINER

422-06-391-01 ROTARY VALVE OP. CAP.: 445 STPH. MOTOR: 15 H.P.

422-31-334-01 HYDRAULIC TENSIONING SYSTEM

422-49-331-01 HYDRAULIC PUMP MOTOR : H.P.

422-50-331-01 HYDRAULIC PUMP MOTOR : H.P.

422-03-562-01 MAIN MOTOR TYP.: SRHB # POLES 6 3,000 H.P.

422-09-423-01 VIBRATING FEEDER OP. CAP.: 75 STPH MOTOR: KW

POWER: 3,000 H.P.

422-01-435-01 RAW MILL 290 STPH

422-02-351-01 PLANETARY GEAR BOX MAAG MODEL: WPU-107/C-300

422-32-391-01 PENDULUM VALVE E.O. MOTOR: H.P.

422-30-334-01 ROLLER LUBRICATION

422-51-331-01
422-52-331-01
422-53-331-01 HIGH PRESSURE PUMP MOTOR: H.P.

422-54-331-01 HIGH PRESSURE PUM MOTOR: H.P.

422-55-321-01
422-56-321-01 AXIAL FAN

422-57-591-01
422-58-591-01 HEATING RESISTANCE

422-59-331-01 LUBRICATION PUMPS SEPARATOR BEARINGS MOTOR: H.P.

422-60-331-01 LUBRICATION PUMPS BALANCE BEAMS ROLLERS 1,2,3,4 MOTOR: H.P.

422-61-331-01 WATER PUMP CAP.: 92.5 GPM MOTOR.: H.P.

TAG 422-02-01 WATER SPRAYING SYSTEM ATOMIZED MILL CAP.: FT3

422-07-321-01 SEALING FAN CAP.: CFM MOTOR: 10 H.P.

422-36A-334-01 LUBRICATION SYSTEM VTI. MOTOR: H.P.

422-37-563-01 VTI MOTOR MOTOR: 3056 H.P.

422-35-327-01 REGULATION VALVE E.O. TYP.: SAR10.1-45/GS160.3/GZ MOTOR: 1 H.P.

422-36-321-01 VTI FAN RAW MILL TEMP.: 182 °F FLOW: 345,200 CFM.

E.J.

422-26-426-01 CYCLON 1 ø 5,600 mm.

422-27-426-01 CYCLON 2 ø 5,600 mm.

422-28-391-01 ROTARY VALVE CAP.: STPH. MOTOR: 5.5 H.P.

422-29-391-01 ROTARY VALVE CAP.: STPH MOTOR: 5.5 H.P.

431-02-321-01 FAN CAP.: ACFM MOTOR: 10 H.P. TEMP: °F

431-01-416-04 AIR SLIDE CAP.: 220 STPH. SIZE: N500

CIRCULAR AIR BOX

431-07A-327-01 REGULATION VALVE M.O.

MTA

431-08-321-01 FAN CAP.: 8,500 ACFM.

431-07-312-01 BAG FILTER CAP.: 8,500 ACFM

431-06-033-01 HELICOIDAL SAMPLER E.O.

431-09-627-01 LEVEL INDICATOR

431-11-324-01 BLOWER CAP.: ICFM. PRESSURE: PSIG. MOTOR: H.P.

431-12-477-01 PRESSURE AIR COOLER MOTOR: H.P.

431-10-417-01 PNEUMATIC PUMP CAP.: 220 STPH MOTOR: H.P..

422-39-327-01 REGULATION VALVE E.O. MOTOR: H.P.

422-38-327-01 DAMPER GUILLOTINE O.E MOTOR: H.P.

TO MAIN DUST COLLECTOR A-4 SEE DWG. No. 510-14-01-001

TO MAIN DUST COLLECTOR A-1 SEE DWG. No. 510-14-01-001

431-44-327-01 REGULATION VALVE E.O. POWER: 1 H.P.

FRESH AIR INTAKE

431-43-327-01 REGULATION VALVE E.O. POWER: KW.

TO RAW SILOS A-5 SEE DWG. No. 440-14-04-001

FROM RESIDUAL GASES FAN DE DIB. No: 500-14-01-001 H-4

FRESH AIR INTAKE

422-40-327-01 REGULATION VALVE E.O. MOTOR: H.P.

422-41-327-01 REGULATION VALVE E.O. MOTOR: 1 H.P.

422-42-327-01 CLOSING VALVE O.E MOTOR: 1 H.P.

OF VTI KILN SEE DWG No. 500-14-04-001 A-2

422-45-326-01 HOT GAS GENERATOR

THE HOT GAS GENERATOR WILL BE RENTED AND CONNECTED ONLY FOR THE FIRST MILL START. (DIESEL)

L E G E N D:

- MATERIAL FLOW
- AERATION AIR
- AIR AND PROCESS GASES
- WATER
- DUST FLOW
- EXISTING AS IT IS
- EXISTING MODIFIED
- NEW EQUIPMENT
- INSULATION

E.O. ELECTRICAL OPERATION
P.O. PNEUMATIC OPERATION
M.O. MANUAL OPERATION

REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No. | TITLE | SUPPLIER

REFERENCE DRAWING

PRELIMINARY
DRAWING IN PROCESS
USE ONLY AS REFERENCE
DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:

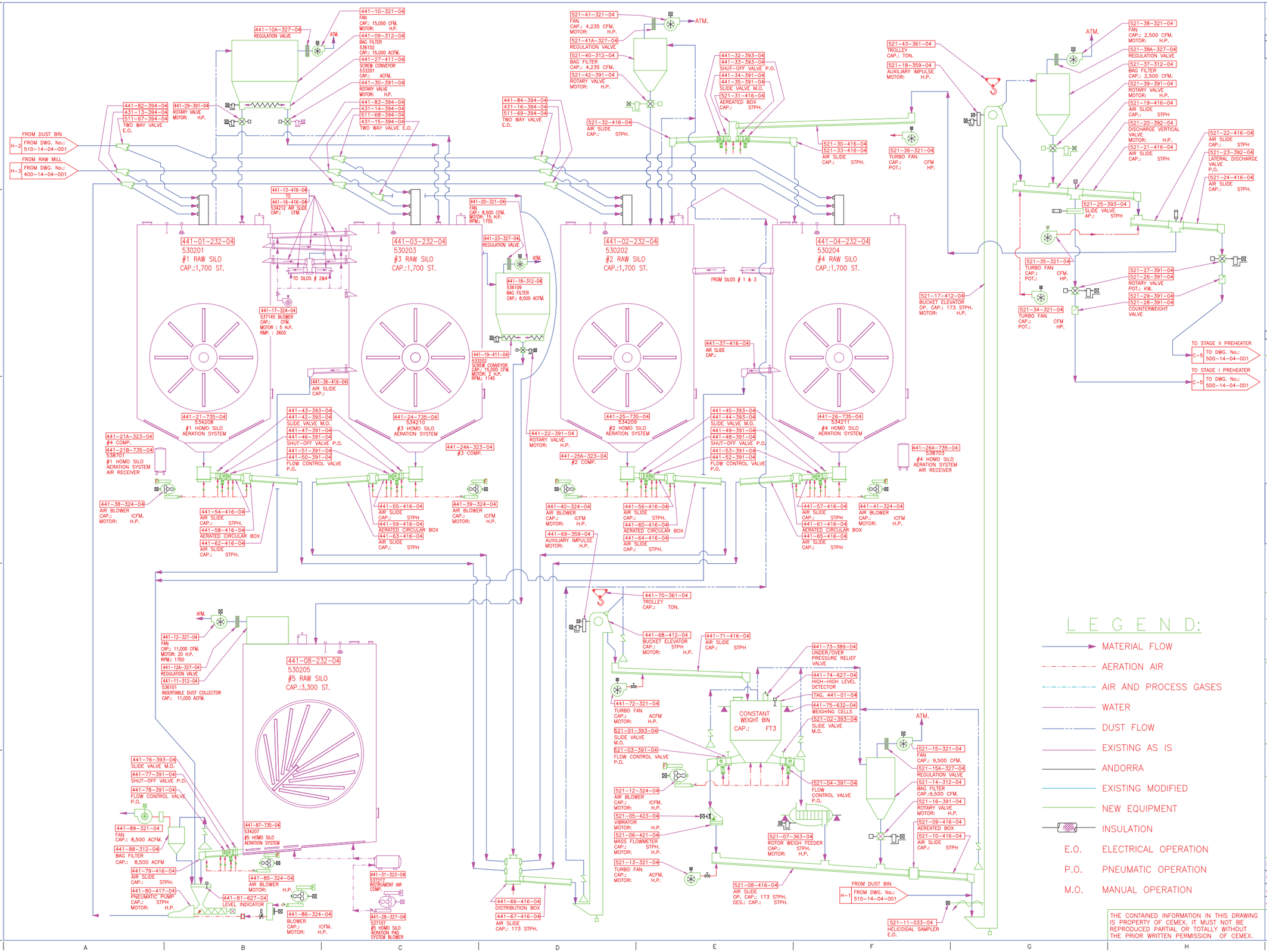
RAW MEAL PREPARATION

FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 16/JAN/2018
CHECKED: J.A.T.	DATE: 16/JAN/2018
APPROVED: G.B.R.	DATE:
ACOTS: NONE	SCALE: 1:1

DRAWING No. 420-14-04-001 | REV.No. B

FILE: 420-14-04-001_B.dwg
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
USE ONLY AS REFERENCE

DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATION & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No. XXXXXXXXXX
NAME: KILN 4

TITLE:

FLOW DIAGRAM
BLENDING SILOS

DRAWN: V.G.A.	DATE: 30/APR/018	
CHECKED: J.A.T.	DATE: 30/APR/018	
APPROVED: G.B.R.	DATE:	
ACOTS: .	SCALE: 1:1	

DRAWING No. 440-14-04-001
REV.No. B

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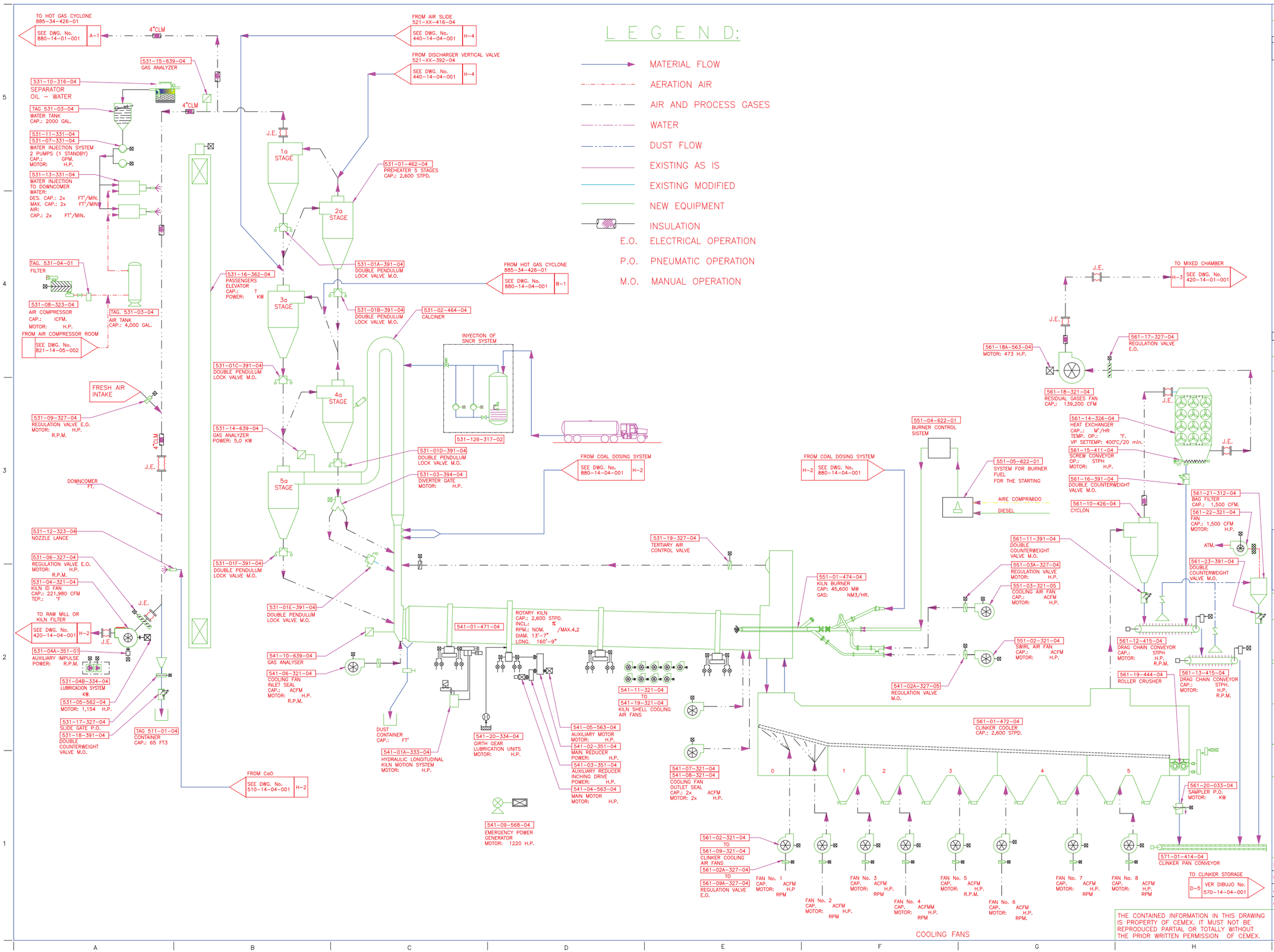
FILE: 440-14-04-001_B-CC
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER
REFERENCE DRAWING		

PRELIMINARY
DRAWING IN PROCESS
USE ONLY AS REFERENCE
DATE: 04–JUNE–2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

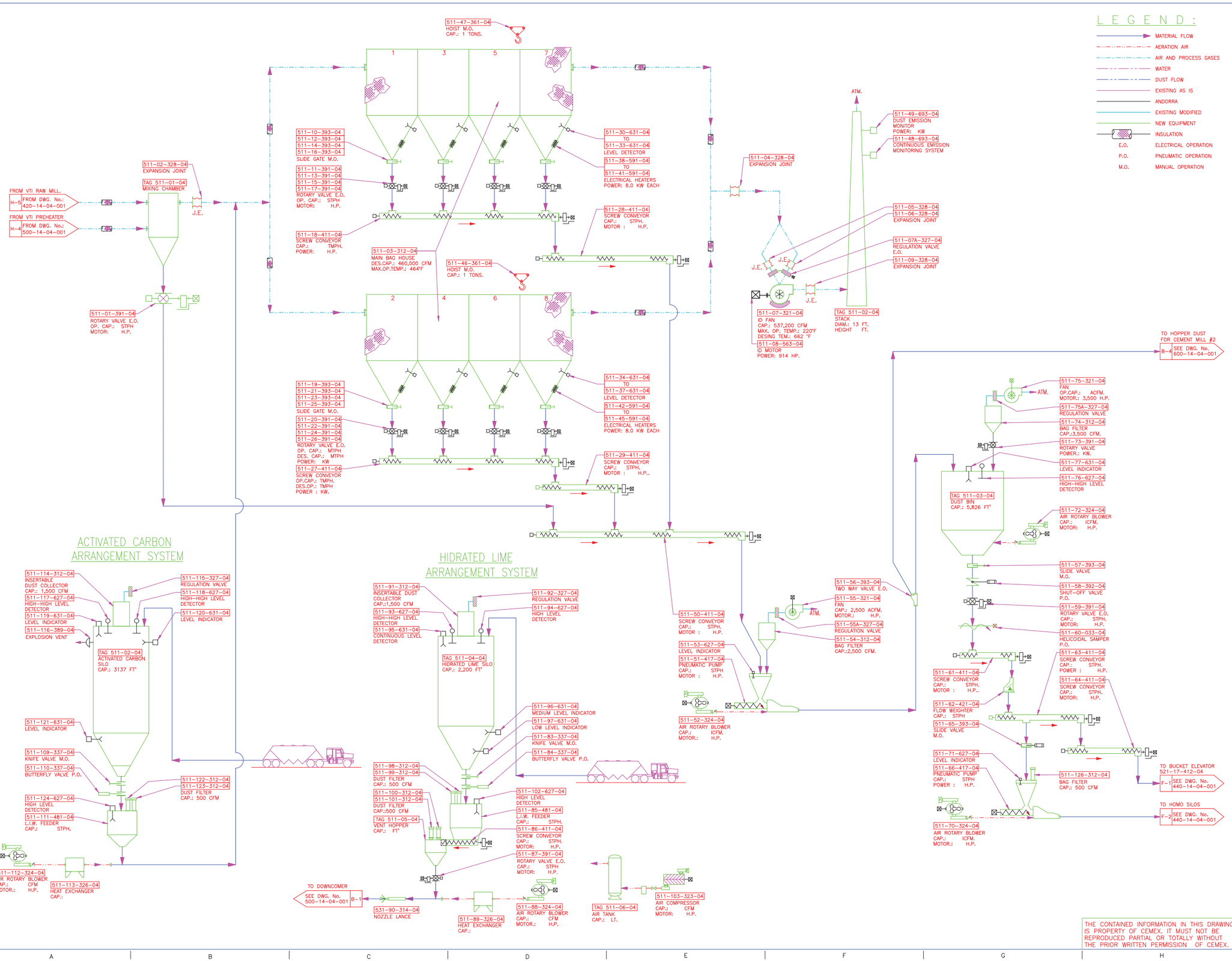
PROJECT No.

NAME: #4 KILN

TITLE:
CALCINATION FLOW DIAGRAM: PREHEATER, ROTARY KILN AND CLINKER COOLER

DRAWN: R.M.A.	DATE: 16/JAN/2018	
CHECKED: J.A.T.	DATE: 16/JAN/2018	
APPROVED: G.B.R.	DATE:	
ACOTS: NONE	SCALE: 1:1	
DRAWING No. 500–14–04–001	REV.No. B	

FILE: 500–14–04–001_B.dwg
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
USE ONLY AS REFERENCE

DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No. XXXXXXXXXX

NAME: KILN 4

TITLE:

MAIN DUST COLLECTOR FLOW DIAGRAM (CONVENTIONAL)

DRAWN: V.G.A.	DATE: 30/APR/018	
CHECKED: J.A.T.	DATE: 30/APR/108	
APPROVED: G.B.R.	DATE:	
ACOTS: .	SCALE: 1:1	

DRAWING No. 510-14-04-001

REV.No. B

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FILE: 510-14-04-001_B.dwg
PRINT DATE: 06/06/2018

L E G E N D:

- MATERIAL FLOW
- AERATION AIR
- AIR AND PROCESS GASES
- WATER
- DUST FLOW
- EXISTING AS IS
- EXISTING MODIFIED
- NEW EQUIPMENT
- INSULATION

E.O. ELECTRICAL OPERATION

P.O. PNEUMATIC OPERATION

M.O. MANUAL OPERATION

FROM CLINKER COOLER
H-1 SEE DWG. No. 500-14-01-001

571-01-414-01
CLINKER PAN CONVEYOR
CAP.: 108 STPH.
DENSITY: 78 Lb/Ft3
MOTOR: 75 H.P.

571-05A-321-01
FAN
CAP.: 5,400 ACFM
MOTOR: H.P.

ATM.

571-05-312-01
BAG FILTER
CAP.: 5,400 ACFM.

571-04-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

571-03-394-01
DIVERTER VALVE
E.O.

571-02-414-01
CLINKER PAN CONVEYOR
CAP.: 108 STPH.
MOTOR: H.P.

571-06-627-05
LEVEL SWITCH

574-32A-321-01
FAN
CAP.: 6,300 ACFM
MOTOR: H.P.

574-32-312-01
BAG FILTER
CAP.: 6,300 ACFM.

574-33-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

573-08A-321-01
FAN
CAP.: 2,500 ACFM
MOTOR: H.P.

573-08-312-01
BAG FILTER
CAP.: 2,500 ACFM

573-07-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

573-09-627-01
LEVEL SWITCH

573-10-631-01
TRANSMITTER CONTINUO
TYPE RADAR

TAG 573-01-01
SPECIAL CLINKER BIN
386 STPH.

CLINKER DOME
CAP.: 68,000 STPH.
DENSITY: 87.3 Lb/Ft3

573-01-396-01
PIN GATE

573-03-395-01
CLAM GATE
MOTOR: H.P.

573-02-396-01
PIN GATE

573-04-395-01
CLAM GATE
MOTOR: H.P.

573-12-321-01
FAN
CAP.: 500 CFM

573-11-312-01
INSERTABLE DUST FILTER
CAP.: 500 CFM.

573-06-347-01
BULK MOBILE LOADER
CAP.: STPH
MOTOR: H.P.

573-05-413-01
BELT CONVEYOR
CAP.: STPH.
MOTOR: H.P.

573-05A-632-01
BELT SCALE

574-01-396-01
574-02-396-01
574-03-396-01
574-04-396-01
574-05-396-01
PIN GATE

574-06-396-01
574-07-396-01
574-08-396-01
574-09-396-01
574-10-396-01
PIN GATE

574-11-396-01
574-12-396-01
574-13-396-01
574-14-396-01
574-15-396-01
PIN GATE

574-16-395-01
574-17-395-01
574-18-395-01
574-19-395-01
574-20-395-01
CLAM GATE
MOTOR: 1 H.P.

574-21-395-01
574-22-395-01
574-23-395-01
574-24-395-01
574-25-395-01
CLAM GATE
MOTOR: 1 H.P.

574-26-395-01
574-27-395-01
574-28-395-01
574-29-395-01
574-30-395-01
CLAM GATE
MOTOR: 1 H.P.

574-31-413-01
BELT CONVEYOR
CAP.: 300 STPH
MOTOR: H.P.

574-32-312-01
BAG FILTER
CAP.: 6,300 ACFM.

574-33-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

574-34-413-01
BELT CONVEYOR
MOTOR: H.P.

574-35A-321-01
FAN
CAP.: 6,300 ACFM
MOTOR: H.P.

574-35-312-01
BAG FILTER
CAP.: 6,300 CFM.

574-36-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

574-42A-321-01
FAN
CAP.: 3,200 ACFM
MOTOR: H.P.

574-42-312-01
BAG FILTER
CAP.: 3,200 CFM.

574-39-413-01
BELT CONVEYOR
CAP.: STPH
MOTOR: H.P.

574-37-413-01
BELT CONVEYOR
CAP.: STPH
POWER: H.P.

574-43-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

574-38-413-01
BELT CONVEYOR
CAP.: STPH
MOTOR: H.P.

574-44A-321-01
FAN
CAP.: 6,300 ACFM
MOTOR: H.P.

574-44-312-01
BAG FILTER
CAP.: 6,300 ACFM.

574-45-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

COVER

574-46A-321-01
FAN
CAP.: 6,300 ACFM
MOTOR: H.P.

MTA

574-46-312-01
BAG FILTER
CAP.: 6,300 ACFM.

574-47-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

574-40-394-01
DIVERTER VALVE
E.O.

574-41-413-01
BELT CONVEYOR
MOTOR: H.P.

572-02-232-01
520215
CLINKER SILO #15
CA.: 3,200 ST.

STORAGE BULDING

574-48-312-01
INSERTABLE DUST COLLECTOR
CAP.: 3,500 CFM

574-48A-321-01
FAN
CAP.: ACFM
MOTOR: H.P.

574-49-312-01
INSERTABLE DUST COLLECTOR
CAP.: 3,500 CFM

574-49A-321-01
FAN
CAP.: ACFM
MOTOR: H.P.

574-50-312-01
INSERTABLE DUST COLLECTOR
CAP.: 3,500 CFM

574-50A-321-01
FAN
CAP.: ACFM
MOTOR: H.P.

574-51-312-01
INSERTABLE DUST COLLECTOR
CAP.: 3,500 CFM

574-51A-321-01
FAN
CAP.: ACFM
MOTOR: H.P.

CLINKER
CAP.: 1,250 TONS
DENSITY: 87.3 Lb/Ft3

GYPSUM CAP.: 1,850 ST.
CLINKER CAP.: 1,690 ST.

STONE
CAP.: 600 ST.

FRONT LOADER

TO # 2 FINISH MILL
SEE DWG. No. 600-14-02-001 B-2

571-08-413-01
553101
#7 CLINKER
BELT CONVEYOR
MOTOR: 20 H.P.

DEDUSTING FROM STONE SILO#2
315-08-232-01
SEE DWG No. 300-14-04-002 E-3

571-10-321-01
FAN
CAP.: 2,000 ACFM
MOTOR: H.P.

571-09-312-01
BAG FILTER
CAP.: 2,000 ACFM

571-11-391-01
DOUBLE COUNTERWEIGHT
VALVE M.O.

572-01-232-01
CLINKER SILO #1
(#1 FINISH MILL)
CAP.:1,700 ST.

SEE DRAWING 600-14-01-001

REVISIONS			
No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER
REFERENCE DRAWING		

PRELIMINARY
DRAWING IN PROCESS
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DATE: 04-JUNE-2018

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT:

PLANT:

PROJECT No.
NAME:

TITLE:

CLINKER STORAGE AND TRANSPORT SYSTEM FLOW DIAGRAM

DRAWN:	R.M.A.	DATE: 30/APR/018
CHECKED:	J.A.T.	DATE: 30/APR/018
APPROVED:	G.B.R.	DATE:
ACOTS:	NONE	SCALE: 1:1

DRAWING No. 570-14-01-001
REV.No. B

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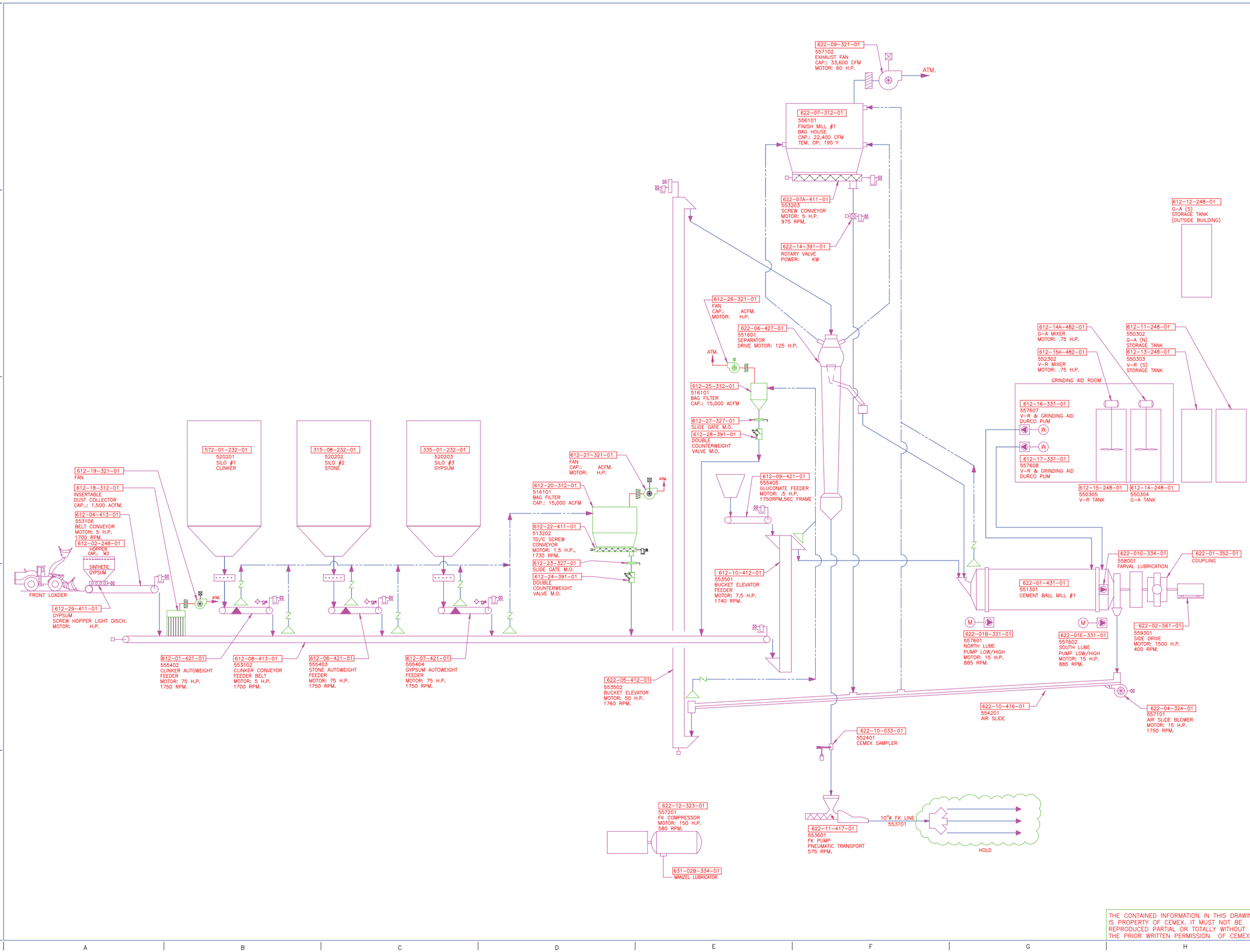
FILE: 570-14-04-001_B.dwg
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
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DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No. XXXXXXXXXX

NAME: KILN 4

TITLE:

#1 FINISH MILL AND ADDITIVES FEEDING HOPPER FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 30/APR/018
CHECKED: J.A.T.	DATE: 30/APR/018
APPROVED: G.B.R.	DATE:
ACOTS: .	SCALE: 1:1

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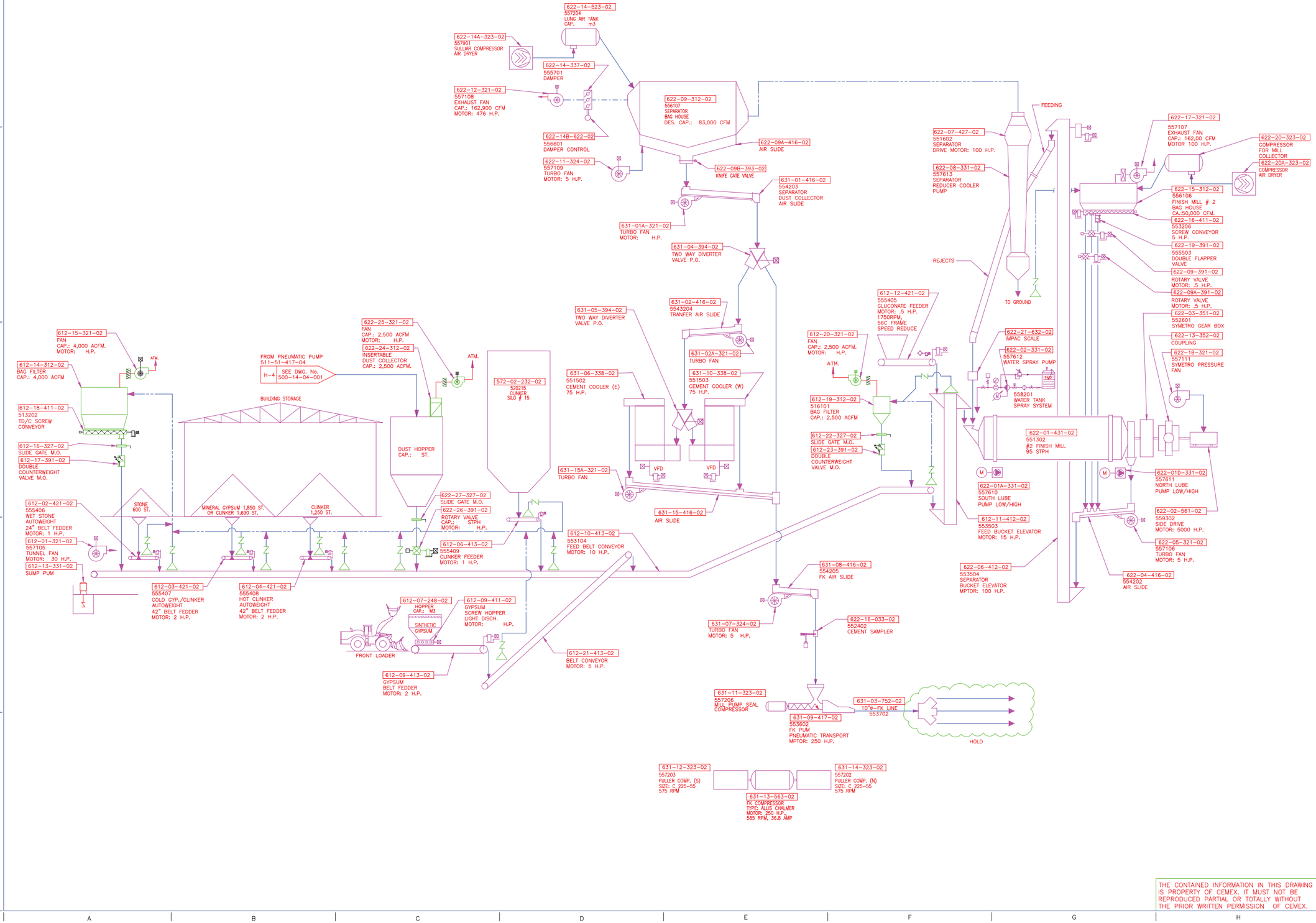
DRAWING No.	REV.No.
600-14-01-001	B

FILE: 600-14-01-001_#1 FI
PRINT DATE: 06/06/2018



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No.	DATE	DESCRIPTION	BY

DRAWING No.	TITLE	SUPPLIER

REFERENCE DRAWING

PRELIMINARY

DRAWING IN PROCESS
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DATE:

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE:04/JUNE/018	DATE:

CEMEX

GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No. XXXXXXXXXX

NAME: KILN 4

TITLE:

#2 FINISH MILL AND ADDITIVES FEEDING HOPPER FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 30/APR/018	
CHECKED: J.A.T.	DATE: 30/APR/018	
APPROVED: G.B.R.	DATE:	
ACOTS: .	SCALE: 1:1	

DRAWING No. 600-14-02-001

REV.No. B

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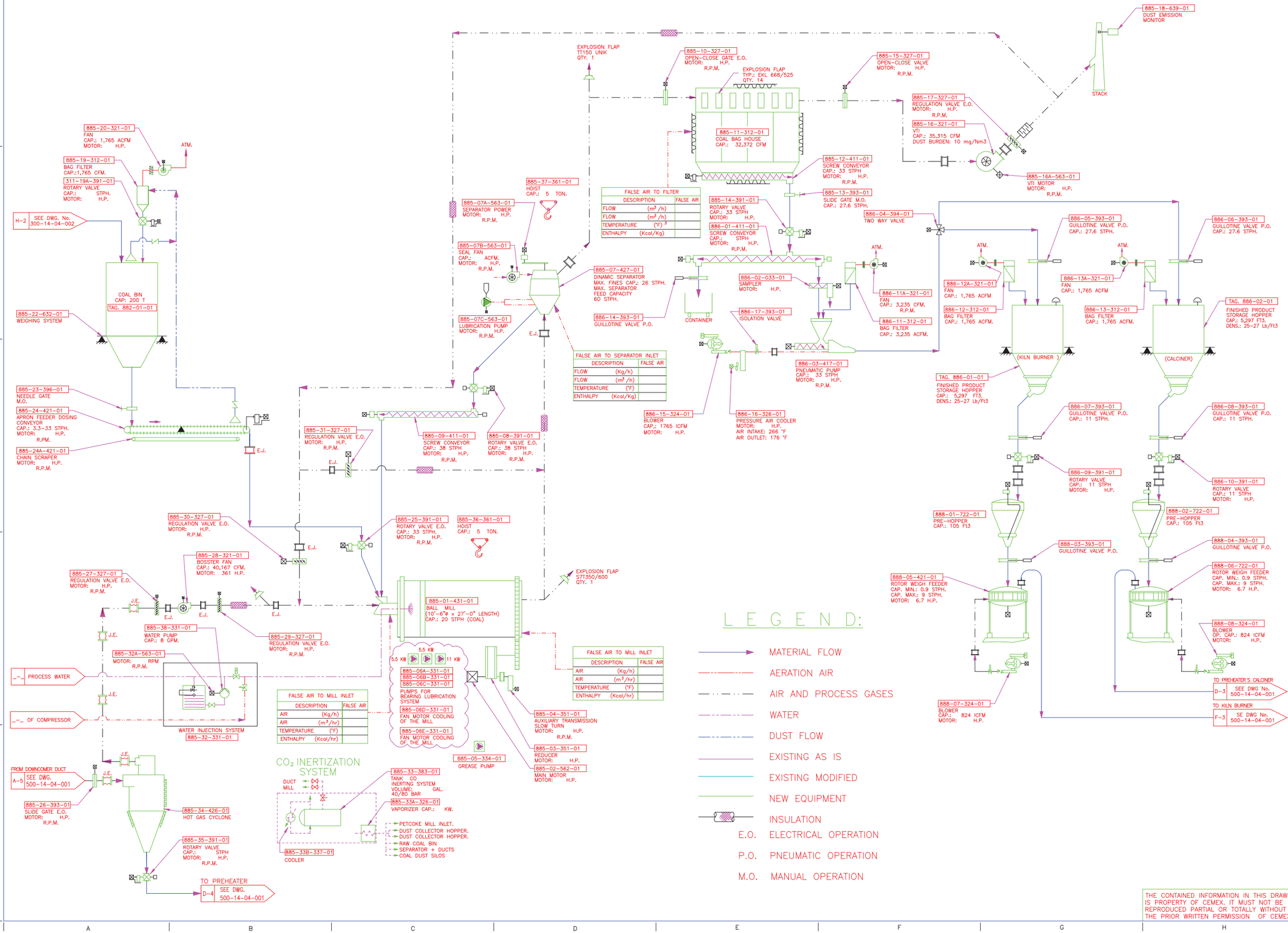
FILE: 600-14-02-001_#2 F
PRINT DATE: 06/06/2018



REVISIONS

No.	DATE	DESCRIPTION	BY

DRAWING No. | TITLE | SUPPLIER

REFERENCE DRAWING

PRELIMINARY
DRAWING IN PROCESS
USE ONLY AS REFERENCE
DATE: 04-JUNE-2018

CEMEX

CHECKED	APPROVED
BY: J.A.T.	BY: M.Q.A.
DATE: 04/JUNE/018	DATE:

CEMEX
GLOBAL OPERATIONS & TECHNICAL

CLIENT: CEMEX USA

PLANT: WAMPUM

PROJECT No.
NAME: #4 KILN

TITLE:
COAL
GRINDING AND FEEDING

FLOW DIAGRAM

DRAWN: R.M.A.	DATE: 30/APR/018	
CHECKED: J.A.T.	DATE: 30/APR/018	
APPROVED: G.B.R.	DATE:	
ACOTS: NONE	SCALE: 1:1	
DRAWING No. 880-14-04-001	REV.No. B	

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FILE: 880-14-04-001_B.dwg
PRINT DATE: 06/06/2018

ATTACHMENT 4 PROOF AND COPIES OF MUNICIPAL NOTIFICATIONS

POWER ENGINEERS, INC.
10440 LITTLE PATUXENT PARKWAY
SUITE 750
COLUMBIA, MD 21044 USA

PHONE 410-312-7900
FAX 410-312-7901

December 9, 2019

CERTIFIED MAIL NO.: 94071108987650496859 57

Lawrence County Board of Commissioners
Lawrence County Government Center
430 Court Street
New Castle, PA 16101-3503

Subject: CEMEX Construction Materials Atlantic, LLC – Wampum Cement Plant
Notification: PADEP Air Quality Plan Approval Application

Dear Board of Commissioners:

On behalf of CEMEX Construction Materials Atlantic, LLC (CEMEX), POWER Engineers, Inc. is providing this notification that CEMEX is submitting a Plan Approval Application to the Pennsylvania Department of Environmental Protection (PADEP) Air Quality Program for the reactivation of CEMEX's Wampum Cement Plant located at 2001 Portland Park, Wampum, PA 16157. The reactivation project includes the installation and operation of a new, modern 5-stage preheater/precalciner kiln with state-of-the-art emissions controls, a new clinker cooler, and various ancillary equipment; and the conversion of an existing raw mill to a coal mill. Various existing material handling, storage, and ancillary equipment will be refurbished for use. The facility's three (3) existing long, dry kilns will be dismantled and removed from the facility.

Section 1905-A of The Administrative Code of 1929 (71 P.S. §510-5), commonly referred to as Act 14, and Pennsylvania Code Title 25 (Environmental Protection - Air Resources) Section 127.43a require CEMEX to notify Lawrence County and Wampum Borough of the submission of the Plan Approval Application and advise you of the opportunity to comment on the application. There is a 30-day comment period which begins upon your receipt of this notice. Comments must be submitted in writing to PADEP within 30 days of receipt of this notification and should be sent to David G. Balog, P.E., New Source Review Section Chief, Pennsylvania Department of Environmental Protection, Northwest Regional Office, 230 Chestnut Street, Meadville, PA 16335 (phone: 814-332-6328).

Should you have any questions or require additional information, please contact Ms. Kori J. Andrews of CEMEX at 502-377-2973. Thank you for your attention to this notification.

Sincerely,

Jennifer Sharp Seinfeld

Jennifer Sharp Seinfeld
Client Services Manager/Department Manager

c: Ms. Kori J. Andrews, CEMEX Corporate Environmental Manager

Certified Mail Electronic Delivery Confirmation™

Reference	150266.01.01 CEMEX Wampum
USPS #	940711089876504968595 7
USPS Mail Class	Certified with Electronic Delivery Confirmation
USPS Status	Your item was delivered to an individual at the address at 10:52 am on December 13, 2019 in NEW CASTLE, PA 16101.
USPS History	Out for Delivery, 12/13/2019, 7:10 am, NEW CASTLE, PA 16101 Arrived at Unit, December 13, 2019, 3:51 am, NEW CASTLE, PA 16108 Departed USPS Regional Facility, December 12, 2019, 8:13 pm, PITTSBURGH PA DISTRIBUTION CENTER Arrived at USPS Regional Destination Facility, 12/12/2019, 11:58 am, PITTSBURGH PA DISTRIBUTION CENTER Departed USPS Regional Origin Facility, December 12, 2019, 1:23 am, BALTIMORE MD DISTRIBUTION CENTER Arrived at USPS Regional Origin Facility, 12/12/2019, 12:37 am, BALTIMORE MD DISTRIBUTION CENTER Accepted at USPS Origin Facility, December 11, 2019, 11:22 pm, COLUMBIA, MD 21044 Shipping Label Created, USPS Awaiting Item, December 9, 2019, 4:00 pm, COLUMBIA, MD 21044

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Date Verified: 01/14/2020 (UTC)

POWER ENGINEERS, INC.
10440 LITTLE PATUXENT PARKWAY
SUITE 750
COLUMBIA, MD 21044 USA

PHONE 410-312-7900
FAX 410-312-7901

December 9, 2019

CERTIFIED MAIL NO.: 94071108987650496862 37

Wampum Borough Council
Wampum Borough Office
PO Box 65
Wampum, PA 16157

Subject: CEMEX Construction Materials Atlantic, LLC – Wampum Cement Plant
Notification: PADEP Air Quality Plan Approval Application

Dear Borough Council Members:

On behalf of CEMEX Construction Materials Atlantic, LLC (CEMEX), POWER Engineers, Inc. is providing this notification that CEMEX is submitting a Plan Approval Application to the Pennsylvania Department of Environmental Protection (PADEP) Air Quality Program for the reactivation of CEMEX's Wampum Cement Plant located at 2001 Portland Park, Wampum, PA 16157. The reactivation project includes the installation and operation of a new, modern 5-stage preheater/precalciner kiln with state-of-the-art emissions controls, a new clinker cooler, and various ancillary equipment; and the conversion of an existing raw mill to a coal mill. Various existing material handling, storage, and ancillary equipment will be refurbished for use. The facility's three (3) existing long, dry kilns will be dismantled and removed from the facility.

Section 1905-A of The Administrative Code of 1929 (71 P.S. §510-5), commonly referred to as Act 14, and Pennsylvania Code Title 25 (Environmental Protection - Air Resources) Section 127.43a require CEMEX to notify Lawrence County and Wampum Borough of the submission of the Plan Approval Application and advise you of the opportunity to comment on the application. There is a 30-day comment period which begins upon your receipt of this notice. Comments must be submitted in writing to PADEP within 30 days of receipt of this notification and should be sent to David G. Balog, P.E., New Source Review Section Chief, Pennsylvania Department of Environmental Protection, Northwest Regional Office, 230 Chestnut Street, Meadville, PA 16335 (phone: 814-332-6328).

Should you have any questions or require additional information, please contact Ms. Kori J. Andrews of CEMEX at 502-377-2973. Thank you for your attention to this notification.

Sincerely,

Jennifer Sharp Seinfeld

Jennifer Sharp Seinfeld
Client Services Manager/Department Manager

c: Ms. Kori J. Andrews, CEMEX Corporate Environmental Manager

Certified Mail Electronic Delivery Confirmation™

Reference	150266.01.01 CEMEX Wampum
USPS #	9407110898765049686237
USPS Mail Class	Certified with Electronic Delivery Confirmation
USPS Status	Your item was delivered at 10:50 am on December 16, 2019 in WAMPUM, PA 16157.
USPS History	Available for Pickup, 12/13/2019, 4:28 pm, WAMPUM, PA 16157 Arrived at Unit, December 13, 2019, 4:28 pm, WAMPUM, PA 16157 In Transit to Next Facility, 12/13/2019 Departed USPS Regional Facility, December 12, 2019, 8:13 pm, PITTSBURGH PA DISTRIBUTION CENTER Arrived at USPS Regional Destination Facility, 12/12/2019, 11:21 am, PITTSBURGH PA DISTRIBUTION CENTER Departed USPS Regional Origin Facility, December 12, 2019, 1:25 am, BALTIMORE MD DISTRIBUTION CENTER Arrived at USPS Regional Origin Facility, 12/12/2019, 12:33 am, BALTIMORE MD DISTRIBUTION CENTER Accepted at USPS Origin Facility, December 11, 2019, 11:18 pm, COLUMBIA, MD 21044 Shipping Label Created, USPS Awaiting Item, December 9, 2019, 4:04 pm, COLUMBIA, MD 21044

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ATTACHMENT 5 RBLC SUMMARY

RBLC LISTING OF NOx EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary NOx Limit	NOx Limit Unit	Averaging Time or Condition	Secondary NOx Limit	NOx Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis	Pollutant Compliance Notes
IN-0312	LEHIGH CEMENT COMPANY LLC	6/27/2019	Kiln	natural gas, coal, coke, Fuel oils	7716	tons clinker/day	1.5	LB/TON CLINKER	30-DAY ROLLING AVERAGE	0			low NOx burners and selective non-catalytic reduction (SNCR)	BACT-PSD	
*KS-0031	ASH GROVE CEMENT COMPANY	07/14/2017	Portland Cement Manufacturing (kilns, mills, clinker cooler, conveyors)	coal and/or petroleum coke, etc.	826.2	MMBTU/H	2623	TONS/YEAR	GODD COMBUSTION PRACTICES (GCP)	0			Fabric filters are specified in the PSD permit.	OTHER CASE-BY-CASE	Emission limits for sulfur oxides (SO2) and oxides of nitrogen (NOx) are also established as permit conditions at 1,037 and 2,623 tons per year, respectively. These emission limits are established as permit conditions to ensure that emissions from the proposed modifications do not result in a net emissions increase above the significance levels listed in 40 CFR 52.21(b)(23).
TX-0822	CEMENT PLANT (Capitol Aggregates)	06/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	1.5	LB/TON	30-DAY AVERAGE	0			Good combustion practices, SNCR	BACT-PSD	NSPS F, MACT LLL
GA-0136	CEMEX SOUTHEAST, LLC	01/27/2010	MAIN KILN STACK K218	COAL	270	T/H OF DRY FEED	1.95	LB/T CLINKER	30-DAY ROLLING AVG. BASED ON NOX CEMS	312	LB/H		STAGED & CONTROLLED COMBUSTION (SCC), SNCR, LOW NOx BURNER AND INDIRECT FIRING.	BACT-PSD	

* Denotes draft determination

RBLC LISTING OF SOx EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary SOx Limit	SOx Limit Unit	Averaging Time or Condition	Secondary SOx Limit	SOx Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis	Pollutant Compliance Notes
*KS-0031	ASH GROVE CEMENT COMPANY	07/14/2017	Portland Cement Manufacturing (kilns, mills, clinker cooler, conveyors)	coal and/or petroleum coke, etc.	826.2	MMBTU/H	1037	TONS/YEAR	GOOD COMBUSTION PACTICES (GCP)	0			Fabric filters are specified in the PSD permit.	OTHER CASE-BY-CASE	Emission limits for sulfur oxides (SO2) and oxides of nitrogen (NOx) are also established as permit conditions at 1,037 and 2,623 tons per year, respectively. These emission limits are established as permit conditions to ensure that emissions from the proposed modifications do not result in a net emissions increase above the significance levels listed in 40 CFR 52.21(b)(23).
TX-0822	CEMENT PLANT (Capitol Ag	06/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	0.4	LB/TON	30-DAY AVERAGE	0			GOOD COMBUSTION PRACTICES	BACT-PSD	
GA-0136	CEMEX SOUTHEAST, LLC	01/27/2010	MAIN KILN STACK K218	COAL	270	T/H OF DRY FEED	1	LB/T CLINKER	30-DAY ROLLING AVG.	160	LB/H		JUDICIOUS SELECTION/USE OF RAW MATERIALS AND , AS NECESSARY, USE OF HYDRATED LIME INJECTION.	BACT-PSD	

* Denotes draft determination

RBLC LISTING OF CO EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary CO Limit	CO Limit Unit	Averaging Time or Condition	Secondary CO Limit	CO Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis	Pollutant Compliance Notes
IN-0312	LEHIGH CEMENT COMPANY LLC	6/27/2019	Kiln	natural gas, coal, coke, Fuel oils	7716	tons clinker/day	1.4	LB/TON CLINKER	12-MONTH ROLLING AVERAGE	0			Good Combustion Practices	BACT-PSD	
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Kiln No. 3	COAL	3300	TON CLINKER/DAY	1.5	LB/TON CLINKER	30-DAY AVERAGE	0			Good combustion practices	BACT-PSD	NSPS F, MACT LLL
*KS-0031	ASH GROVE CEMENT COMPANY	07/14/2017	Portland Cement Manufacturing (kilns, mills, clinker cooler, conveyors)	coal and/or petroleum coke, etc.	826.2	MMBTU/H	1169	TONS/YEAR	GOOD COMBUSTION PRACTICES (GCP)	0			Fabric filters are specified in the PSD permit.	BACT-PSD	The emission limit for carbon monoxide consists of a 5,000 pound per hour 8-hour block average limit combined with a 1,169 ton per year annual emission limit. The 8-hour block average limit shall be monitored continuously and a value generated 3 times daily. The annual emission limits for carbon monoxide, sulfur oxides and oxides of nitrogen are the sum of 12 consecutive one month averages, updated monthly.
TX-0822	CEMENT PLANT (Capitol Aggregates	06/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	3	LB/TON	ANNUAL AVERAGE	0			Good combustion practices, preheater on kiln	BACT-PSD	
TX-0821	ALAMO CEMENT 1604 PLANT	06/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	2	LB/TON	CLINKER HOURLY AVERAGE	1.67	LB/TON	CLINKER, ANNUAL AVG	GOOD COMBUSTION PRACTICES	BACT-PSD	
*MO-0088	CONTINENTAL CEMENT COMPANY, LLC	1/18/2017	dry kiln, preheater, precalciner		0		6	LB/T	CLINKER 30 DAY ROLLING, INCLUSIVE OF SSM	0			good combustion	BACT-PSD	
NY-0115	LAFARGE RAVENA PLANT	12/9/2014	Dry process kiln	coal	0		2.5	LB/T	30 D	0				BACT-PSD	2.5 LB/T of clinker
TX-0639	CEMEX BALCONES PLANT	10/08/2013	Cement manufacturing	natural gas, coal, pet coke	3960	tons per day	1.38	LB/TON CLINKER	12-MONTH ROLLING AVERAGE	0			proper combustion unit design and good combustion practices	BACT-PSD	
GA-0136	CEMEX SOUTHEAST, LLC	01/27/2010	MAIN KILN STACK K218	COAL	270	T/H OF DRY FEED	2.9	LB/T CLINKER	30-DAY ROLLING AVG. BASED ON CO CEMS	464	LB/H		PROPER EQUIPMENT DESIGN AND GOOD COMBUSTION OPERATING PRACTICE	BACT-PSD	

* Denotes draft determination

RBLC LISTING OF VOC EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary VOC Limit	VOC Limit Unit	Averaging Time or Condition	Secondary VOC Limit	VOC Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis	Pollutant Compliance Notes
IN-0312	LEHIGH CEMENT COMPANY LLC	6/27/2019	Kiln	natural gas, coal, coke, Fuel oils	7716	tons clinker/day	0.12	LB/TON CLINKER	12-MONTH ROLLING AVERAGE	0			Good Combustion Practices	BACT-PSD	
TX-0822	CEMENT PLANT (Capitol Aggregates)	06/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	0.5	LB/TON	30-DAY AVERAGE	0			Good combustion practices, preheater on kiln	BACT-PSD	MACT LLL
TX-0821	ALAMO CEMENT 1604 PLANT	06/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	0.1	LB/TON	CLINKER, HOURLY AVG	0.08	LB/TON	CLINKER, ANNUAL AVG	Good combustion practices, preheater on kiln	BACT-PSD	MACT LLL 24 PPMVD THC
FL-0357	SUWANNEE AMERICAN CEMENT, BRANFORD CEMENT PLANT	12/01/2015	Portland Cement Manufacturing	Bituminous Coal / Petcoke	160320	Tons Per Year	0.15	LB VOC/TON CLINKER	30-DAY ROLLING AVERAGE	24	PPMVD THC @ 7% O2	30-DAY ROLLING AVERAGE	Good Combustion Practices	BACT-PSD	
CO-0074	RIO GRANDE CEMENT PLANT	07/09/2012	Kiln		349	MMBTU/H	0.149	LB/TON CLINKER	12-MONTH ROLLING AVE	0			Good combustion practices and selective quarrying of the limestone raw material	BACT-PSD	
GA-0136	CEMEX SOUTHEAST, LLC	01/27/2010	MAIN KILN STACK K218	COAL	270	T/H OF DRY FEED	0.5	LB/T CLINKER	30-DAY ROLLING AVG. BASED ON THE CEMS	80	LB/H		JUDICIOUS SELECTION/USE OF RAW MATERIALS	BACT-PSD	
*CO-0071	HOLCIM PORTLAND PLANT	10/15/2009	Cement clinkering system		1873898	tons clinker per year	0.5	LB/TON	12-MONTH ROLLING AVE	0			Selective mining of raw materials to optimize organic carbon input and Good Combustion Practices. Good Combustion Practices constitute monitoring and control of several operating parameters. These parameters include, but are not limited to, fuel flow rate, primary and secondary air flows, carbon monoxide concentration in the flue gas, and level of excess air. All relevant parameters and their nominal operating ranges for various combustion devices shall be identified, and included in the required operating and maintenance plan.	BACT-PSD	

* Denotes draft determination

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
KILNS																
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Kiln No. 3	COAL	3300	TON CLINKER/DAY	Particulate matter, filterable (FPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0.02	LB/TON CLINKER	30-DAY AVERAGE	NSPS F, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Kiln No. 3	COAL	3300	TON CLINKER/DAY	Particulate matter, filterable; 10µ (FPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Kiln No. 3	COAL	3300	TON CLINKER/DAY	Particulate matter, filterable; 2.5µ (FPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GF/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Maintenance, Startup, and Shutdown		0		Particulate matter, total (TPM)	BAGHOUSE, WORK PRACTICES	0.01	GR/DSCF		BACT-PSD	0			MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Maintenance, Startup, and Shutdown		0		Particulate matter, total; 10µ (TPM10)	BAGHOUSE, WORK PRACTICES	0.01	GR/DSCF		BACT-PSD	0			MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Maintenance, Startup, and Shutdown		0		Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE, WORK PRACTICES	0.01	GR/DSCF		BACT-PSD	0			MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0.02	LB/TON		MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0.02	LB/TON		MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0.02	LB/TON		MACT LLL
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, Y
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	Particulate matter, filterable; 10µ (FPM10)	BAGHOUSE	0.02	GR/DSCF		BACT-PSD	0			NSPS F, Y
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	Particulate matter, filterable; 2.5µ (FPM2.5)	BAGHOUSE	0.02	GR/DSCF		BACT-PSD	0			NSPS F, Y
TX-0736	MIDLOTHIAN PORTLAND CEMENT PLANT	5/12/2015	Oxidation Control for Portland Cement Kilns	natural gas	1.34	million short tons clinker production per year per kiln	Particulate matter, total (TPM)	Wet Scrubbers, Continuous Opacity Monitoring, Proper operation of Oxidation Control Units	0.23	LB/TON CLINKER		MACT	0			Facility is required to meet filterable PM limits in MACT Subpart LLL (which is shown as Emission Limit 1)
TX-0736	MIDLOTHIAN PORTLAND CEMENT PLANT	5/12/2015	Oxidation Control for Portland Cement Kilns	natural gas	1.34	million short tons clinker production per year per kiln	Particulate matter, total; 10µ (TPM10)	Wet Scrubbers, Continuous Opacity Monitoring, Proper operation of Oxidation Control Units	0.23	LB/TON CLINKER		MACT	0			Facility is required to meet filterable PM limits in MACT Subpart LLL (which is shown as Emission Limit 1)
TX-0736	MIDLOTHIAN PORTLAND CEMENT PLANT	5/12/2015	Oxidation Control for Portland Cement Kilns	natural gas	1.34	million short tons clinker production per year per kiln	Particulate matter, total; 2.5µ (TPM2.5)	Wet Scrubbers, Continuous Opacity Monitoring, Proper operation of Oxidation Control Units	0.23	LB / TON CLINKER		MACT	0			Facility is required to meet filterable PM limits in MACT Subpart LLL (which is shown as Emission Limit 1)

RBLC LISTING OF PM/PM10/PM2.5 EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
CO-0074	RIO GRANDE CEMENT PLANT	7/9/2012	Kiln		349	MMBTU/H	Particulate matter, total; 10µ (TPM10)	fabric filters	0.58	LB/TON CLINKER	12-MONTH ROLLING AVE	BACT-PSD	0			a. Emissions of particulate matter shall be controlled by high temperature filter media dust collector. The concentration of filterable particulate matter in the dust collector outlet shall not exceed 0.01 grain per dry standard cubic foot. b. Emissions of condensable particulate matter shall be minimized by quarry management practices and by chemical absorption of the condensable particulate matter in the kiln system. Total PM10 emissions (combined filterable and condensable) shall not exceed the BACT limit of 0.58 lb per ton of clinker produced on a rolling 12 month average.
GA-0136	CEMEX SOUTHEAST, LLC	1/27/2010	MAIN KILN STACK K218	COAL	270	T/H OF DRY FEED	Particulate matter, filterable (FPM)	FABRIC FILTERS/BAGHOUSE	0.153	LB/T PM CLINKER	AVG. OF THREE 1-HR RUNS/METH. 5	BACT-PSD	0.129	LB/T PM10 CLINKER	METH. 201 OR 201A AND 202	ADDITIONAL 0.129 EMISSION LIMIT AND LB/T PM10 CLINKER WITH A CONDITION SET WITH METHOD 201 OR 201A AND 202.

RBLC LISTING OF H2SO4 EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary H2SO4 Limit	H2SO4 Limit Unit	Averaging Time or Condition	Secondary H2SO4 Limit	Secondary H2SO4 Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis	Pollutant Compliance Notes
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	1.38	LB/TON	HOURLY AVERAGE	0.203	LB/TON	ANNUAL AVERAGE	GOOD COMBUSTION PRACTICES	BACT-PSD	
TX-0736	MIDLOTHIAN PORTLAND CEMENT PLANT	5/12/2015	Oxidation Control for Portland Cement Kilns	natural gas	1.34	million short tons clinker production per year per kiln	0.11	LB/TON CLINKER		0			Low sulfur fuels, Wet scrubbers	BACT-PSD	

RBLC LISTING OF CO2e EMISSION LIMITS FOR PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Primary CO2e Limit	CO2e Limit Unit	Averaging Time or Condition	Secondary CO2e Limit	Secondary CO2e Limit Unit	Averaging Time or Condition	Control Method(s)	Case-By-Case Basis
IN-0312	LEHIGH CEMENT COMPANY LLC	6/27/2019	Kiln	natural gas, coal, coke, Fuel oils	7716	tons clinker/day	0.97	TON CO2E/TON CLINKER	12-MONTH ROLLING AVERAGE BASIS	0				BACT-PSD
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Kiln No. 3	COAL	3300	TON CLINKER/DAY	0.92	TON/TON CLINKER	ANNUAL AVERAGE	0			Good combustion practices ANNUAL CEMS RATA	BACT-PSD
TX-0822	CEMENT PLANT (Capitol Aggregates)	06/30/2017	Portland Cement Kiln - Kiln KL-870	coal	1606000	T/YR	0.97	TON/TON	ANNUAL AVERAGE	0			GOOD COMBUSTION PRACTICES	BACT-PSD
TX-0821	ALAMO CEMENT 1604 PLANT	06/13/2017	Portland Cement Kiln No. 2	coal	1277500	T/YR	0.961	TON/TON CLINKER		0			GOOD COMBUSTION PRACTICES	BACT-PSD
NY-0115	LAFARGE RAVENA PLANT	12/9/2014	Dry process kiln	coal	0		1900	LB/T	12 MO	0				BACT-PSD
CO-0074	RIO GRANDE CEMENT PLANT	07/09/2012	Kiln		349	MMBTU/H	0.95	TON/TON CLINKER	12-MONTH ROLLING AVE	0			1) Continued use of the modern cement process design including the preheater/precalciner kiln system, 2) Continued use of high energy-efficient equipment systems, and 3) Continued implementation of a sustainability program to reduce overall GHG emissions with the use of new additives, raw materials and fuels consistent with availability and cost while maintaining the quality of the cement product manufactured.	BACT-PSD

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
CLINKER COOLER																
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GF/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Portland Cement Kiln, Clinker Conveying and Storage, Material Handling	coal	1320000	T / YR	Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Clinker Cooler KC-900		1606000	T/YR	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Clinker Cooler KC-900		1606000	T/YR	Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, MACT LLL
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Clinker Cooler KC-900		1606000	T/YR	Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS F, MACT LLL

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
FINISH MILLS																
*TX-0860	CEMENT PLANT	6/21/2019	Finish Mill #7 Material Transfers		0		Particulate matter, filterable; 10µ (FPM10)	BAGHOUSE	0.005	GR/DSCF		BACT-PSD	0			NSPS F, Y, OOO, MACT LLL
*TX-0860	CEMENT PLANT	6/21/2019	Finish Mill #7 Material Transfers		0		Particulate matter, filterable; 2.5µ (FPM2.5)	BAGHOUSE	0.005	GR/DSCF		BACT-PSD	0			NSPS F, Y, OOO, MACT LLL
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Finish Mill #3 Heater		0		Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			LLL
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Finish Mill #3 Heater		0		Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			LLL
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	Finish Mill #3 Heater		0		Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			LLL
GA-0136	CEMEX SOUTHEAST, LLC	1/27/2010	FINISHING MILL		220	T/H OF CEMENT	Particulate matter, fugitive		0.01	GR/DSCF	AVG. OF THREE 1-HR RUNS/METH.5	BACT-PSD	0.0085	GR/DSCF	METHOD 201 OR 201A AND 202	
MATERIAL HANDLING																
*TX-0860	CEMENT PLANT	6/21/2019	MATERIAL TRANSFER		0		Particulate matter, total; 10µ (TPM10)	PARTIAL ENCLOSURE & WET MATERIAL	0			BACT-PSD	0			NSPS F, Y, OOO, MACT LLL
*TX-0860	CEMENT PLANT	6/21/2019	MATERIAL TRANSFER		0		Particulate matter, total; 2.5µ (TPM2.5)	PARTIAL ENCLOSURE & WET MATERIAL	0			BACT-PSD	0			NSPS F, Y, OOO, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Material Handling, Transport, and Transfer Sources		3300	TON CLINKER/DAY	Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Material Handling, Transport, and Transfer Sources		3300	TON CLINKER/DAY	Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Portland Cement Kiln: Material Handling, Transport, and Transfer Sources		3300	TON CLINKER/DAY	Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			NSPS OOO, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Raw Material Handling Operations and Storage Piles		1000	TON/H	Particulate matter, total (TPM)	Water sprays and full or partial enclosure	0			BACT-PSD	0			NSPS OOO, Y, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Raw Material Handling Operations and Storage Piles		1000	TON/H	Particulate matter, total; 10µ (TPM10)	Water sprays and full or partial enclosure	0			BACT-PSD	0			NSPS OOO & Y, MACT LLL
TX-0831	PORTLAND CEMENT PLANT	12/6/2017	Raw Material Handling Operations and Storage Piles		1000	TON/H	Particulate matter, total; 2.5µ (TPM2.5)	Water sprays and full or partial enclosure	0			BACT-PSD	0			NSPS OOO & Y, MACT LLL
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Non-metallic mineral processing, Raw material handling operations and storage piles		0		Particulate matter, total (TPM)	WATER SPRAYS AND FULL/PARTIAL ENCLOSURES	0			BACT-PSD	0			NSPS OOO
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Non-metallic mineral processing, Raw material handling operations and storage piles		0		Particulate matter, total; 10µ (TPM10)	WATER SPRAYS AND FULL/PARTIAL ENCLOSURES	0			BACT-PSD	0			NSPS OOO
TX-0828	PORTLAND CEMENT PLANT	11/7/2017	Non-metallic mineral processing, Raw material handling operations and storage piles		0		Particulate matter, total; 2.5µ (TPM2.5)	WATER SPRAYS, FULL/PARTIAL ENCLOSURES	0			BACT-PSD	0			NSPS OOO
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Raw Material Handling Operations and Storage Piles		0		Particulate matter, total (TPM)	WATER SPRAYS AND ENCLOSURES	0			BACT-PSD	0			
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Raw Material Handling Operations and Storage Piles		0		Particulate matter, total; 10µ (TPM10)	WATER SPRAYS AND ENCLOSURES	0			BACT-PSD	0			

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Raw Material Handling Operations and Storage Piles		0		Particulate matter, total; 2.5µ (TPM2.5)	WATER SPRAYS AND ENCLOSURES	0			BACT-PSD	0			
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Material Handling, Transport, and Transfer Sources		0		Particulate matter, total (TPM)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Material Handling, Transport, and Transfer Sources		0		Particulate matter, total; 10µ (TPM10)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	Material Handling, Transport, and Transfer Sources		0		Particulate matter, total; 2.5µ (TPM2.5)	BAGHOUSE	0.01	GR/DSCF		BACT-PSD	0			
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	RAW MATERIAL HANDLING		155	T/HR	Particulate matter, total; 10µ (TPM10)	WATER SPRAYS, PARTIAL ENCLOSURE	0			BACT-PSD	0			NSPS Y, OOO
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	RAW MATERIAL HANDLING		155	T/HR	Particulate matter, total; 2.5µ (TPM2.5)	WATER SPRAYS, ENCLOSRE	0			BACT-PSD	0			NSPS Y, OOO
TX-0821	ALAMO CEMENT 1604 PLANT	6/13/2017	RAW MATERIAL HANDLING		155	T/HR	Particulate matter, fugitive	Water sprays and full or partial enclosure	0			BACT-PSD	0			NSPS Y, OOO
CO-0074	RIO GRANDE CEMENT PLANT	7/9/2012	Material processing & transfer		0		Particulate matter, filterable; 10µ (FPM10)	Plant Fabric filters combined with enclosed transfer points was selected as BACT. Quarry The combination of high material moisture content and partial enclosure was selected as BACT.	0.005	GR/DSCF		BACT-PSD	0			
MO-0080	HOLCIM (US) INC. - LEE ISLAND	5/5/2009	Raw Material Handling		0		Particulate matter, fugitive	Certain limestone emission units such as drilling, loading/unloading to storage pile, crushing are impractical to capture the emissions. Some emission points have inherent moisture control and/or enclosures.	0			BACT-PSD	0			(RBLC Note: Local Agency has selected None for the Control Method Code, however, if None is selected the description field must be empty. RBLC change the None to Pollution Prevention (PP) so the text in the description field was not lost. A copy of it is also seen below. Also, based on the text the Pollution Prevention label does apply. The text inclues the sentance Some emission points have inherent moisture control and/or enclosures. This qualifies as PP.) ========== Certain limestone emission units such as drilling, loading/unloading to storage pile, crushing are impractical to capture the emissions. Some emission points have inherent moisture control and/or enclosures.
MO-0080	HOLCIM (US) INC. - LEE ISLAND	5/5/2009	Raw Material Handling		0		Particulate matter, filterable (FPM)		0.0065	GR/DSCF	TEST METHOD AVERAGE	BACT-PSD	0			

RBLC ID	Company-Facility	Permit Date	Unit Type	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Particulate Emission Limit	Particulate Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Particulate Limit	Secondary Particulate Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
STORAGE PILES																
CO-0074	RIO GRANDE CEMENT PLANT	7/9/2012	Storage Piles		0		Particulate matter, filterable; 10µ (FPM10)	Plant storage: BACT is determined to be use of enclosure (covering the storage pile with tarps) Quarry storage: BACT is determined to be use of the inherent moisture content supplemented with water application as needed.	0			BACT-PSD	0			
ROADS																
CO-0074	RIO GRANDE CEMENT PLANT	7/9/2012	Haul roads		0		Particulate matter, filterable; 10µ (FPM10)	Plant roads: since almost all plant roads are already paved and are actively swept, BACT was determined to be paved and swept roads. Emissions from unpaved roads shall be controlled by applying water as needed. Quarry roads: The combination of inherent moisture content supplemented by water application as needed was determined to be BACT for the quarry roads.	0			BACT-PSD	0			
MO-0080	HOLCIM (US) INC. - LEE ISLAND	5/5/2009	Paved and unpaved roads and storage piles		0		Particulate matter, fugitive	Surfactant spray or periodic water spray on quarry haul roads. The pavement of haul roads that is used to transport product out and bring raw material in. Installation of a truck washing station after the product loadout station to minimize off site dirt tracking. Enclosure of most storage piles. Enclosure doors will be closed while trucks are being unloaded.	0			BACT-PSD	0			

* Denotes draft determination

RBLC LISTING OF EMISSION LIMITS FOR EMERGENCY GENERATORS AT PORTLAND CEMENT PLANTS

RBLC ID	Company-Facility	Permit Date	Primary Fuel	Throughput	Throughput Unit	Pollutant	Control Method Description	Primary Emission Limit	Primary Limit Unit	Averaging Time or Condition	Case-By-Case Basis	Secondary Emission Limit	Secondary Emission Limit Unit	Secondary Averaging Time or Condition	Pollutant Compliance Notes
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Particulate matter, total (TPM)	GOOD COMBUSTION PRACTICES	0.02	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Particulate matter, total; 10µ (TPM10)	GOOD COMBUSTION PRACTICES	0.02	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Particulate matter, total; 2.5µ (TPM2.5)	GOOD COMBUSTION PRACTICES	0.02	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Carbon Dioxide Equivalent (CO2e)	GOOD COMBUSTION PRACTICES	115	LB/YR		BACT-PSD	0			
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES	0.23	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Carbon Monoxide	GOOD COMBUSTION PRACTICES	4.19	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Nitrogen Oxides (NOx)	GOOD COMBUSTION PRACTICES	0.48	LB/HR		BACT-PSD	0			NSPS IIII
TX-0822	CEMENT PLANT (Capitol Aggregates)	6/30/2017	DIESEL	0		Sulfur Dioxide (SO2)	GOOD COMBUSTION PRACTICES, FUEL REQUIREMENTS	0.01	LB/HR		BACT-PSD	0			

ATTACHMENT 6 EMISSIONS CALCULATIONS

CEMEX
Wampum Cement Plant
Kiln Emission Calculations

Basis

Tons of Clinker Produced/Year =	1,138,800	3,120	tons/day
Annual Hours of Operation =	8,760		

Kiln Exhaust Baghouse Exhaust Parameters

488,315	acfmw
14	wt% H20
9	wt% O2 (wet)
10.47	wt% O2 (dry)
465	°F
239,713	scfmd
14,382,751	scfhd

Source ID	Pollutant	Hourly Emission Factor	Annual Emission Factor	Emission Factor Units	Basis	Short Term Emissions (lb/hr) [3]	Annual Emissions (TPY)
263	PM condensable	0.160	0.160	lbs/ton of clinker	BACT	20.80	91.10
	PM filterable	0.02	0.02	lbs/ton of clinker	BACT, MACT LLL	2.60	11.39
	PM				***Total***	***23.40***	***102.49***
	PM_{10} condensable	0.160	0.160	lbs/ton of clinker	BACT	20.80	91.10
	PM_{10} filterable [1]	0.0168	0.0168	lbs/ton of clinker	BACT	2.18	9.57
	PM_{10}				***Total***	***22.98***	***100.67***
	$PM_{2.5}$ condensable	0.160	0.160	lbs/ton of clinker	BACT	20.80	91.10
	$PM_{2.5}$ filterable [2]	0.009	0.009	lbs/ton of clinker	BACT	1.17	5.12
	$PM_{2.5}$				***Total***	***21.97***	***96.23***
	NO_x	1.50	--	lbs/ton of clinker	LAER, BACT, NSPS F	195.00	854.10
	SO_2	0.40	0.40	lbs/ton of clinker	BACT, NSPS F	52.00	227.76
	VOC	0.10	0.08	lbs/ton of clinker	LAER, BACT	13.00	45.55
	CO	1.38	1.38	lbs/ton of clinker	BACT	179.40	785.77
	H_2SO_4	0.11	0.110	lbs/ton of clinker	BACT	14.30	62.63
	NH_3	65	11	ppmvd @ actual stack O_2	BAT	41.31	30.62
	HCl	3	3	ppmvd @ 7% O_2	MACT LLL	3.06	13.42
	Hg	21	21	lbs/MM ton of clinker	MACT LLL	0.0027	0.0120
	D/F	0.2	0.2	ng/dscm @7% O_2	MACT LLL	1.79E-08	7.86E-08
	THC	24	24	ppmvd @ 7% O_2	MACT LLL	29.58	129.58

[1] Total PM10 = 0.02 lb/ton clinker (filterable) * PM10 Fraction 84% (AP-42, Table 11.6-5)

[2] Total PM2.5 = 0.02 lb/ton clinker (filterable) * PM2.5 Fraction 45% (AP-42, Table 11.6-5)

[3] Limits based on 30 operating day rolling average

CEMEX
Wampum Cement Plant
Kiln GHG Emission Calculations

Basis

Tons of Clinker Produced/ Year =	1,138,800	3,120 tons/day
Annual Average Heat Input (MMBtu/ton of clinker) =	4.00	

	Bituminous Coal	
CO_2	93.28 kg/MMBtu	40 CFR Part 98 Table C-1
CH_4	0.011 kg/MMBtu	40 CFR Part 98 Table C-2
N_2O	0.0016 kg/MMBtu	40 CFR Part 98 Table C-2

Source ID	Pollutant	Emission Factor		Basis	Annual Emissions (tons/yr)
263	CO_2e	0.92	ton/ton of clinker	BACT	1,047,696

Kiln GHG Emissions During Clinker Production							
Source ID	Pollutant	Emission Factor (kg/MMBtu)	Maximum Heat Input (MMBtu/yr)	Short Term Emissions (lb/hr)	Annual Emissions (tons/yr)	Global Warming Potential	CO_2e (tons/yr)
263	CO_2 [3]	--		259,682	1,043,921	1	1,043,921
	CH_4	0.011	4,555,200	14	55.23	25	1,380.82
	N_2O	0.0016		2	8.03	298	2,394.09

CEMEX
Wampum Cement Plant
Clinker Cooler (exhausted through Kiln Stack)

Basis

Clinker Produced = 1,138,800 ton/yr 3,120 tons/day
Hours of Operation = 8,760 hr/yr

						Normal Production	
Source ID	**Description**	**Pollutant**	**Emission**	**Factor**	**Basis**	**Short Term Emissions (lb/hr)**	**Annual Emissions (tons/yr)**
264	Clinker Cooler	PM	0.02	lbs/ton of clinker	MACT LLL	2.60	11.39
		PM_{10} [1]	0.02	lbs/ton of clinker	BACT	2.60	11.39
		$PM_{2.5}$ [2]	6.3%	of PM_{10}	BACT	0.16	0.72

[1] Assume equal to PM

[2] Vol. 1, 5th Ed., AP-42, Table 11.6-6 for Uncontrolled Emission From Clinker Cooler

CEMEX
Wampum Cement Plant
PM Process Sources (Grain loading calculation methodology)

Basis **E (tpy) = FlowRate x EF x 60 min/hr ÷ 7000 grains/lb x 8760 ÷ 2000**

Source ID	Equipment Number	Area	Source Description	Status	Air Flow scfm	Uncontrolled [3]						Controlled						
						PM (lb/hr)	PM (tpy)	PM_{10} (lb/hr)	PM_{10} (tpy)	$PM_{2.5}$ (lb/hr)	$PM_{2.5}$ (tpy)	PM Emission Factor (gr/scf)	PM (lb/hr)	PM (tpy)	PM_{10} (lb/hr)	PM_{10} (tpy)	$PM_{2.5}$ (lb/hr)	$PM_{2.5}$ (tpy)
259	431-07-312-01	Raw Meal	Bag Filter	New	8,430	144.5	633.0	63.59	278.51	26.0	113.9	0.002	0.14	0.63	0.12	0.53	0.07	0.28
260	441-09-312-04	Homo silos	Bag Filter	New	12,870	485.4	2,126.0	213.57	935.43	87.4	382.7	0.0044	0.49	2.13	0.41	1.79	0.22	0.96
260	441-11-312-04	Homo silos	Insertable Bag Filter	New	9,440	356.0	1,559.4	156.65	686.13	64.1	280.7	0.0044	0.36	1.56	0.30	1.31	0.16	0.70
260	441-18-312-04	Homo silos	Bag Filter	New	7,290	274.9	1,204.2	120.97	529.86	49.5	216.8	0.0044	0.27	1.20	0.23	1.01	0.12	0.54
260	441-88-312-04	Homo silos	Bag Filter	New	7,510	128.7	563.9	56.65	248.11	23.2	101.5	0.002	0.13	0.56	0.11	0.47	0.06	0.25
265	511-54-312-04	Dust pump	Bag Filter	New	1,880	70.9	310.6	31.20	136.64	12.8	55.9	0.0044	0.07	0.31	0.06	0.26	0.03	0.14
263	511-114-312-04	Activated Carbon	Insertable Bag Filter	New	1,490	56.2	246.1	24.73	108.30	10.1	44.3	0.0044	0.06	0.25	0.05	0.21	0.03	0.11
263	511-122-312-04	Activated Carbon	Bag Filter	New	500	18.9	82.6	8.30	36.34	3.4	14.9	0.0044	0.02	0.08	0.02	0.07	0.01	0.04
263	511-123-312-04	Activated Carbon	Bag Filter	New	500	18.9	82.6	8.30	36.34	3.4	14.9	0.0044	0.02	0.08	0.02	0.07	0.01	0.04
265	511-126-312-04	Dust from baghouse	Bag Filter	New	380	14.3	62.8	6.31	27.62	2.6	11.3	0.0044	0.01	0.06	0.01	0.05	0.01	0.03
261	521-14-312-04	Homo silos	Bag Filter	New	8,400	316.8	1,387.6	139.39	610.54	57.0	249.8	0.0044	0.32	1.39	0.27	1.17	0.14	0.62
261	521-37-312-04	Homo silos	Bag Filter	New	2,480	93.5	409.7	41.15	180.25	16.8	73.7	0.0044	0.09	0.41	0.08	0.34	0.04	0.18
260	521-40-312-04	Homo silos	Bag Filter	New	3,750	141.4	619.5	62.23	272.56	25.5	111.5	0.0044	0.14	0.62	0.12	0.52	0.06	0.28
265	511-74-312-04	Dust Hopper	Bag Filter	New	2,620	98.8	432.8	43.48	190.43	17.8	77.9	0.0044	0.10	0.43	0.08	0.36	0.04	0.19
263	511-91-312-04	Lime Silo	Bag Filter	New	1,130	42.6	186.7	18.75	82.13	7.7	33.6	0.0044	0.04	0.19	0.04	0.16	0.02	0.08
263	511-98-312-04	Lime Hopper	Bag Filter	New	380	14.3	62.8	6.31	27.62	2.6	11.3	0.0044	0.01	0.06	0.01	0.05	0.01	0.03
263	511-99-312-04	Lime Hopper	Bag Filter	New	380	14.3	62.8	6.31	27.62	2.6	11.3	0.0044	0.01	0.06	0.01	0.05	0.01	0.03
263	511-100-312-04	Vent Hopper	Bag Filter	New	380	14.3	62.8	6.31	27.62	2.6	11.3	0.0044	0.01	0.06	0.01	0.05	0.01	0.03
263	511-101-312-04	Vent Hopper	Bag Filter	New	380	14.3	62.8	6.31	27.62	2.6	11.3	0.0044	0.01	0.06	0.01	0.05	0.01	0.03
271	622-07-312-01	Finish Mill #1	Finish Mill #1 Bag house	Existing (11/01/1969)	18,160	684.9	2,999.8	301.35	1319.92	123.3	540.0	0.0044	0.68	3.00	0.58	2.52	0.31	1.35
271	612-25-312-01	Finish Mill #1	Bag Filter	New	12,140	208.1	911.5	91.57	401.08	37.5	164.1	0.002	0.21	0.91	0.17	0.77	0.09	0.41
273	622-09-312-02	Finish Mill #2	Separator Baghouse	Existing (06/01/1957)	85,410	1,464.2	6,413.1	644.24	2821.75	263.6	1,154.4	0.002	1.46	6.41	1.23	5.39	0.66	2.89
272	622-24-312-02	Finish Mill #2	Insertable Dust Collector	New	1,440	54.3	237.9	23.90	104.66	9.8	42.8	0.0044	0.05	0.24	0.05	0.20	0.02	0.11
273	622-15-312-02	Finish Mill #2	Finish Mill #2 Bag house	Refurbish	18,160	311.3	1,363.6	136.98	599.96	56.0	245.4	0.002	0.31	1.36	0.26	1.15	0.14	0.61
262	885-11-312-01	COAL MILL	Coal Baghouse	New	39,280	1,481.4	6,488.6	651.82	2854.99	266.7	1,167.9	0.0044	1.48	6.49	1.24	5.45	0.67	2.92
262	886-11-312-01	COAL MILL	Bag Filter	New	3,210	55.0	241.0	24.21	106.05	9.9	43.4	0.002	0.06	0.24	0.05	0.20	0.02	0.11
262	886-12-312-01	COAL MILL	Bag Filter	New	1,750	66.0	289.1	29.04	127.20	11.9	52.0	0.0044	0.07	0.29	0.06	0.24	0.03	0.13
262	886-13-312-01	COAL MILL	Bag Filter	New	1,750	30.0	131.4	13.20	57.82	5.4	23.7	0.002	0.03	0.13	0.03	0.11	0.01	0.06
209	C209	Cement storage	EAST CEMENT SILOS (18-29)	Existing (06/01/1957)	11,640	439.0	1,922.8	193.16	846.03	79.0	346.1	0.0044	0.44	1.92	0.37	1.62	0.20	0.87
210	C210	Cement storage	WEST CEMENT SILOS (6-17)	Existing (06/01/1957)	11,640	439.0	1,922.8	193.16	846.03	79.0	346.1	0.0044	0.44	1.92	0.37	1.62	0.20	0.87
213	C213	Bagging	South Packer Baghouse	Existing (06/01/1957)	32,980	565.4	2,476.3	248.76	1089.58	101.8	445.7	0.002	0.57	2.48	0.47	2.08	0.25	1.11
214	C214	Bagging	North Packer Baghouse	Existing (06/01/1957)	32,980	565.4	2,476.3	248.76	1089.58	101.8	445.7	0.002	0.57	2.48	0.47	2.08	0.25	1.11
215	C215	Bagging	Masonry Packer Baghouse	Existing (06/01/1957)	32,980	565.4	2,476.3	248.76	1089.58	101.8	445.7	0.002	0.57	2.48	0.47	2.08	0.25	1.11
216	C216	Loading	EAST/WEST TRUCK LOADING Baghouse	Existing (06/01/1957)	9,700	166.3	728.3	73.17	320.47	29.9	131.1	0.002	0.17	0.73	0.14	0.61	0.07	0.33
217	C217	Loading	NEW TRUCK LOADING Baghouse (Scale 3)	New	1,940	73.2	320.5	32.19	141.00	13.2	57.7	0.0044	0.07	0.32	0.06	0.27	0.03	0.14
218	C218	Loading	RAILCAR LOADING Baghouse	Existing (06/01/1963)	4,850	182.9	801.2	80.48	352.51	32.9	144.2	0.0044	0.18	0.80	0.15	0.67	0.08	0.36
				TOTAL									**9.67**	**42.36**	**8.12**	**35.58**	**4.35**	**19.06**

[1] The PM_{10} and $PM_{2.5}$ fractions are based on the particle size multipliers in AP-42, Table 11.6-5, Uncontrolled, Dry Process (44% and 18%, respectively)
[2] The PM_{10} and $PM_{2.5}$ fractions are based on the particle size multipliers in AP-42, Table 11.6-5, Controlled, Dry Process with FF (84% and 45%, respectively)
[3] Uncontrolled emissions assumed a 99.9% control

CEMEX
Wampum Cement Plant
PM Sources (Throughput/Emission Factor calculation methodology)

Source ID	Transfer Description	Drawing	Material	Control Method	Comment	Throughput	Emission Factor (lb/ton)			Control Efficiency	Uncontrolled						Controlled					
											PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions		PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions	
						ton/yr	PM	PM_{10}	$PM_{2.5}$		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
252	Stone/coal truck unloading to reception hopper (311-01-248-01)	300-14-04-002	Limestone/ Coal	Partial enclosure	fugitive	1,742,875	0.00014	0.000046	0.000013	85%	3.0E-02	1.2E-01	1.0E-02	4.0E-02	2.8E-03	1.1E-02	4.6E-03	0.02	1.5E-03	0.01	4.2E-04	1.70E-3
254	30" belt conveyor (311-08-413-01) to turnhead (310-09-418-01)	300-14-04-002	Limestone/ Coal	Bag filter (311-10-312-01)		1,742,875	0.00014	0.000046	0.000013	99%	3.0E-02	1.2E-01	1.0E-02	4.0E-02	2.8E-03	1.1E-02	3.0E-04	1.22E-3	1.0E-04	4.01E-4	2.8E-05	1.13E-4
254	Turnhead (310-09-418-01) to 24" belt conveyor (311-15-413-01)	300-14-04-002	Limestone	Bag filter (311-10-312-01)		402,577	0.00014	0.000046	0.000013	99%	7.0E-03	2.8E-02	2.3E-03	9.3E-03	6.5E-04	2.6E-03	7.0E-05	2.82E-4	2.3E-05	9.26E-5	6.5E-06	2.62E-5
254	24" belt conveyor (311-15-413-01) to Stone silo #14 (315-19-232-01)	300-14-04-002	Limestone	Bag filter (311-14-312-01)		402,577	0.00014	0.000046	0.000013	99%	7.0E-03	2.8E-02	2.3E-03	9.3E-03	6.5E-04	2.6E-03	7.0E-05	2.82E-4	2.3E-05	9.26E-5	6.5E-06	2.62E-5
254	Turnhead (310-09-418-01) to Stone silo #7 (315-12-232-01)	300-14-04-002	Limestone	Bag filter (311-10-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
254	Turnhead (310-09-418-01) to Stone silo #8 (315-13-232-01)	300-14-04-002	Limestone	Bag filter (311-10-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
254	Turnhead (310-09-418-01) to Stone/slag silo #9 (315-14-232-01)	300-14-04-002	Limestone/ slag	Bag filter (311-10-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
254	Turnhead (310-09-418-01) to Stone silo #2 (315-08-232-01)	300-14-04-002	Limestone	Bag filter (571-09-312-01)		127,951	0.00014	0.000046	0.000013	99%	2.2E-03	9.0E-03	7.3E-04	2.9E-03	2.1E-04	8.3E-04	2.2E-05	8.96E-5	7.3E-06	2.94E-5	2.1E-06	8.32E-6
254	Turnhead (310-09-418-01) to 30" belt conveyor (311-19-413-01)	300-14-04-002	Limestone	Bag filter (311-10-312-01)		516,484	0.00014	0.000046	0.000013	99%	9.0E-03	3.6E-02	3.0E-03	1.2E-02	8.4E-04	3.4E-03	9.0E-05	3.62E-4	3.0E-05	1.19E-4	8.4E-06	3.36E-5
254	30" belt conveyor (311-19-413-01) to 30" belt conveyor (311-23-413-01)	300-14-04-002	Limestone	Bag filter (311-20-312-01)		301,152	0.00014	0.000046	0.000013	99%	5.2E-03	2.1E-02	1.7E-03	6.9E-03	4.9E-04	2.0E-03	5.2E-05	2.11E-4	1.7E-05	6.93E-5	4.9E-06	1.96E-5
254	30" belt conveyor (311-19-413-01) to Stone silo #5 (315-16-232-01	300-14-04-002	Limestone	Bag filter (311-20-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
254	30" belt conveyor (311-23-413-01) to Stone silo #4 (315-15-232-01)	300-14-04-002	Limestone	Bag filter (311-20-312-01)		184,124	0.00014	0.000046	0.000013	99%	3.2E-03	1.3E-02	1.1E-03	4.2E-03	3.0E-04	1.2E-03	3.2E-05	1.29E-4	1.1E-05	4.23E-5	3.0E-06	1.20E-5
254	30" belt conveyor (311-23-413-01) to Stone silo #6 (315-17-232-01)	300-14-04-002	Limestone	Bag filter (311-20-312-01)		160,719	0.00014	0.000046	0.000013	99%	2.8E-03	1.1E-02	9.2E-04	3.7E-03	2.6E-04	1.0E-03	2.8E-05	1.13E-4	9.2E-06	3.70E-5	2.6E-06	1.04E-5
254	Turnhead (310-09-418-01) to 30" belt conveyor (881-01-413-01)	300-14-04-002	Coal	Bag filter (311-10-312-01)		182,500	0.00014	0.000046	0.000013	99%	3.2E-03	1.3E-02	1.0E-03	4.2E-03	3.0E-04	1.2E-03	3.2E-05	1.28E-4	1.0E-05	4.20E-5	3.0E-06	1.19E-5
253	Additives truck unloading station (315-02-231-01) to additives reception hopper (341-01-248-01)	300-14-04-003	Additives	Partial enclosure	fugitive	332,562	0.00014	0.000046	0.000013	85%	5.8E-03	2.3E-02	1.9E-03	7.6E-03	5.4E-04	2.2E-03	8.7E-04	3.49E-3	2.9E-04	1.15E-3	8.1E-05	3.24E-4
255	30" belt conveyor (341-08-413-01) to turnhead (340-09-418-01)	300-14-04-003	Additives	Bag filter (341-10-312-01)		332,562	0.00014	0.000046	0.000013	99%	5.8E-03	2.3E-02	1.9E-03	7.6E-03	5.4E-04	2.2E-03	5.8E-05	2.33E-4	1.9E-05	7.65E-5	5.4E-06	2.16E-5
255	Turnhead (340-09-418-01) to Shale silo #10 (325-01-232-01)	300-14-04-003	Shale	Bag filter (341-10-312-01)		191,625	0.00014	0.000046	0.000013	99%	3.3E-03	1.3E-02	1.1E-03	4.4E-03	3.1E-04	1.2E-03	3.3E-05	1.34E-4	1.1E-05	4.41E-5	3.1E-06	1.25E-5
255	Turnhead (340-09-418-01) to Shale silo #11 (345-01-232-01)	300-14-04-003	Iron ore	Bag filter (341-10-312-01)		9,125	0.00014	0.000046	0.000013	99%	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05	1.6E-06	6.39E-6	5.2E-07	2.10E-6	1.5E-07	5.93E-7
255	Turnhead (340-09-418-01) to Shale silo #12 (365-01-232-01)	300-14-04-003	Slag	Bag filter (341-10-312-01)		63,875	0.00014	0.000046	0.000013	99%	1.1E-03	4.5E-03	3.7E-04	1.5E-03	1.0E-04	4.2E-04	1.1E-05	4.47E-5	3.7E-06	1.47E-5	1.0E-06	4.15E-6
255	Turnhead (340-09-418-01) to 30" belt conveyor (335-02-413-01)	300-14-04-003	Gypsum	Bag filter (341-10-312-01)		59,937	0.00014	0.000046	0.000013	99%	1.0E-03	4.2E-03	3.4E-04	1.4E-03	9.7E-05	3.9E-04	1.0E-05	4.20E-5	3.4E-06	1.38E-5	9.7E-07	3.90E-6
255	30" belt conveyor (335-02-413-01) to Gypsum silo #3	300-14-04-003	Gypsum	Bag filter (335-03-312-01)		59,937	0.00014	0.000046	0.000013	99%	1.0E-03	4.2E-03	3.4E-04	1.4E-03	9.7E-05	3.9E-04	1.0E-05	4.20E-5	3.4E-06	1.38E-5	9.7E-07	3.90E-6
256	Stone silo #14 to 30" weight conveyor (411-32-413-01) or 24" weight feeder (441-33-421-02) or 24" weight feeder (441-33-421-03)	411-14-01-001	Limestone	Bag filter (411-34-312-01)		402,577	0.00014	0.000046	0.000013	99%	7.0E-03	2.8E-02	2.3E-03	9.3E-03	6.5E-04	2.6E-03	7.0E-05	2.82E-4	2.3E-05	9.26E-5	6.5E-06	2.62E-5
256	30" weight conveyor (411-32-413-01) or 24" weight feeder (441-33-421-02) or 24" weight feeder (441-33-421-03) to stone 30" belt conveyor	411-14-01-001	Limestone	Bag filter (411-34-312-01)		402,577	0.00014	0.000046	0.000013	99%	7.0E-03	2.8E-02	2.3E-03	9.3E-03	6.5E-04	2.6E-03	7.0E-05	2.82E-4	2.3E-05	9.26E-5	6.5E-06	2.62E-5
256	Stone silo #7 (315-12-232-01) to stone 30" belt conveyor (411-29-413-01)	411-14-01-001	Limestone	Bag filter (411-34-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
256	Stone silo #8 (315-13-232-01) to stone 30" belt conveyor (411-29-413-01)	411-14-01-001	Limestone	Bag filter (411-34-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
256	Stone/slag silo #9 (315-14-232-01) to autoweight feeder (411-04-421-01)	411-14-01-001	Limestone/ slag	Bag filter (411-34-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
256	Autoweight feeder (411-04-421-01) to stone 30" belt conveyor (411-29-413-01)	411-14-01-001	Limestone/ slag	Bag filter (411-34-312-01)		171,641	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
257	Stone/slag silo #9 (315-14-232-01) or weight belt conveyor (411-05-413-01)	411-14-01-001	Limestone/ slag	Bag filter (411-34-312-01)		9,125	0.00014	0.000046	0.000013	99%	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05	1.6E-06	6.39E-6	5.2E-07	2.10E-6	1.5E-07	5.93E-7
257	Weight belt conveyor (411-05-413-01) to stone 30" belt conveyor (411-27-413-02)	411-14-01-001	Limestone/ slag	Bag filter (411-48-312-01)		9,125	0.00014	0.000046	0.000013	99%	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05	1.6E-06	6.39E-6	5.2E-07	2.10E-6	1.5E-07	5.93E-7

Source ID	Transfer Description	Drawing	Material	Control Method	Comment	Throughput	Emission Factor (lb/ton)			Control Efficiency	PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions		PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions	
						ton/yr	PM	PM_{10}	$PM_{2.5}$		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
257	Stone 30" belt conveyor (411-27-413-02) to 30" belt conveyor (411-57-413-01)	411-14-01-001	Raw Addtitves	Bag filter (411-48-312-01)		264,625	0.00014	0.000046	0.000013	99%	4.6E-03	1.9E-02	1.5E-03	6.1E-03	4.3E-04	1.7E-03	4.6E-05	1.85E-4	1.5E-05	6.09E-5	4.3E-06	1.72E-5
257	30" belt conveyor (411-57-413-01) to 36" belt conveyor (411-30-413-01)	411-14-01-001	Raw Addtitves	Bag filter (411-52-312-01)		264,625	0.00014	0.000046	0.000013	99%	4.6E-03	1.9E-02	1.5E-03	6.1E-03	4.3E-04	1.7E-03	4.6E-05	1.85E-4	1.5E-05	6.09E-5	4.3E-06	1.72E-5
256	Stone silo #13 (315-20-232-01) to stone 30" belt conveyor (411-28-413-01)	411-14-01-001	Limestone	Bag filter (411-58-312-01)	assume Silo #13 is not used	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	--	0.0E+00	--	0.0E+00	--
256	Stone silo #4 (315-15-232-01) to stone 30" belt conveyor (411-28-413-01)	411-14-01-001	Limestone	Bag filter (411-58-312-01)		184,124	0.00014	0.000046	0.000013	99%	3.2E-03	1.3E-02	1.1E-03	4.2E-03	3.0E-04	1.2E-03	3.2E-05	1.29E-4	1.1E-05	4.23E-5	3.0E-06	1.20E-5
256	Stone silo #5 (315-16-232-01) to stone 30" belt conveyor (411-28-413-01)	411-14-01-001	Limestone	Bag filter (411-58-312-01)		171,640	0.00014	0.000046	0.000013	99%	3.0E-03	1.2E-02	9.8E-04	3.9E-03	2.8E-04	1.1E-03	3.0E-05	1.20E-4	9.8E-06	3.95E-5	2.8E-06	1.12E-5
256	Stone silo #6 (315-17-232-01) to stone 30" belt conveyor (411-28-413-01)	411-14-01-001	Limestone	Bag filter (411-58-312-01)		160,718	0.00014	0.000046	0.000013	99%	2.8E-03	1.1E-02	9.2E-04	3.7E-03	2.6E-04	1.0E-03	2.8E-05	1.13E-4	9.2E-06	3.70E-5	2.6E-06	1.04E-5
257	Shale silo #10 (325-01-232-01) to autoweight feeder (411-23-421-02)	411-14-01-001	Shale	Bag filter (411-48-312-01)		191,625	0.00014	0.000046	0.000013	99%	3.3E-03	1.3E-02	1.1E-03	4.4E-03	3.1E-04	1.2E-03	3.3E-05	1.34E-4	1.1E-05	4.41E-5	3.1E-06	1.25E-5
257	Autoweight feeder (411-23-421-02) to stone 30" belt conveyor (411-27-413-01)	411-14-01-001	Shale	Bag filter (411-48-312-01)		191,625	0.00014	0.000046	0.000013	99%	3.3E-03	1.3E-02	1.1E-03	4.4E-03	3.1E-04	1.2E-03	3.3E-05	1.34E-4	1.1E-05	4.41E-5	3.1E-06	1.25E-5
257	Shale silo #11 (345-01-232-01) to autoweight feeder (411-24-421-02)	411-14-01-001	Iron ore	Bag filter (411-48-312-01)		9,125	0.00014	0.000046	0.000013	99%	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05	1.6E-06	6.39E-6	5.2E-07	2.10E-6	1.5E-07	5.93E-7
257	Autoweight feeder (411-24-421-02) to stone 30" belt conveyor (411-27-413-01)	411-14-01-001	Iron ore	Bag filter (411-48-312-01)		9,125	0.00014	0.000046	0.000013	99%	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05	1.6E-06	6.39E-6	5.2E-07	2.10E-6	1.5E-07	5.93E-7
257	Shale silo #12 (365-01-232-01) to 24" sand autoweight feeder (411-25-421-02)	411-14-01-001	Pea gravel	Bag filter (411-48-312-01)		54,750	0.00014	0.000046	0.000013	99%	9.5E-04	3.8E-03	3.1E-04	1.3E-03	8.9E-05	3.6E-04	9.5E-06	3.83E-5	3.1E-06	1.26E-5	8.9E-07	3.56E-6
257	Autoweight feeder (411-25-421-02) to stone 30" belt conveyor (411-27-413-01)	411-14-01-001	Pea gravel	Bag filter (411-48-312-01)		54,750	0.00014	0.000046	0.000013	99%	9.5E-04	3.8E-03	3.1E-04	1.3E-03	8.9E-05	3.6E-04	9.5E-06	3.83E-5	3.1E-06	1.26E-5	8.9E-07	3.56E-6
257	Shale silo #12 (365-01-232-01) to sand autoweight 30" belt conveyor (411-26-421-02)	411-14-01-001	Pea gravel	Bag filter (411-48-312-01)	assume throughput through sand autoweight feeder	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
257	Sand autoweight 30" belt conveyor (411-26-421-02) to stone 30" belt conveyor (411-27-413-01)	411-14-01-001	Pea gravel	Bag filter (411-48-312-01)	assume throughput through sand autoweight feeder	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
257	Hopper (TAG 411-01-01) to Belt scale (411-44-632-01)	411-14-01-001	Limestone	Bag filter (411-52-312-01)		1,433,985	0.00014	0.000046	0.000013	99%	2.5E-02	1.0E-01	8.2E-03	3.3E-02	2.3E-03	9.3E-03	2.5E-04	1.00E-3	8.2E-05	3.30E-4	2.3E-05	9.32E-5
257	Belt scale (411-44-632-01) to 36" belt conveyor (411-30-413-01)	411-14-01-001	Limestone	Bag filter (411-52-312-01)		1,433,985	0.00014	0.000046	0.000013	99%	2.5E-02	1.0E-01	8.2E-03	3.3E-02	2.3E-03	9.3E-03	2.5E-04	1.00E-3	8.2E-05	3.30E-4	2.3E-05	9.32E-5
256	Stone 30" belt conveyor (411-29-413-01) to Pocket Belt (411-50-414-01)	411-14-01-001	Limestone	Bag filter (411-38-312-01)		917,501	0.00014	0.000046	0.000013	99%	1.6E-02	6.4E-02	5.2E-03	2.1E-02	1.5E-03	6.0E-03	1.6E-04	6.42E-4	5.2E-05	2.11E-4	1.5E-05	5.96E-5
256	Stone 30" belt conveyor (411-28-413-01) to Pocket Belt (411-50-414-01)	411-14-01-001	Limestone	Bag filter (411-38-312-01)		516,484	0.00014	0.000046	0.000013	99%	9.0E-03	3.6E-02	3.0E-03	1.2E-02	8.4E-04	3.4E-03	9.0E-05	3.62E-4	3.0E-05	1.19E-4	8.4E-06	3.36E-5
256	Pocket Belt (411-50-414-01) to Hopper (TAG 411-01-01)	411-14-01-001	Limestone	Bag filter (411-42-312-01)		1,433,985	0.00014	0.000046	0.000013	99%	2.5E-02	1.0E-01	8.2E-03	3.3E-02	2.3E-03	9.3E-03	2.5E-04	1.00E-3	8.2E-05	3.30E-4	2.3E-05	9.32E-5
258	Belt conveyor (411-04-413-01) to belt conveyor (422-12-413-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)		1,698,610	0.00014	0.000046	0.000013	99%	3.0E-02	1.2E-01	9.7E-03	3.9E-02	2.7E-03	1.1E-02	3.0E-04	1.19E-3	9.7E-05	3.91E-4	2.7E-05	1.10E-4
258	Belt conveyor (422-12-413-01) to rejecting hopper (TAG 422-01-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)	assume no rejected material	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
258	Rejecting hopper (TAG 422-01-01) to vibratory feeder (422-08-423-01)	420-14-04-001	Raw materials	Bag filter (422-22-312-01)	assume no rejected material	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
258	Vibratory feeder (422-08-423-01) to Belt conveyor (422-20-413-01)	420-14-04-001	Raw materials	Bag filter (422-22-312-01)	assume no rejected material	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
258	Belt conveyor (422-20-413-01) to Belt conveyor (422-10-413-01)	420-14-04-001	Raw materials	Bag filter (422-22-312-01)	assume no rejected material	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
258	Belt conveyor (422-20-413-01) to truck	420-14-04-001	Raw materials	Bag filter (422-22-312-01)	assume no rejected material	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
258	Belt conveyor (422-10-413-01) to bucket elevator (422-11-412-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)	assume 25% recycle	424,653	0.00014	0.000046	0.000013	99%	7.4E-03	3.0E-02	2.4E-03	9.8E-03	6.9E-04	2.8E-03	7.4E-05	3.0E-04	2.4E-05	9.8E-05	6.9E-06	2.8E-05
258	Bucket elevator (422-11-412-01) to belt conveyor (422-12-413-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)	assume 25% recycle	424,653	0.00014	0.000046	0.000013	99%	7.4E-03	3.0E-02	2.4E-03	9.8E-03	6.9E-04	2.8E-03	7.4E-05	3.0E-04	2.4E-05	9.8E-05	6.9E-06	2.8E-05
258	Raw Mill (422-010435-01) to vibrating feeder (422-09-423-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)	assume 25% recycle	424,653	0.00014	0.000046	0.000013	99%	7.4E-03	3.0E-02	2.4E-03	9.8E-03	6.9E-04	2.8E-03	7.4E-05	3.0E-04	2.4E-05	9.8E-05	6.9E-06	2.8E-05
258	Vibrating feeder (422-09-423-01) to belt conveyor (422010-413-01)	420-14-04-001	Raw materials	Bag filter (422-13-312-01)	assume 25% recycle	424,653	0.00014	0.000046	0.000013	99%	7.4E-03	3.0E-02	2.4E-03	9.8E-03	6.9E-04	2.8E-03	7.4E-05	3.0E-04	2.4E-05	9.8E-05	6.9E-06	2.8E-05
264	Clinker cooler (561-01-472-04) to clinker pan conveyor (571-01-414-04)	500-14-04-001		Bag filter 571-05-312-01)		1,138,800	0.00014	0.000046	0.000013	99%	2.0E-02	8.0E-02	6.5E-03	2.6E-02	1.8E-03	7.4E-03	2.0E-04	8.0E-04	6.5E-05	2.6E-04	1.8E-05	7.4E-05
264	Cyclon (561-10-426-04) to drag chain conveyor (561-12-415-04)	500-14-04-001		Bag filter (561-21-312-04) New BH not previously on BH list	assume negligible	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Source ID	Transfer Description	Drawing	Material	Control Method	Comment	Throughput	Emission Factor (lb/ton)			Control Efficiency	PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions		PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions	
						ton/yr	PM	PM_{10}	$PM_{2.5}$		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
264	Drag chain conveyor (561-12-415-04) to drag chain conveyor (561-13-415-04)	500-14-04-001		Bag filter (561-21-312-04) New BH not previously on BH list	assume negligible	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
264	Drag chain conveyor (561-13-415-04) to drag chain conveyor (561-13-415-04)	500-14-04-001		Bag filter (571-05-312-01)	assume negligible	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
263	Rotor weigh feeder (521-07-363-04) to kiln burner (551-01-474-04)	500-14-04-001	Coal		assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
263	Hot gas cyclone (885-34-426-01) to 4a Stage and 5a Stage	500-14-04-001			assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
263	Rotor weigh feeder (888-06-722-01) to calciner (531-02-464-04)	500-14-04-001			assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
263	Vent hopper (TAG 511-05-04) to nozzle lance and downcomer (531-12-323-04)	500-14-04-001			assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
265	Preheater to mixing chamber (TAG 511-01-04)	510-14-04-001			assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
265	Mixing chamber (TAG 511-01-04) to screw conveyor (511-50-411-04)	510-14-04-001			assumed controlled	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
267	Belt conveyor (574-39-413-01) to belt conveyor (574-41-413-01)	570-14-01-001		Bag filter (574-46-312-01)	assume Finish Mill #2 is 80% of clinker	911,040	0.00014	0.000046	0.000013	99%	1.6E-02	6.4E-02	5.2E-03	2.1E-02	1.5E-03	5.9E-03	1.6E-04	6.4E-04	5.2E-05	2.1E-04	1.5E-05	5.9E-05
267	Belt conveyor (574-41-413-01) to clinker silo #15	570-14-01-001		Bag filter (574-46-312-01)		637,728	0.00014	0.000046	0.000013	99%	1.1E-02	4.5E-02	3.6E-03	1.5E-02	1.0E-03	4.1E-03	1.1E-04	4.5E-04	3.6E-05	1.5E-04	1.0E-05	4.1E-05
268	Belt conveyor (574-41-413-01) to clinker storage pile	570-14-01-001		storage building and insertable dust collector (574-48-312-01)		136,656	0.00014	0.000046	0.000013	99%	2.4E-03	9.6E-03	7.8E-04	3.1E-03	2.2E-04	8.9E-04	2.4E-05	9.6E-05	7.8E-06	3.1E-05	2.2E-06	8.9E-06
268	Belt conveyor (574-41-413-01) to clinker storage pile	570-14-01-001		storage building and insertable dust collector (574-49-312-01)		136,656	0.00014	0.000046	0.000013	99%	2.4E-03	9.6E-03	7.8E-04	3.1E-03	2.2E-04	8.9E-04	2.4E-05	9.6E-05	7.8E-06	3.1E-05	2.2E-06	8.9E-06
268	Belt conveyor (574-41-413-01) to clinker storage pile	570-14-01-001		storage building and insertable dust collector (574-50-312-01)		136,656	0.00014	0.000046	0.000013	99%	2.4E-03	9.6E-03	7.8E-04	3.1E-03	2.2E-04	8.9E-04	2.4E-05	9.6E-05	7.8E-06	3.1E-05	2.2E-06	8.9E-06
268	Belt conveyor (574-41-413-01) to clinker storage pile	570-14-01-001		storage building and insertable dust collector (574-51-312-01)		136,656	0.00014	0.000046	0.000013	99%	2.4E-03	9.6E-03	7.8E-04	3.1E-03	2.2E-04	8.9E-04	2.4E-05	9.6E-05	7.8E-06	3.1E-05	2.2E-06	8.9E-06
269	Belt conveyor (574-39-413-01) to #7 clinker belt conveyor (571-08-413-01)	570-14-01-001		Bag filter (571-09-312-01)	assume Finish Mill #1 is 20% of clinker	227,760	0.00014	0.000046	0.000013	99%	4.0E-03	1.6E-02	1.3E-03	5.2E-03	3.7E-04	1.5E-03	4.0E-05	1.6E-04	1.3E-05	5.2E-05	3.7E-06	1.5E-05
269	#7 clinker belt conveyor (571-08-413-01) to clinker silo #1 (572-01-232-01)	570-14-01-001		Bag filter (571-09-312-01)	assume Finish Mill #1 is 20% of clinker	227,760	0.00014	0.000046	0.000013	99%	4.0E-03	1.6E-02	1.3E-03	5.2E-03	3.7E-04	1.5E-03	4.0E-05	1.6E-04	1.3E-05	5.2E-05	3.7E-06	1.5E-05
266	Clinker pan conveyor (571-01-414-04) to Clinker pan conveyor (571-02-414-04)	570-14-01-001		Bag filter (571-05-312-01)	assume all clinker goes to the dome	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
266	Clinker pan conveyor (571-02-414-04) to clinker hopper (TAG 573-01-01)	570-14-01-001		Bag filter (573-08-312-01)	assume all clinker goes to the dome	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
266	Clinker hopper (TAG 573-01-01) to bulk mobile loader (573-06-347-01)	570-14-01-001		Bag filter (573-11-312-01)	assume all clinker goes to the dome	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
266	Clinker hopper (TAG 573-01-01) to belt conveyor (573-05-413--01)	570-14-01-001		Bag filters (574-44-312-01 & 573-08-312-01)	assume all clinker goes to the dome	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
266	Belt conveyor (573-05-413--01) to belt conveyor (573-39-413--01)	570-14-01-001		Bag filter (574-44-312-01)	assume all clinker goes to the dome	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
266	Clinker pan conveyor (571-02-414-04) to clinker dome	570-14-01-001		Bag filter (571-05-312-01)		1,138,800	0.00014	0.000046	0.000013	99%	2.0E-02	8.0E-02	6.5E-03	2.6E-02	1.8E-03	7.4E-03	2.0E-04	8.0E-04	6.5E-05	2.6E-04	1.8E-05	7.4E-05
266	Clinker dome to belt conveyor (574-39-413-01)	570-14-01-001		Bag filter (574-44-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Clinker dome to belt conveyor (574-34-413-01)	570-14-01-001		Bag filter (574-35-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Belt conveyor (574-34-413-01) to belt conveyor (574-37-413-01)	570-14-01-001		Bag filter (574-35-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Belt conveyor (574-37-413-01) to belt conveyor (574-39-413-01)	570-14-01-001		Bag filter (574-42-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Clinker dome to belt conveyor (574-31-413-01)	570-14-01-001		Bag filter (574-32-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Belt conveyor (574-38-413-01) to belt conveyor (574-38-413-01)	570-14-01-001		Bag filter (574-32-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
266	Belt conveyor (574-31-413-01) to belt conveyor (574-39-413-01)	570-14-01-001		Bag filter (574-42-312-01)		379,600	0.00014	0.000046	0.000013	99%	6.6E-03	2.7E-02	2.2E-03	8.7E-03	6.1E-04	2.5E-03	6.6E-05	2.7E-04	2.2E-05	8.7E-05	6.1E-06	2.5E-05
270	Front end loader to synthetic gypsum hopper (612-02-248-01)	600-14-01-001	Gypsum		fugitive	7,300	0.00014	0.000046	0.000013	0%	1.3E-04	5.1E-04	4.2E-05	1.7E-04	1.2E-05	4.7E-05	1.3E-04	5.1E-04	4.2E-05	1.7E-04	1.2E-05	4.7E-05
270	Synthetic gypsum hopper (612-02-248-01) to clinker conveyor feeder belt (612-08-413-01)	600-14-01-002	Gypsum	Bag filter (612-18-312-01)		7,300	0.00014	0.000046	0.000013	99%	1.3E-04	5.1E-04	4.2E-05	1.7E-04	1.2E-05	4.7E-05	1.3E-06	5.1E-06	4.2E-07	1.7E-06	1.2E-07	4.7E-07
270	Silo #1 clinker to clinker autoweight feeder (612-01-421-01)	600-14-01-003	Clinker	Bag filter (612-20-312-01)		227,760	0.003	0.0011	0.00017	99%	8.5E-02	3.4E-01	3.1E-02	1.3E-01	4.7E-03	1.9E-02	8.5E-04	3.4E-03	3.1E-04	1.3E-03	4.7E-05	1.9E-04

Source ID	Transfer Description	Drawing	Material	Control Method	Comment	Throughput	Emission Factor (lb/ton)			Control Efficiency	PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions		PM Emissions (tpy)		PM_{10} Emissions		$PM_{2.5}$ Emissions	
						ton/yr	PM	PM_{10}	$PM_{2.5}$		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
270	Clinker autoweight feeder (612-01-421-01) to clinker conveyor feeder belt (612-08-413-01)	600-14-01-004	Clinker	Bag filter (612-20-312-01)		227,760	0.003	0.0011	0.00017	99%	8.5E-02	3.4E-01	3.1E-02	1.3E-01	4.7E-03	1.9E-02	8.5E-04	3.4E-03	3.1E-04	1.3E-03	4.7E-05	1.9E-04
270	Silo #2 stone to stone autoweight feeder (612-06-421-01)	600-14-01-005	Limestone	Bag filter (612-20-312-01)		127,951	0.00014	0.000046	0.000013	99%	2.2E-03	9.0E-03	7.3E-04	2.9E-03	2.1E-04	8.3E-04	2.2E-05	9.0E-05	7.3E-06	2.9E-05	2.1E-06	8.3E-06
270	Stone autoweight feeder (612-06-421-01) to clinker conveyor feeder belt (612-08-413-01)	600-14-01-006	Limestone	Bag filter (612-20-312-01)		127,951	0.00014	0.000046	0.000013	99%	2.2E-03	9.0E-03	7.3E-04	2.9E-03	2.1E-04	8.3E-04	2.2E-05	9.0E-05	7.3E-06	2.9E-05	2.1E-06	8.3E-06
270	Silo #3 gypsum to gypsum autoweight feeder (612-07-421-01)	600-14-01-007	Gypsum	Bag filter (612-20-312-01)		4,687	0.00014	0.000046	0.000013	99%	8.2E-05	3.3E-04	2.7E-05	1.1E-04	7.6E-06	3.0E-05	8.2E-07	3.3E-06	2.7E-07	1.1E-06	7.6E-08	3.0E-07
270	Gypsum autoweight feeder (612-07-421-01) to clinker conveyor feeder belt (612-08-413-01)	600-14-01-008	Gypsum	Bag filter (612-20-312-01)		4,687	0.00014	0.000046	0.000013	99%	8.2E-05	3.3E-04	2.7E-05	1.1E-04	7.6E-06	3.0E-05	8.2E-07	3.3E-06	2.7E-07	1.1E-06	7.6E-08	3.0E-07
272	Stone pile to wet stone autoweight 24" belt fedder (612-02-421-02)	600-14-02-012	Stone	Bag filter (612-14-312-02)	assume no limestone	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
272	Wet stone autoweight 24" belt feeder (612-02-421-02) to feed belt conveyor (612-10-413-02)	600-14-02-012	Stone	Bag filter (612-14-312-02)	assume no limestone	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
272	Mineral gypsum or clinker pile to cold gypsum/clinker autoweight 42" belt fedder (612-03-421-02)	600-14-02-012	Gypsum / Clinker	Bag filter (612-14-312-02)		18,750	0.00014	0.000046	0.000013	99%	3.3E-04	1.3E-03	1.1E-04	4.3E-04	3.0E-05	1.2E-04	3.3E-06	1.3E-05	1.1E-06	4.3E-06	3.0E-07	1.2E-06
272	Cold gypsum/clinker autoweight 42" belt fedder (612-04-421-02) to feed belt conveyor (612-10-413-02)	600-14-02-012	Gypsum / Clinker	Bag filter (612-14-312-02)		18,750	0.00014	0.000046	0.000013	99%	3.3E-04	1.3E-03	1.1E-04	4.3E-04	3.0E-05	1.2E-04	3.3E-06	1.3E-05	1.1E-06	4.3E-06	3.0E-07	1.2E-06
272	Clinker pile to hot clinker autoweight 42" belt fedder (612-04-421-02)	600-14-02-012	Clinker	Bag filter (612-14-312-02)		273,312	0.003	0.0011	0.00017	99%	1.0E-01	4.1E-01	3.7E-02	1.5E-01	5.7E-03	2.3E-02	1.0E-03	4.1E-03	3.7E-04	1.5E-03	5.7E-05	2.3E-04
272	Hot clinker autoweight 42" belt fedder (612-04-421-02) to feed belt conveyor (612-10-413-02)	600-14-02-012	Clinker	Bag filter (612-14-312-02)		273,312	0.003	0.0011	0.00017	99%	1.0E-01	4.1E-01	3.7E-02	1.5E-01	5.7E-03	2.3E-02	1.0E-03	4.1E-03	3.7E-04	1.5E-03	5.7E-05	2.3E-04
272	Clinker silo #5 (572-02-232-02) to clinker feeder (612-06-413-02)	600-14-02-012	Clinker	Bag filter (612-14-312-02)		637,728	0.003	0.0011	0.00017	99%	2.4E-01	9.6E-01	8.7E-02	3.5E-01	1.3E-02	5.3E-02	2.4E-03	9.6E-03	8.7E-04	3.5E-03	1.3E-04	5.3E-04
272	Clinker feeder (612-06-413-02) to feed belt conveyor (612-10-413-02)	600-14-02-012	Clinker	Bag filter (612-14-312-02)		637,728	0.003	0.0011	0.00017	99%	2.4E-01	9.6E-01	8.7E-02	3.5E-01	1.3E-02	5.3E-02	2.4E-03	9.6E-03	8.7E-04	3.5E-03	1.3E-04	5.3E-04
272	Front end loader to synthetic gypsum hopper (612-07-248-02)	600-14-02-012	Gypsum		fugitive	29,200	0.00014	0.000046	0.000013	0%	5.1E-04	2.0E-03	1.7E-04	6.7E-04	4.7E-05	1.9E-04	5.1E-04	2.0E-03	1.7E-04	6.7E-04	4.7E-05	1.9E-04
272	Synthetic gypsum hopper (612-07-248-02) to gypsum belt feeder (612-09-413-02)	600-14-02-012	Gypsum	Bag filter (612-14-312-02)		29,200	0.00014	0.000046	0.000013	99%	5.1E-04	2.0E-03	1.7E-04	6.7E-04	4.7E-05	1.9E-04	5.1E-06	2.0E-05	1.7E-06	6.7E-06	4.7E-07	1.9E-06
272	Gypsum belt feeder (612-09-413-02) to feed belt conveyor (612-10-413-02)	600-14-02-012	Gypsum	Bag filter (612-14-312-02)		29,200	0.00014	0.000046	0.000013	99%	5.1E-04	2.0E-03	1.7E-04	6.7E-04	4.7E-05	1.9E-04	5.1E-06	2.0E-05	1.7E-06	6.7E-06	4.7E-07	1.9E-06
273	Feed belt conveyor (612-10-413-02) to feed bucket elevator (612-11-412-02)	600-14-02-012		Bag filter (612-19-312-02)		958,990	0.00014	0.000046	0.000013	99%	1.7E-02	6.7E-02	5.5E-03	2.2E-02	1.6E-03	6.2E-03	1.7E-04	6.7E-04	5.5E-05	2.2E-04	1.6E-05	6.2E-05
273	Feed bucket elevator (612-11-412-02) to #2 Finish Mill (622-01-431-02)	600-14-02-012	Cement		included with Finish Mill #2 operation	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
272	Dust hopper (511-03-04) to Feed Belt Conveyour (612-10-413-02)	600-14-02-013	CKD	Bag filter (612-14-312-02)	assume negligible	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
254	30" belt conveyor (881-01-413-01) to coal bin (TAG 882-01-01)	880-14-04-001	Coal	Insertable dust collector (885-19-312-01)	controls displaced emissions	182,500	0.00014	0.000046	0.000013	99%	3.2E-03	1.3E-02	1.0E-03	4.2E-03	3.0E-04	1.2E-03	3.2E-05	1.3E-04	1.0E-05	4.2E-05	3.0E-06	1.2E-05
254	30" belt conveyor (881-01-413-01) to coal bin (TAG 882-01-01)	880-14-04-001	Coal	Insertable dust collector (882-01-312-01)	controls drop	182,500	0.00014	0.000046	0.000013	99%	3.2E-03	1.3E-02	1.0E-03	4.2E-03	3.0E-04	1.2E-03	3.2E-05	1.3E-04	1.0E-05	4.2E-05	3.0E-06	1.2E-05
262	Screw conveyor (886-01-411-01) to container	880-14-04-001	Coal		Emergency only. Normally closed.	0	0.00014	0.000046	0.000013	99%	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
178	Transfer of cement to railcars at the Rail Loading Station	880-14-04-001	Cement	Dust collector (178)		179,811	0.003	0.0011	0.00017	99%	6.7E-02	2.7E-01	2.5E-02	9.9E-02	3.7E-03	1.5E-02	6.7E-04	2.7E-03	2.5E-04	9.9E-04	3.7E-05	1.5E-04
217	Transfer of cement to trucks at the New Truck Loading Station	880-14-04-001	Cement	Dust collector (217)	Filling spout is clamped to truck, so 100% capture efficiency	299,684	0.003	0.0011	0.00017	99%	1.1E-01	4.5E-01	4.1E-02	1.6E-01	6.2E-03	2.5E-02	1.1E-03	4.5E-03	4.1E-04	1.6E-03	6.2E-05	2.5E-04
Total											**1.53**	**6.16**	**0.54**	**2.18**	**0.10**	**0.42**	**0.02**	**0.08**	**0.01**	**0.03**	**1.57E-3**	**0.01**

Notes:

AP-42, Table 11.19.2-2, Conveyor Transfer Point and Tertiary Crushing

$PM_{2.5}$ emissions based on the $PM_{2.5}/PM_{10}$ ratio of 0.053/0.35 from AP-42, 13.2.4, for clinker and cement handling.

Wet (controlled) material emission factors used since incoming material has a moisture content of at least 1.5%

Uncontrolled material emission factors used for clinker and cement

Cement manufacturing is a continuous, steady-state process operating throughout the year; short-term emissions, however, conservatively were calculated to be 9% higher than long-term emissions.

CEMEX
Wampum Cement Plant
Emergency Engines

Source ID - 274

Assumptions

Annual Operating Schedule	500	hours/year, including potential emergency use
Power Rating	1,340	bhp
Power Rating	1,000	kW
Maximum Sulfur Content (S)	15	ppmw
Max Fuel Consumption	66.66	gal/hr
Max Fuel Consumption	469.94	lb/hr
Heating Value of No. 2 Fuel Oil[1]	0.138	MMBtu/gal
Max Fuel Consumption	9.20	MMBtu/hr

Emission Rate = Emission Factor * Power rating * hours of operation / averaging period

Pollutant	Emission Factor	Units	Max Hourly Emission Rate (lb/hr)	Max. Annual Emission Rate (ton/yr)
NO_x [2]	9.36	g/hp-hr	27.67	6.92
CO [2]	0.73	g/hp-hr	2.17	0.54
VOC [2]	0.02	g/hp-hr	0.054	0.0135
$PM/PM_{10}/PM_{2.5}$ [2]	0.038	g/hp-hr	0.112	0.0281
SO_2 [3]			0.014	0.0035
CO_2 [4]	73.96	kg/MMBtu	1500	375
CH_4 [4]	3.0E-03	kg/MMBtu	0.06	0.015
N_2O [4]	6.0E-04	kg/MMBtu	0.01	0.003
CO_2e [5]			1505	376

[1] Default high heat value based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.
[2] Manufacturer's specifications
[3] Calculated based on maximum fuel sulfur content and max fuel consumption
[4] GHG factors based on Tables C-1 and C-2 of 40 CFR 98 Mandatory Greenhouse Gas Reporting
[5] Global Warming Potential factors based on Table A-1 of 40 CFR 98 Mandatory Greenhouse Gas Reporting.

CEMEX
Wampum Cement Plant
Storage Piles

Wind Erosion:

Source ID	Pile Material	Pile Area (A) (acres)	Wind Speed > 12 mph (f) (%)	Rain Days (p) (days/yr)	Silt Content (s) (%)	Active Days (n) (days/yr)	Control Factor [1] (%)	TSP Emission Factor (lb/acre/day)	Uncontrolled Emissions						Controlled Emissions					
									PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)
180	Limestone	0.09	18	150.00	1.6	365.00	90	0.20	0.01	0.004	0.001	0.00	0.002	0.000	0.001	0.0004	0.0001	0.00	0.002	0.000
181	Coal	0.05	18	150.00	2.2	365.00	90	0.27	0.005	0.002	0.0004	0.00	0.001	0.0002	0.001	0.0002	0.0000	0.00	0.001	0.000

Reference: Wind Erosion Emissions derived from "Control of Open Fugitive Dust Sources", EPA-450/3-88-008, p. 4-17

$$EF = 1.7\left(\frac{s}{1.5}\right)\left(\frac{f}{15}\right)\left(\frac{365-p}{235}\right)\left(1-\frac{C}{100}\right)$$

PM_{10} fraction = 0.47 Reference: AP-42 Section 13.2.4
$PM_{2.5}$ fraction = 0.07 Reference: AP-42 Section 13.2.4

Where:
EF = PM emissions factor (lbs/acre/day)
s = Silt content of the aggregate (%) Reference: AP-42, Table 13.2.4-1
f = Percent of time that the unobstructed wind speed exceeds 12 mph at the mean pile height Reference: KYNG 1/1/13 to 12/1/17
p = Number of days with >= 0.01 in. of precipitation per year Reference: AP-42, Figure 13.2.1-2
C = Overall control efficiency (%)

and $$E = A \times n \times \frac{EF}{2000}$$

Where:
E = Emissions (tons/year)
A = Size of the pile (acres)
n = Number of days per year the pile is continuously active

[1] 90% Control based on enclosure.

Material Transfer:

Source ID	Pile Material and Transfer	Maximum Hourly Tons	Annual TPY	Average Wind Speed (U) (mph)	Moisture (M) (%)	Control Factor [1] (%)	PM Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	$PM_{2.5}$ Emission Factor (lb/ton)	Uncontrolled Emissions						Controlled Emissions					
										PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)
180	Limestone Pile - loading (20% of LS)	36	312,075	8.9	1.2	90	0.01025	0.00485	0.00073	0.365	0.173	0.026	1.599	0.756	0.114	0.036	0.017	0.003	0.160	0.076	0.011
	Limestone Pile - loadout (20% of LS)	36	312,075	8.9	1.2	90	0.01025	0.00485	0.00073	0.365	0.173	0.026	1.599	0.756	0.114	0.036	0.017	0.003	0.160	0.076	0.011
Maximum (assume not simultaneous)										**0.36**	**0.17**	**0.03**	**1.60**	**0.76**	**0.11**	**0.04**	**0.02**	**0.00**	**0.16**	**0.08**	**0.01**
181	Coal Pile - loading (20% of coal)	4	36,500	8.9	5.0	90	0.00139	0.00066	0.00010	0.006	0.003	0.000	0.025	0.012	0.002	0.001	0.000	0.000	0.003	0.001	0.000
	Coal Pile - loadout (20% of coal)	4	36,500	8.9	5.0	90	0.00139	0.00066	0.00010	0.006	0.003	0.000	0.025	0.012	0.002	0.001	0.000	0.000	0.003	0.001	0.000
Maximum (assume not simultaneous)										**0.01**	**0.00**	**0.00**	**0.03**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Reference: AP-42 Section 13.2.4, Drop Operation

$E = k\ (0.0032)\ (U/5)^{1.3} / (M/2)^{1.4}$ Reference: AP-42 Section 13.2.4

k = 0.74 TSP
0.35 PM10
0.053 PM2.5
U = Average Wind Speed Reference: KYNG 1/1/13 to 12/1/17
M = Moisture Reference: Historical Wampum data used in EI

[1] 70% Control based on wet material. Water spray use as necessary.

Total Emissions:

Source ID	Uncontrolled Emissions						Controlled Emissions					
	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)
180	0.37	0.18	0.03	1.60	0.76	0.11	0.04	0.02	0.00	0.16	0.08	0.01
181	0.011	0.005	0.001	0.028	0.013	0.002	0.001	0.001	0.000	0.005	0.002	0.000

CEMEX
Wampum Cement Plant
Roadway Emissions - Paved Roads

Source ID - 185

Road Segment	Road Length (mi)	Description	No. of Passes	Silt Loading (g/m2)	Empty Vehicle Wt (tons)	Loaded Vehicle Wt (tons)	Mean Vehicle Weight (tons)	Vehicle Weighted Average Weight (tons)	Material Net (tons)	Material (tpy)	Material Trips (trips/yr)	Total Mileage (VMT/yr)	PM Emission Factor (lb/VMT)	PM_{10} Emission Factor (lb/VMT)	$PM_{2.5}$ Emission Factor (lb/VMT)
A	0.045	Limestone, full and empty	2	12.0	15	40	27.5	27.5	25	1,560,375	62,415	5,674			
	0.045	Shale, full and empty	2	12.0	15	40	27.5		25	191,625	7,665	697			
												6,371	2.78	0.56	0.14
B	0.099	Limestone, full	1	12.0		40	40.0	40.0	25	1,560,375	62,415	6,194			
	0.099	Shale, full	1	12.0		40	40.0		25	191,625	7,665	761			
												6,955	4.08	0.82	0.20
C	0.027	Limestone, full	1	12.0		40	40.0	37.3	25	1,560,375	62,415	1,690			
	0.027	Shale, full	1	12.0		40	40.0		25	191,625	7,665	208			
	0.027	Pea gravel/sand, full and empty	2	12.0	15	40	27.5		25	27,375	1,095	59			
	0.027	Iron mill scale, full and empty	2	12.0	15	40	27.5		25	4,563	183	10			
	0.027	Slag, full and empty	2	12.0	15	40	27.5		25	9,125	365	20			
	0.027	Gypsum, full and empty	2	12.0	15	40	27.5		25	18,250	730	40			
	0.027	Coal, full and empty	2	12.0	15	40	27.5		25	182,500	7,300	395			
												2,422	3.80	0.76	0.19
D	0.105	Limestone, empty	1	12.0	15		15.0	15.0	25	1,560,375	62,415	6,537			
	0.105	Shale, empty	1	12.0	15		15.0		25	191,625	7,665	803			
												7,340	1.50	0.30	0.07
E	0.020	Packaged cement - full	1	12.0		40	40.0	40.0	25	119,874	4,795	97			
	0.020	Truck bulk cement (E/W) - full	1	12.0		40	40.0		25	599,368	23,975	486			
												583	4.08	0.82	0.20
F	0.010	Pea gravel/sand, full and empty	2	12.0	15	40	27.5	27.5	25	27,375	1,095	22			
	0.010	Iron mill scale, full and empty	2	12.0	15	40	27.5		25	4,563	183	4			
	0.010	Gypsum, full and empty	2	12.0	15	40	27.5		25	18,250	730	15			
												40	2.78	0.56	0.14
G	0.053	Pea gravel/sand, empty	1	12.0	15		15.0	15.0	25	54,750	2,190	116			
	0.053	Iron mill scale, empty	1	12.0	15		15.0		25	9,125	365	19			
	0.053	Slag, empty	1	12.0	15		15.0		25	9,125	365	19			
	0.053	Gypsum, empty	1	12.0	15		15.0		25	36,500	1,460	77			
	0.053	Coal, empty	1	12.0	15		15.0		25	182,500	7,300	386			
												617	1.50	0.30	0.07
H	0.015	Packaged cement - full	1	12.0		40	40.0	19.2	25	119,874	4,795	73			
	0.015	Truck bulk cement (E/W) - empty	1	12.0	15		15.0		25	599,368	23,975	363			
												436	1.93	0.39	0.09
I	0.079	Truck bulk cement (all) - empty	1	12.0	15		15.0	15.0	25	899,053	35,962	**2,847**	1.50	0.30	0.07

CEMEX
Wampum Cement Plant
Roadway Emissions - Paved Roads

Source ID - 185

Road Segment	Road Length (mi)	Description	No. of Passes	Silt Loading (g/m2)	Empty Vehicle Wt (tons)	Loaded Vehicle Wt (tons)	Mean Vehicle Weight (tons)	Vehicle Weighted Average Weight (tons)	Material Net (tons)	Material (tpy)	Material Trips (trips/yr)	Total Mileage (VMT/yr)	PM Emission Factor (lb/VMT)	PM_{10} Emission Factor (lb/VMT)	$PM_{2.5}$ Emission Factor (lb/VMT)
J	0.027	Pea gravel/sand, empty	1	12.0	15		15.0	34.0	25	54,750	2,190	60			
	0.027	Iron mill scale, empty	1	12.0	15		15.0		25	9,125	365	10			
	0.027	Slag, empty	1	12.0	15		15.0		25	9,125	365	10			
	0.027	Gypsum, empty	1	12.0	15		15.0		25	36,500	1,460	40			
	0.027	Coal, empty	1	12.0	15		15.0		25	182,500	7,300	199			
	0.027	Lime, empty	1	12.0	15		15.0		18	6,570	365	10			
	0.027	Carbon, empty	1	12.0	15		15.0		18	6,570	365	10			
	0.027	Ammonia, empty	1	12.0	15		15.0		34.2	12,483	365	10			
	0.027	Packaged cement - full	1	12.0		40	40.0		25	119,874	4,795	131			
	0.027	Truck bulk cement (all) - full	1	12.0		40	40.0		25	899,053	35,962	981			
												1,460	3.46	0.69	0.17
K	0.048	Packaged cement - full	1	12.0		40	40.0	40.0	25	119,874	4,795	232			
	0.048	Truck bulk cement (all) - full	1	12.0		40	40.0		25	899,053	35,962	1,744			
												1,976	4.08	0.82	0.20
L	0.008	Pea gravel/sand, full and empty	2	12.0	15	40	27.5	27.5	25	54,750	2,190	37			
	0.008	Iron mill scale, full and empty	2	12.0	15	40	27.5		25	9,125	365	6			
	0.008	Slag, full and empty	2	12.0	15	40	27.5		25	9,125	365	6			
	0.008	Gypsum, full and empty	2	12.0	15	40	27.5		25	36,500	1,460	24			
	0.008	Coal, full and empty	2	12.0	15	40	27.5		25	182,500	7,300	122			
	0.008	Lime, empty and full	2	12.0	15	33	24.0		18	6,570	365	6			
	0.008	Carbon, empty and full	2	12.0	15	33	24.0		18	6,570	365	6			
	0.008	Ammonia, empty and full	2	12.0	15	49	32.1		34.2	12,483	365	6			
	0.008	Packaged cement - empty and full	2	12.0	15	40	27.5		25	119,874	4,795	80			
	0.008	Truck bulk cement (all) - empty and full	2	12.0	15	40	27.5		25	899,053	35,962	599			
												892	2.78	0.56	0.14
O	0.017	Pea gravel/sand, full and empty	2	12.0	15	40	27.5	27.2	25	27,375	1,095	38			
	0.017	Iron mill scale, full and empty	2	12.0	15	40	27.5		25	4,563	183	6			
	0.017	Gypsum, full and empty	2	12.0	15	40	27.5		25	18,250	730	25			
	0.017	Lime, empty and full	2	12.0	15	33	24.0		18	6,570	365	13			
	0.017	Carbon, empty and full	2	12.0	15	33	24.0		18	6,570	365	13			
	0.017	Ammonia, empty and full	2	12.0	15	49	32.1		34.2	12,483	365	13			
												107	2.75	0.55	0.14
P	0.020	Pea gravel/sand, full and empty	2	12.0	15	40	27.5	27.3	25	27,375	1,095	44			
	0.020	Iron mill scale, full and empty	2	12.0	15	40	27.5		25	4,563	183	7			
	0.020	Gypsum, full and empty	2	12.0	15	40	27.5		25	18,250	730	29			
	0.020	Lime, full	1	12.0	15	33	24.0		18	6,570	365	7			
	0.020	Carbon, full	1	12.0	15	33	24.0		18	6,570	365	7			
	0.020	Ammonia, full	1	12.0	15	49	32.1		34.2	12,483	365	7			
												103	2.77	0.55	0.14
Q	0.052	Lime, empty	1	12.0	15		15.0	15.0	18	6,570	365	18.9			
	0.052	Carbon, empty	1	12.0	15		15.0		18	6,570	365	18.9			
	0.052	Ammonia, empty	1	12.0	15		15.0		34.2	12,483	365	18.9			
												57	1.50	0.30	0.07
U	0.149	Packaged cement - empty	1	12.0	15		15.0	15.0	25	119,874	4,795	**714**	1.50	0.30	0.07
V	0.009	Packaged cement - full	1	12.0		40	40.0	40.0	25	119,874	4,795	**45**	4.08	0.82	0.20
W	0.019	Truck bulk cement (new) - empty	1	12.0	15		15.0	15.0	25	299,684	11,987	**223**	1.50	0.30	0.07
X	0.034	Truck bulk cement (new) - full	1	12.0		40	40.0	40.0	25	299,684	11,987	**408**	4.08	0.82	0.20

Source ID - 185

CEMEX
Wampum Cement Plant
Roadway Emissions - Paved Roads

Source ID - 185

				Uncontrolled						Controlled					
Road Segment	Road Length (mi)	Description	Control Efficiency (%)	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	PM Emissions (lb/hr)	PM_{10} Emissions (lb/hr)	$PM_{2.5}$ Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)
A	0.045	Limestone, full and empty													
	0.045	Shale, full and empty													
			95%	5.7	1.1	0.3	9	2	0.4	0.3	0.06	0.01	0.44	0.09	0.02
B	0.099	Limestone, full													
	0.099	Shale, full													
			95%	9.1	1.8	0.4	14	3	0.7	0.5	0.09	0.02	0.71	0.14	0.03
C	0.027	Limestone, full													
	0.027	Shale, full													
	0.027	Pea gravel/sand, full and empty													
	0.027	Iron mill scale, full and empty													
	0.027	Slag, full and empty													
	0.027	Gypsum, full and empty													
	0.027	Coal, full and empty													
			95%	2.9	0.6	0.1	5	0.9	0.2	0.1	0.03	0.01	0.23	0.05	0.01
D	0.105	Limestone, empty													
	0.105	Shale, empty													
			95%	3.5	0.7	0.2	6	1	0.3	0.2	0.04	0.01	0.28	0.06	0.01
E	0.020	Packaged cement - full													
	0.020	Truck bulk cement (E/W) - full													
			95%	0.8	0.2	0.0	1	0.238	0.058	0.038	0.008	0.002	0.06	0.01	0.00
F	0.010	Pea gravel/sand, full and empty													
	0.010	Iron mill scale, full and empty													
	0.010	Gypsum, full and empty													
			95%	0.04	0.0072	0.0018	0.0561	0.0112	0.0028	0.0018	0.0004	0.0001	0.0028	0.0006	0.0001
G	0.053	Pea gravel/sand, empty													
	0.053	Iron mill scale, empty													
	0.053	Slag, empty													
	0.053	Gypsum, empty													
	0.053	Coal, empty													
			95%	0.30	0.0593	0.0146	0.4628	0.0926	0.0227	0.0148	0.0030	0.0007	0.0231	0.0046	0.0011
H	0.015	Packaged cement - full													
	0.015	Truck bulk cement (E/W) - empty													
			95%	0.3	0.1	0.0	0	0.084	0.021	0.013	0.003	0.001	0.02	0.00	0.00
I	0.079	Truck bulk cement (all) - empty	95%	1.4	0.3	0.1	2	0.427	0.105	0.068	0.014	0.003	0.11	0.02	0.01

CEMEX
Wampum Cement Plant
Roadway Emissions - Paved Roads

Source ID - 185

				Uncontrolled						Controlled					
Road Segment	**Road Length (mi)**	**Description**	**Control Efficiency (%)**	**PM Emissions (lb/hr)**	**PM_{10} Emissions (lb/hr)**	**$PM_{2.5}$ Emissions (lb/hr)**	**PM Emissions (tpy)**	**PM_{10} Emissions (tpy)**	**$PM_{2.5}$ Emissions (tpy)**	**PM Emissions (lb/hr)**	**PM_{10} Emissions (lb/hr)**	**$PM_{2.5}$ Emissions (lb/hr)**	**PM Emissions (tpy)**	**PM_{10} Emissions (tpy)**	**$PM_{2.5}$ Emissions (tpy)**
J	0.027	Pea gravel/sand, empty													
	0.027	Iron mill scale, empty													
	0.027	Slag, empty													
	0.027	Gypsum, empty													
	0.027	Coal, empty													
	0.027	Lime, empty													
	0.027	Carbon, empty													
	0.027	Ammonia, empty													
	0.027	Packaged cement - full													
	0.027	Truck bulk cement (all) - full													
			95%	1.62	0.32	0.079	2.52	0.50	0.12	0.08	0.02	0.004	0.13	0.025	0.006
K	0.048	Packaged cement - full													
	0.048	Truck bulk cement (all) - full													
			95%	2.6	0.5	0.1	4	0.806	0.198	0.129	0.026	0.006	0.20	0.04	0.01
L	0.008	Pea gravel/sand, full and empty													
	0.008	Iron mill scale, full and empty													
	0.008	Slag, full and empty													
	0.008	Gypsum, full and empty													
	0.008	Coal, full and empty													
	0.008	Lime, empty and full													
	0.008	Carbon, empty and full													
	0.008	Ammonia, empty and full													
	0.008	Packaged cement - empty and full													
	0.008	Truck bulk cement (all) - empty and full													
			95%	0.80	0.16	0.039	1.2	0.25	0.061	0.040	0.0080	0.0020	0.0620	0.0124	0.0030
O	0.017	Pea gravel/sand, full and empty													
	0.017	Iron mill scale, full and empty													
	0.017	Gypsum, full and empty													
	0.017	Lime, empty and full													
	0.017	Carbon, empty and full													
	0.017	Ammonia, empty and full													
			95%	0.1	0.019	0.0046	0.1472	0.0294	0.0072	0.0047	0.0009	0.0002	0.0074	0.0015	0.0004
P	0.020	Pea gravel/sand, full and empty													
	0.020	Iron mill scale, full and empty													
	0.020	Gypsum, full and empty													
	0.020	Lime, full													
	0.020	Carbon, full													
	0.020	Ammonia, full													
			95%	0.09	0.018	0.0045	0.1418	0.0284	0.0070	0.0045	0.0009	0.0002	0.0071	0.0014	0.0003
Q	0.052	Lime, empty													
	0.052	Carbon, empty													
	0.052	Ammonia, empty													
			95%	0.0272	0.0054	0.0013	0.0425	0.0085	0.0021	0.0014	0.0003	0.0001	0.0021	0.0004	0.0001
U	0.149	Packaged cement - empty	95%	0.3431	0.069	0.017	0.54	0.11	0.026	0.0172	0.0034	0.0008	0.0268	0.0054	0.0013
V	0.009	Packaged cement - full	95%	0.0589	0.012	0.0029	0.09	0.018	0.0045	0.0029	0.0006	0.0001	0.0046	0.0009	0.0002
W	0.019	Truck bulk cement (new) - empty	95%	0.1072	0.021	0.0053	0.17	0.033	0.0082	0.0054	0.0011	0.0003	0.0084	0.0017	0.0004
X	0.034	Truck bulk cement (new) - full	95%	0.5331	0.107	0.0262	0.83	0.166	0.041	0.0267	0.0053	0.0013	0.0416	0.0083	0.0020
Source ID - 185			**Total Emissions**	**30.2**	**6.0**	**1.5**	**47.2**	**9.4**	**2.3**	**1.5**	**0.30**	**0.07**	**2.4**	**0.47**	**0.12**

CEMEX
Wampum Cement Plant
Roadway Emissions - Paved Roads

Source ID - 185

Road Segment	Road Length (mi)	Description	No. of Passes	Silt Loading (g/m2)	Empty Vehicle Wt (tons)	Loaded Vehicle Wt (tons)	Mean Vehicle Weight (tons)	Vehicle Weighted Average Weight (tons)	Material Net (tons)	Material (tpy)	Material Trips (trips/yr)	Total Mileage (VMT/yr)	PM Emission Factor (lb/VMT)	PM_{10} Emission Factor (lb/VMT)	$PM_{2.5}$ Emission Factor (lb/VMT)

Calculation Basis:

$E = [k(sL)^{0.91} \times (W)^{1.02}](1 - P/4N)$ *Reference: AP 42, 13.2.1, Paved Roads, Jan. 2011, Equation (2)*

Where:

E = particulate emission factor

k = particle size multiplier for particle size range and units of interest

PM 0.011

PM_{10} 0.0022

$PM_{2.5}$ 0.00054

sL = road surface silt loading (grams per square meter) (g/m2) *Reference: AP 42, Table 13.2.1-3, Concrete Plant Roads*

sL = 12.0

W = average weight (tons) of the vehicles traveling the road

P = mean number of days with at least 0.01 in of precipitation *Reference: AP 42, Figure 13.2.1-2*

P = 150

N = number of days in the averaging period, 365 days for annual

A control efficiency of 95% was used to account for watering and/or chemical dust suppression on unpaved roads and implementation of a FDP.

Assume trucks deliver 5 day/week, 12 hr/day

CEMEX
Wampum Cement Plant
Unpaved Roads

Source ID - **184**

Road Segment	Road Length (mi)	Description	No. of Passes	Surface Silt Content (%)	Empty Vehicle Wt (tons)	Loaded Vehicle Wt (tons)	Mean Vehicle Weight (tons)	Vehicle Weighted Average Weight (tons)	Material Net (tons)	Material (tpy)	Material Trips (trips/yr)	Total Mileage (mi/yr)	PM Emission Factor (lb/VMT)	PM_{10} Emission Factor (lb/VMT)	$PM_{2.5}$ Emission Factor (lb/VMT)
N	0.18	Pea gravel/sand, full	1	9.15		40	40	39.9	25	54,750	2,190	386			
	0.18	Iron mill scale, full	1	9.15		40	40		25	9,125	365	64			
	0.18	Slag, full	1	9.15		40	40		25	9,125	365	64			
	0.18	Gypsum, full	1	9.15		40	40		25	36,500	1,460	257			
	0.18	Coal, full	1	9.15		40	40		25	182,500	7,300	1,286			
	0.18	Lime, full	1	9.15		33	33		18	6,570	365	64			
	0.18	Carbon, full	1	9.15		33	33		18	6,570	365	64			
	0.18	Ammonia, full	1	9.15		49.2	49.2		34.2	12,483	365	64			
												2,250	7.65	2.22	0.22
M	0.05	Pea gravel/sand, full and empty	2	9.15	15	40	27.5	27.43	25	54,750	2,190	222			
	0.05	Iron mill scale, full and empty	2	9.15	15	40	27.5		25	9,125	365	37			
	0.05	Slag, full and empty	2	9.15	15	40	27.5		25	9,125	365	37			
	0.05	Gypsum, full and empty	2	9.15	15	40	27.5		25	36,500	1,460	148			
	0.05	Coal, full and empty	2	9.15	15	40	27.5		25	182,500	7,300	741			
	0.05	Lime, empty and full	2	9.15	15	33	24.0		18	6,570	365	37			
	0.05	Carbon, empty and full	2	9.15	15	33	24.0		18	6,570	365	37			
	0.05	Ammonia, empty and full	2	9.15	15	49.2	32.1		34.2	12,483	365	37			
												1,297	6.46	1.87	0.19
R	0.16	Lime, empty and full	2	9.15	15	33	24.0	26.70	18	6,570	365	118			
	0.16	Carbon, empty and full	2	9.15	15	33	24.0		18	6,570	365	118			
	0.16	Ammonia, empty and full	2	9.15	15	49.2	32.1		34.2	12,483	365	118			
												353.4	6.38	1.85	0.19
S	0.10	Lime, empty	1	9.15	15		15.0	15	18	6,570	365	37			
	0.10	Carbon, empty	1	9.15	15		15.0		18	6,570	365	37			
	0.10	Ammonia, empty	1	9.15	15		15.0		34.2	12,483	365	37			
												112.0	4.93	1.43	0.14
T	0.05	Lime, full	1	9.15		33	33.0	38.40	18	6,570	365	19			
	0.05	Carbon, full	1	9.15		33	33.0		18	6,570	365	19			
	0.05	Ammonia, full	1	9.15		49.2	49.2		34.2	12,483	365	19			
												57.9	7.52	2.18	0.22

Source ID - **184**

CEMEX
Wampum Cement Plant
Unpaved Roads

Source ID - 184				Uncontrolled						Controlled					
Road Segment	**Road Length (mi)**	**Description**	**Control Efficiency (%)**	**PM Emissions (lb/hr)**	**PM_{10} Emissions (lb/hr)**	**$PM_{2.5}$ Emissions (lb/hr)**	**PM Emissions (tpy)**	**PM_{10} Emissions (tpy)**	**$PM_{2.5}$ Emissions (tpy)**	**PM Emissions (lb/hr)**	**PM_{10} Emissions (lb/hr)**	**$PM_{2.5}$ Emissions (lb/hr)**	**PM Emissions (tpy)**	**PM_{10} Emissions (tpy)**	**$PM_{2.5}$ Emissions (tpy)**
N	0.18	Pea gravel/sand, full													
	0.18	Iron mill scale, full													
	0.18	Slag, full													
	0.18	Gypsum, full													
	0.18	Coal, full													
	0.18	Lime, full													
	0.18	Carbon, full													
	0.18	Ammonia, full													
			95%	5.5	1.6	0.2	8.6	2.5	0.25	0.28	0.08	0.008	0.43	0.12	0.012
M	0.05	Pea gravel/sand, full and empty													
	0.05	Iron mill scale, full and empty													
	0.05	Slag, full and empty													
	0.05	Gypsum, full and empty													
	0.05	Coal, full and empty													
	0.05	Lime, empty and full													
	0.05	Carbon, empty and full													
	0.05	Ammonia, empty and full													
			95%	2.7	0.8	0.1	4.2	1.2	0.12	0.13	0.039	0.004	0.21	0.061	0.006
R	0.16	Lime, empty and full													
	0.16	Carbon, empty and full													
	0.16	Ammonia, empty and full													
			95%	0.7	0.2	0.02	1.1	0.3	0.03	0.04	0.0105	0.0010	0.06	0.016	0.0016
S	0.10	Lime, empty													
	0.10	Carbon, empty													
	0.10	Ammonia, empty													
			95%	0.2	0.051	0.005	0.3	0.1	0.0080	0.0088	0.0026	0.0003	0.014	0.0040	0.0004
T	0.05	Lime, full													
	0.05	Carbon, full													
	0.05	Ammonia, full													
			95%	0.1	0.04	0.00	0.2	0.1	0.01	0.01	0.00	0.00	0.01	0.0032	0.0003
Source ID -	**184**		**Total Emissions**	**9.24**	**2.68**	**0.27**	**14.41**	**4.18**	**0.42**	**0.46**	**0.13**	**0.01**	**0.72**	**0.21**	**0.02**

Calculation Basis:

E = k * (s/12)^a * (W/3)^b * (365 - P)/365

where:

E = emission factor for for industrial unpaved roads, lb/VMT

k = particle size multiplier

a, b = constants for specific partical size

W = average vehicle weight, tons

s = surface material silt content, %

s = 9.15 %

P = number of days with >= 0.01 in precipitation

P = 150 days

Constant	PM-30	PM-10	PM-2.5
k	4.9	1.5	0.15
a	0.7	0.9	0.9
b	0.45	0.45	0.45

Emission factors from AP-42 Section 13.2.2 (12/03), Equations (1a) & (2).

Silt content based on stone quarrying and processing, and average of plant road and haul road (Table 13.2.2-1).

A control efficiency of 95% was used to account for watering and/or chemical dust suppression on unpaved roads and implementation of a FDP.

Assume trucks deliver 5 day/week, 12 hr/day

CEMEX
Wampum Cement Plant
Cooling Tower

Cooling Tower PM Calculation Variables

Variable	Value	Units	Reference	
Drift Eliminator Efficiency	0.001%	percent		
Cooling Water Circulation Rate	352	gallons/min	Design Data	
Annual Operation	8,760	hours/yr	Design Data	
Total Dissolved Solids (TDS) concentration	1,500	ppm		

Constants:

Field	Value	Units
TDS Density (assumed to be equal to that of NaCl)	2.165	g/cm^3
	2.17E+06	g/m^3
Water Density	8.34	lb/gal
	1.00	g/cm^3
	1.00E+06	g/m^3
Percentage of PM that is PM_{10}	82.56%	From linear regression indicated on chart below with x = 10μm and y (calculated) = % mass smaller than 10 μm
Percentage of PM that is $PM_{2.5}$	0.358%	From linear regression indicated on chart below with x = 10μm and y (calculated) = % mass smaller than 2.5 μm

Pollutant	Drift rate (lb/hr) of cooling water	Cooling Tower Emissions	
		lb/hr	tpy
PM	1.8	0.0026	0.012
PM_{10}		2.18E-03	0.010
$PM_{2.5}$		9.45E-06	4.14E-05

Calculation Notes:
Drift rate calculated as: lb/hr drift = circulation rate (gpm) x 60 min/hr x drift eliminator efficiency (%) / 100 x water density (lb/gal)
Hourly Cooling tower PM emission rate calculated as: PM (lb/hr) = drift rate (lb/hr) x TDS concentration (ppm) / 10^6
Hourly PM10 and PM2.5 emission rates calculates as: lb/hr PM10 = lb/hr PM emission rate x % of PM that is PM10/100
Annual PM, PM10 and PM2.5 emission rates calculates as: tpy PM = lb/hr PM x annual operation (hrs/yr) / 2000

Sample Calculations:
Drift Rate (lb/hr) = 352 (gpm) x 60 (min/hr) x 0.00001 x 8.34 (lb/gal) = 1.8 (lb/hr)
Hourly Cooling Tower PM Emission Rate (lb/hr) = 1.8 (lb/hr) drift x 1500 (ppm TDS) / 10^6 = 0.003 (lb/hr)
Hourly PM10 Emission Rate (lb/hr) = 0.003 (lb/hr) x 0.8256 fraction PM that is PM10 = 0.002 (lb/hr)
Annual PM Emission Rate (tpy) = 0.003 (lb/hr) x 8760 (hours/year) / 2000 = 0.01 (tpy)

Wampum Cement Plant (cont.)
Cooling Tower

Particle Size Distribution Calculations for PM_{10}/PM Ratio [1]

EPRI Droplet Diameter (µm) [1]	EPRI Droplet Diameter (m) [2]	Droplet Volume (m^3) [3]	Solid Particle Mass (g) [4]	Solid Particle Volume (m^3) [5]	Solid Particle Diameter (m) [6]	Solid Particle Diameter (µm) [2]	EPRI % Mass Smaller (wt%) [1]
10	1.00E-05	5.23E-16	7.85E-13	3.63E-19	8.85E-07	0.88	0.00
20	2.00E-05	4.19E-15	6.28E-12	2.90E-18	1.77E-06	1.77	0.20
30	3.00E-05	1.41E-14	2.12E-11	9.79E-18	2.65E-06	2.65	0.23
40	4.00E-05	3.35E-14	5.02E-11	2.32E-17	3.54E-06	3.54	0.51
50	5.00E-05	6.54E-14	9.81E-11	4.53E-17	4.42E-06	4.42	1.82
60	6.00E-05	1.13E-13	1.70E-10	7.83E-17	5.31E-06	5.31	5.70
70	7.00E-05	1.80E-13	2.69E-10	1.24E-16	6.19E-06	6.19	21.35
90	9.00E-05	3.82E-13	5.72E-10	2.64E-16	7.96E-06	7.96	49.81
110	1.10E-04	6.97E-13	1.04E-09	4.83E-16	9.73E-06	9.73	70.51
130	1.30E-04	1.15E-12	1.72E-09	7.97E-16	1.15E-05	11.50	82.02
150	1.50E-04	1.77E-12	2.65E-09	1.22E-15	1.33E-05	13.27	88.01
180	1.80E-04	3.05E-12	4.58E-09	2.11E-15	1.59E-05	15.93	91.03
210	2.10E-04	4.85E-12	7.27E-09	3.36E-15	1.86E-05	18.58	92.47
240	2.40E-04	7.23E-12	1.09E-08	5.01E-15	2.12E-05	21.24	94.09
270	2.70E-04	1.03E-11	1.55E-08	7.14E-15	2.39E-05	23.89	94.69
300	3.00E-04	1.41E-11	2.12E-08	9.79E-15	2.65E-05	26.55	96.29
350	3.50E-04	2.24E-11	3.37E-08	1.55E-14	3.10E-05	30.97	97.01
400	4.00E-04	3.35E-11	5.02E-08	2.32E-14	3.54E-05	35.39	98.34
450	4.50E-04	4.77E-11	7.15E-08	3.30E-14	3.98E-05	39.82	99.07
500	5.00E-04	6.54E-11	9.81E-08	4.53E-14	4.42E-05	44.24	99.07
600	6.00E-04	1.13E-10	1.70E-07	7.83E-14	5.31E-05	53.09	100

Notes:

[1] Methodology and EPRI droplet and mass distribution from Reisman and Frisbie *Calculating Realistic PM10 emissions from Cooling Towers* (2000).

EPRI data based on test conducted with Brentwood Industries (drift eliminator manufacturer) in Electric Power Research Institute Houston, TX test facility in 1988.

[2] Converted using 1 m = 10^6 µm.

[3] Calculated as: droplet volume (m^3) = π * (4/3) * (Diameter / 2)^3

[4] Solid particle mass (g) = droplet volume (m^3) * water density (g/m^3) * TDS (ppm) / 10^6

[5] Solid particle volume (m^3) = solid particle mass (g) / solid particle density (g/m^3). Solid particle density = TDS density, taken as NaCl density.

[6] Diameter solid particle (m) = (solid particle volume (m^3) / (4/3) * π)^(1/3) * 2

Calculations for diameter of 1.00E-05 m

Droplet Volume (m^3) = π x (4/3) x (0.00001 /2)^3 = 5.23E-16 (m^3)

Solid Particle Mass (g) = 5.23E-16 (m^3) x 1(g/cm3) x 5000 (ppm) = 2.62E-12 (g)

Solid Particle Volume (m^3) =2.62E-12 (g) / 2165000 (g/m3) = 1.21E-18 (m^3)

Diameter Solid Particle (m) = 1.21E-18 (m^3) / (4/3) x π)^(1/3) x 2 = 1.32E-06 (m)

ATTACHMENT 7 COPY OF APPLICATION FEE CHECK

CEMEX Materials LLC
1501 Belvedere Road
West Palm Beach, FL 33406
Phone: (877) 777-4487

DATE: December 11, 2019
TRACE NUMBER: 2003652433
CHECK NUMBER: 23626170
AMOUNT PAID: $31,400.00

WWW.CEMEXVENDORS.COM

3445100005206001380003000000000

00138 22276 CKS NA 19344 - 0023626170 NNNNNNNNNNN 3445100006206 X338A1 C

PENNSYLVANIA DEP
AR DEPT
PO BOX 8762
HARRISBURG PA 17105-8762

VENDOR NO: 0000777330

Speed Payment Receipt by 7-10 Days!! Enroll in Direct Deposit!!
Send Banking Information on Company Letterhead or send voided check to:
MDTUSA@CEMEXUSA.COM or Fax to 561-584-6802

DATE	VENDOR INVOICE NUMBER	PURCHASE ORDER NUMBER	AMOUNT	DISCOUNT	NET AMOUNT
12/01/19	WAMPUM APPLICATI	4506867218	$31,400.00	$0.00	$31,400.00
		PLAN APPROVAL APPLICATION CS 4842677			
		TOTALS	**$31,400.00**	**$0.00**	**$31,400.00**

PLEASE DETACH BEFORE DEPOSITING CHECK

CEMEX Materials LLC
1501 Belvedere Road
West Palm Beach, FL 33406
Phone: (877) 777-4487

CHECK NUMBER 23626170

70-2322
719

December 11, 2019

*** VOID AFTER 180 DAYS ***

PAY TO THE ORDER OF: **PENNSYLVANIA DEP**

CHECK AMOUNT
$31,400.00

EXACTLY *********31,400 DOLLARS AND 00 CENTS

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JPMorgan Chase Bank, N.A.
Chicago, IL

⑈23626170⑈ ⑆071923226⑆ 0972584⑈

ATTACHMENT 8 AIR QUALITY ANALYSIS REPORT

January 2020

AIR QUALITY ANALYSIS

In Support of An Air Quality Plan Approval Application

CEMEX Construction Materials Atlantic, LLC
Wampum Cement Plant
2001 Portland Park
Lawrence County, Wampum, PA 16157-3913

Submitted To:
Pennsylvania Department of Environmental Protection
Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335

PROJECT NUMBER:
150266.02.01

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1.0 INTRODUCTION

CEMEX Construction Materials Atlantic, LLC (CEMEX) proposes to modernize its Wampum Cement manufacturing plant (the Wampum Plant) located in Wampum, Lawrence County, Pennsylvania (the Project). The Project proposes to replace three existing long dry kilns with a single five stage preheater/calciner kiln system and a clinker cooler. Other ancillary processes include both new equipment as well as refurbishment of existing equipment. The Project triggers PSD review and the requirement to conduct an air quality impact analysis (i.e., dispersion modeling) for NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$.

This predicted modeling results demonstrate that emissions associated with the Project will not cause or contribute to an exceedance of the NAAQS, or PSD increment consumption limits. The project is not expected to cause any significant general, commercial, residential or industrial growth in the area. This analysis indicate this Project will not adversely impact visibility, soils and vegetation, and Federal Class I areas.

2.0 PROJECT IDENTIFICATION INFORMATION

This document presents an analysis of the predicted air quality impacts from the reactivation of the Wampum Cement Plant. This air quality analysis (AQA) is summitted in support of the *Air Quality Plan Approval Application, CEMEX Construction Materials Atlantic, LLC, Wampum Cement Plant, Lawrence County, Pennsylvania, January 2020.*

POWER Engineers, Inc. (POWER) has prepared this AQA following written methodologies and procedures of the United States Environmental Protection Agency (EPA).

Applicant:	CEMEX Construction Materials Atlantic, LLC
Facility:	Wampum Cement Plant
Nearest City:	Wampum
County in Which Plant is Located:	Lawrence
Applicant's Modeler:	POWER Engineers, Inc.

3.0 PLOT PLAN

Plot plans illustrating the locations of Wampum Plant emission points are provided as Appendix A. Select Wampum Plant structures are identified in the figure provided as Appendix B.

4.0 AREA MAP

The following maps and figures illustrate the area surrounding the proposed Project:

- An area map showing the plant's property boundaries is provided as Appendix C,
- There are Federal Class I areas within 300 kilometers as illustrated in the map included as Appendix D,
- A map showing the locations of the proposed ambient air monitoring sites is provided as Appendix E.

5.0 AIR QUALITY MONITORING DATA

Current ambient air concentrations representative of the proposed Project site may be required for two distinct and separate purposes: (1) to demonstrate that the ambient air concentrations of PSD-significant pollutants are currently in compliance with the NAAQS and (2) for use in a full impact NAAQS modeling analysis of the proposed Project. Based on the Preliminary Impact Determination results in Section 9.1.2, background ambient air concentration data are required for NO_2, SO_2, PM_{10}, and $PM_{2.5.}$ CEMEX proposes to use ambient air quality data from an existing air quality monitoring station to establish representative background concentrations.

5.1 Representative Background Concentrations

In order to determine the cumulative impacts of the Project's emissions, the ambient background concentrations must be determined. The model-predicted impacts for the Project and offsite emission sources will be added to the ambient background concentration to determine the cumulative ambient impact for comparison against the NAAQS for each relevant criteria pollutant. The background concentrations must be representative of the Project site and were obtained from the most recent three years (2016 through 2018) of certified monitoring data from the most representative monitoring stations nearest to the Project site. The representativeness of each monitoring site to the Project site was justified based on EPA guidance provided in Section 8.3 (Background Concentrations) of the "*Guideline on Air Quality Models" (40 CFR Part 51, Appendix W)* and Section 2.4 (Use of Representative Air Quality Data) of the "*Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)*", *EPA-450/4-87-007*. Attention was given to EPA's May 20, 2014 memorandum "*Guidance for $PM_{2.5}$ Permit Modeling (EPA-454/B-14-001)*" for the justification of the $PM_{2.5}$ background monitoring site.

In general, three criteria are considered in evaluating the representativeness of ambient background data from ambient monitoring sites:

- Monitor location relative to the Project site and maximum impact areas;
- Quality of the data; and
- Timeliness of the data.

The ambient background monitors whose data were included in this analysis were selected based on quantitative and qualitative analyses using the three criteria listed above. Regarding timeliness, data for the most recent three complete calendar years (2016-2018) were evaluated.

In terms of quantitative analysis, county emissions estimates (for Lawrence County as well as nearby counties) for each criteria pollutant included in the modeling analysis were obtained from EPA's 2014 National Emission Inventory (NEI). Emissions estimates for the nearby counties were compared with the Lawrence County 2014 NEI emissions estimates on both a quantity of total emissions per county (annual tons) basis, as well as an "emissions density" (county-wide emissions in annual tons divided by the county area in square miles) basis. The total emissions and emissions density were typically lower for Lawrence County compared with surrounding counties.

The qualitative analysis involved a comparison of the areas immediately surrounding the monitoring sites and the Project site to determine which monitoring site was most representative of the Project site for each pollutant based on the commercial and industrial development density and significant topographical features.

Based on the review of candidate monitoring sites in Lawrence and nearby counties, the sites selected as representative of the Project site for each criteria pollutant are shown in Table 5-1.

TABLE 5-1 PROPOSED BACKGROUND CONCENTRATION

CONTAMINANT	MONITORING STATION	COUNTY/ STATE	DISTANCE TO PROJECT SITE (km)	AVERAGING PERIOD	BACKGROUND CONCENTRATION ($\mu g/m^3$)	FORM[1]
NO_2	Beaver Falls (42-007-0014)	Beaver / PA	14.5	1-Hour	72	3-Year Average of 98th Percentiles of the Daily 1-Hour Maximums 2016-2018
				Annual	17	1st High, 2018
SO_2	New Castle (42-073-0015)	Lawrence / PA	13.1	1-Hour	39	3-Year Average of 99th Percentiles of the Daily 1-Hour Maximums 2016-2018
PM_{10}	Beaver Falls (42-007-0014)	Beaver / PA	14.5	24-Hour	60	2nd High, 2016-2018
$PM_{2.5}$	Beaver Falls (42-007-0014)	Beaver / PA	14.5	24-Hour	19.3	3-Year Average of 98th Percentiles of the Daily Maximums 2016-2018
				Annual	9	3-Year Average of 1st Highs 2016-2018

1. EPA's website of "monitor values reports", https://www.epa.gov/outdoor-air-quality-data/monitor-values-report (accessed October 21, 2019).

The ambient background concentrations measured at these monitoring sites that were used in this analysis are presented in Table 5-1 and also included as a map, of monitor locations as Appendix E. The concentration data were obtained from EPA's website of "monitor values reports", https://www.epa.gov/outdoor-air-quality-data/monitor-values-report (accessed October 21, 2019). Note that the selected monitoring sites are located in areas with similar land use to the area around the Project site. Data from these monitors are anticipated to be conservative due to the presence of more emission sources (both point and area) in the region around the monitors.

5.2 PSD Ambient Monitoring Requirement

The *New Source Review Workshop Manual-Prevention of Significant Deterioration and Nonattainment Area Permitting; USEPA, Draft October 1990* (page C.16) states that continuous ambient monitoring data may be required unless "either (1) the predicted ambient impact, i.e., the highest modeled concentration for the applicable averaging time, caused by the proposed significant emissions increase (or significant net emissions increase), or (2) the existing ambient pollutant concentrations, are less than the prescribed significant monitoring value" (i.e., SMC value).

On January 22, 2013, the United States Court of Appeals for the District of Columbia Circuit granted a request from the EPA to vacate and remand to the EPA the portions of two PSD $PM_{2.5}$ rules [40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)] addressing select provisions of the $PM_{2.5}$ Significant Impact Levels (SILs) so that the EPA could voluntarily correct an error in these provisions. The EPA amended its regulations and removed the vacated the $PM_{2.5}$ SMC effective December 9, 2013.

6.0 MODELING EMISSIONS INVENTORY

6.1 On-Property Sources

The proposed Project emission sources are discussed in previous sections of this plan approval application. Emissions from the proposed new equipment are based on PTE. Emissions from the refurbished equipment are also conservatively based on PTE. There are no contemporaneous changes to the Plant being considered for the Project.

A copy of the emissions table for this Project is included as Appendix F. This table includes the project sources and their emissions (in metric units). The stack parameters for the modeled Project sources are summarized in Appendix G (in metric units). The table cross-references between the modeling identification numbers and the emission point numbers listed in the plan approval application.

6.2 Stack Parameter Justification

Each source was modeled at its physical release height or at the BPIP-calculated GEP stack height, whichever is lower.

6.2.1 Stack Parameters - Wampum Plant Sources

The emission release parameters for the Wampum Plant sources are presented below.

6.2.1.1 Point Sources

Point sources were modeled with exhaust parameter values (i.e., velocities, diameters, and temperatures) properly identified to calculate the buoyancy and momentum rise of their emissions. The stack parameter values were based on engineering design information.

6.2.1.2 Area Sources

Fugitive material storage and handling sources were modeled as area sources with appropriate release height.

6.2.1.3 Volume Sources

Emissions from onsite road sources were modeled using volume sources and following the EPA Memo on "*Haul Road Workgroup Final Report Submission to EPA-QAQPS" March 2, 2012*. Roads also were restricted to emit during early morning to late evening hours (see Section 6.2.8). The various road segments are depicted in Appendix H.

6.2.2 Plant Operating Conditions

The cement manufacturing process is a continuous, steady-state operation throughout the year (with infrequent planned outages, typically occurring more than a year apart). Process emissions associated with these infrequent outages are not greater than during normal operation.

6.2.3 Emergency Equipment Emissions

The Wampum Plant includes a diesel fuel-fired emergency engine onsite. Emissions associated with the emergency readiness testing of this engine were modeled.

CEMEX tests the emergency equipment according to the manufacturer recommended testing schedules. A typical testing schedule for emergency engines is testing the engine once per month for a period less than 60 minutes. The modeling will include a maximum of 60 minutes of testing emissions for the modeled 3-hour, 8- hour, and 24-hour averaging period. The 1-hour averaging period will not include emissions from the emergency engine per EPA guidance (i.e., *EPA's Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard; March 1, 2011*).

6.2.4 Modeling Source Groups

The source group ALL was modeled for the Project sources.

6.2.5 NO_X-to-NO_2 Conversion

Following guidance included in the EPA's *Guideline on Air Quality Models; Appendix W to 40 CFR Part 51; January 17, 2017;* the Tier 2 default Ambient Ratio Method 2 (ARM2) NO_X-to-NO_2 conversion (in Section 4.2.3.4 of Appendix W) was utilized within the AERMOD model. The Appendix W default minimum ambient NO_2/NO_X ratio of 0.5 and the maximum ambient ratio of 0.9 were used.

6.2.6 $PM_{2.5}$ Emissions

Guidance from the 2018 EPA Regional, State, and Local Modelers' Workshop in Boston, Massachusetts, June 5, 2018 and the EPA's *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program, April 30, 2019* were used to estimate secondary $PM_{2.5}$ impacts. MERPs derived using the EPA's photochemical modeling results for hypothetical sources located in Pennsylvania were used to estimate the air quality $PM_{2.5}$ impacts associated with project-related emissions of NO_X and SO_2. These conservative secondary $PM_{2.5}$ impact estimates were included in the preliminary impact determination, full impact NAAQS and full impact PSD increment consumption analyses.

6.2.7 Scaling Factors

Road emissions at the Wampum Plant were restricted to hour of day usage. Therefore, the expected time trucks will be delivering and receiving is expected to be between 5:00 am and 9:00 pm. This restriction is applicable to road emissions only.

7.0 MODELS PROPOSED AND MODELING TECHNIQUES

The American Meteorological Society / Environmental Protection Agency Regulatory Model (AERMOD), Version 19191, was used to perform the dispersion modeling in this AQA. AERMOD is the latest generation of atmospheric dispersion models suitable for industrial sources and is the model preferred by the EPA for such applications. To facilitate the running of AERMOD, the Providence/ORIS, LLC's "BEE-Line BEEST for Windows" graphic user interface (Version 12.00) was used.

7.1 Model Options

The following model options were used in the application of AERMOD:

A. Regulatory default option
B. Elevated terrain
C. Rural dispersion
D. Adjusted U*
E. ARM2 NO_X to NO_2 conversion

7.2 Building Wake Effects

Building downwash effects were included in the modeling based on guidance provided in the EPA's *User's Guide to the Building Profile Input Program, October 1993, EPA-454/R-93-038.* The EPA currently requires that all building downwash be determined using the EPA Building Profile Input Program (BPIPPRM) subroutine. Providence/Oris LLC's "BEE-Line BEEST for Windows" was used for calculating downwash parameters for this analysis. This program includes downwash software which uses the latest BPIPPRM subroutine (version 04274) in its calculations.

Information regarding the Wampum Plant structures was entered into the BPIP-based software program. Wampum Plant downwash structures that may affect the dispersion of emissions are listed in the table included as Appendix I. The downwash parameter values were calculated for each point source by the software program and inserted into the AERMOD input files in the appropriate locations and formats.

Downwash summary tables created by the BPIP subroutines are included as part of the electronic files included in the AQA as Appendix M.

7.3 Receptor Grids

The receptor grids used in the preliminary and full impacts analyses followed the guidelines provided in EPA's Appendix W. The NAD83 datum was used for the receptor UTM coordinates. Providence/ORIS, LLC's "BEE-Line BEEST for Windows" was used to calculate the appropriate domain boundaries. The EPA AERMAP (Version 18081) program was used to calculate (interpolate) the terrain elevations and local terrain maximums using 1-arc-second (~30 meter) United States Geological Survey (USGS) National Elevation Dataset (NED) data.

The receptor coverage utilized for the preliminary impact analyses consisted of the following:

- 1,000-meter spaced receptors to a distance of 50 kilometers from the Wampum Plant fence line to ensure that (1) the maximum predicted concentration is located, (2) all locations with predicted concentrations greater than the SILs were identified and (3) that concentration gradients associated with the project related emissions clearly decrease in magnitude outside of the AOIs,
- 100-meter spaced receptors to a distance of 5 kilometers from the Wampum Plant fence line,
- 25-meter spaced receptors along the Wampum Plant fence line.

These receptor grids were designed to capture the maximum off-property ground-level concentrations for all pollutants.

Only receptors with predicted concentrations greater than or equal to the respective SILs were included in the full impact NAAQS and PSD increment consumption analyses. Full impact modeling receptor grids were developed using the preliminary modeling output.

The modeling output includes an ASCII formatted data file containing the maximum predicted concentration at each model receptor. Using electronic spreadsheets, the maximum predicted highest 1st- high (H1H) concentrations for the 3-modeled years of meteorological prognostic data was determined for each receptor for the annual NO_2, 1-hour CO, 8-hour CO, 24-hour PM_{10}, annual PM_{10} (increment), 24- hour $PM_{2.5}$ (increment), annual $PM_{2.5}$ (increment), 3-hour SO_2, 24-hour SO_2, and annual SO_2 concentrations. A similar analysis was conducted for the predicted 3-year average 1-hour NO_2, 1-hour SO_2, 24-hour $PM_{2.5}$ (NAAQS), and annual $PM_{2.5}$ (NAAQS) concentrations. Both H1H and 3-year average $PM_{2.5}$ analyses were conducted to match the (different) forms of the PSD increment consumption limit and NAAQS. These spreadsheet analyses were used to determine whether an individual receptor has "significant" concentrations at any time during the modeled (3-year) period. If so, the receptor was included in the full impact modeling analysis.

Tier 1 estimates of the secondary $PM_{2.5}$ impacts calculated using the project-related NO_X and SO_2 precursor emissions were added to the direct $PM_{2.5}$ modeling results for each individual modeling receptor for the significant receptor determination analyses. This is conservative since secondary $PM_{2.5}$ formed through chemical reactions will occur in the atmosphere gradually over time (hours or days depending on atmospheric conditions and other variables) and the estimated secondary $PM_{2.5}$ impact will not be likely to occur near the receptors with direct $PM_{2.5}$ impacts that are greater than the SILs.

7.4 Meteorological Data

The initial meteorological data proposed for input to the AERMOD modeling system consisted of five years (2013 to 2017) of surface meteorological data measured at the NWS ASOS station at the Youngstown-Warren Regional Airport in Trumbull County, Ohio (KYNG; WBAN 14852), and upper air meteorological data measured at the Pittsburgh radiosonde station (WBAN 94823) north of the Pittsburgh International Airport.

KYNG is the closest ASOS station to the Project site within the glaciated Allegheny Plateau, being approximately 32 mi NW of the Project site. The Pittsburgh PA radiosonde station is the closest upper air station to the Project site, being approximately 25 mi SSE of the Project site.

The height of the main kiln stack at the Project site is expected to be about 345 ft above grade. With expected plume rises (following AERMOD methodologies) on the order of 250 ft to 2,000 ft, the height of the main kiln stack plume (i.e., about 1,450 ft to 3,200 ft above sea level) should be above all the terrain features the plume may encounter within the modeling domain.

However, preliminary AERMOD modeling using these initial NWS meteorological data has suggested that emissions from stacks lower than the main kiln stack also may have important impacts. As a result, we shifted from the initial NWS meteorological data to prognostic meteorological data (as recommended by EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W) to be more representative of the transport and dispersion of emissions from all sources at the proposed Project site.

The prognostic meteorological data consists of three years (2012 to 2014) of the Weather Research and Forecasting (WRF) model data developed by the Allegheny County Health Department (ACHD) for the recent SO_2 State Implementation Plan (SIP). The publicly available version of WRF, version 3.6.1, was used for the WRF modeling. A nested grid structure of three grids nested in a 3:1 nesting ratio (i.e., 36/12/4 km) was used in the WRF modeling. Data from the 4-km domain (which covered western Pennsylvania, including the location of the Project site, and portions of Ohio, West Virginia, Maryland and Virginia) was used as input to the AERMOD modeling system. The 4-km grid cell closest to the Project site is the most representative grid cell.

The WRF prognostic meteorological data were processed using the Mesoscale Model Interface Program (MMIF; version 3.4.1 (2019-03-11). The MMIF was implemented to output appropriate ONSITE, UPPERAIR and AERSURFACE-like files to be used as input to AERMOD's meteorological preprocessor, AERMET. Finally, the output files from MMIF were processed by AERMET (version 19191) to generate the appropriate input files for AERMOD. This MMIF and AERMET processing followed recommendations in the User's Manual – The Mesoscale Model Interface Program (MMIF) Version 3.4.1, 2019-03-11 (Ramboll US Corporation; 11 March 2019), EPA's Guidance on the Use of the Mesoscale Model Interface Program (MMIF) for AERMOD Applications (EPA-454/B-18-005; April 2018), and EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W).

A prognostic model evaluation was performed as recommended under EPA's Guideline on Air Quality Models (40 CFR Part 51, Appendix W), Section 8.4.5.2. The model performance evaluation, prepared by Ramboll US Corporation, is included within Appendix M.

Meteorology files are also provided as part of the electronic files included in the AQA as Appendix M.

8.0 MODELING ANALYSIS

8.1 Modeling Approach – Preliminary Impact Determination

A preliminary impact determination was conducted to commence the AQA. The purpose of the preliminary analysis is to determine whether proposed emissions from the Project sources have a "significant" impact on the existing air quality. The various preliminary modeling analyses are described in the sections below.

8.1.1 Significant Impact Level Justification

On January 22, 2013, the U.S. Court of Appeals for the District of Columbia Circuit granted a request from the EPA to vacate and remand to the EPA portions of two PSD $PM_{2.5}$ rules [40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)] addressing select provisions of the $PM_{2.5}$ SILs so that the EPA could voluntarily correct an error in these provisions. Accordingly, the EPA amended its regulations and removed the vacated $PM_{2.5}$ SILs effective December 9, 2013.

However, it should be noted that the Federal rule that defines when a major source or major modification is considered to cause or contribute to a violation of a NAAQS [40 CFR 51.165(b)(2)] was not vacated in the January 22, 2013 decision or December 9, 2013 amendment. Consistent with this definition, in the EPA's document entitled *Circuit Court Decision on $PM_{2.5}$ Significant Impact Levels and Significant Monitoring Concentrations, Questions and Answers, March 4, 2013*, the EPA states that applicants can continue to demonstrate that proposed $PM_{2.5}$ emissions do not contribute to existing violations of the

NAAQS by demonstrating that the proposed source's $PM_{2.5}$ impacts do not "significantly" contribute to existing $PM_{2.5}$ NAAQS violations or PSD increment consumption violations.

EPA has recommended $PM_{2.5}$ SILs in the document entitled Guidance of Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program, April 17, 2018. CEMEX proposes to use the EPA's recommended SILs in the NAAQS and PSD increment consumption analyses. These $PM_{2.5}$ SILs are summarized in Table 8-1.

TABLE 8-1 $PM_{2.5}$ SILS

POLLUTANT	AVERAGING PERIOD	SIL[1] (µg/m³)
PM 2.5	24-Hour	1.2
	Annual	0.2

[1].Technical Basis for the EPA's Development of the Significant Impact Thresholds for PM2.5 and Ozone, EPA-454/R-18-001, April 2018.

The technical justification for the EPA's $PM_{2.5}$ SILs is provided in *Technical Basis for the EPA's Development of the Significant Impact Thresholds for $PM_{2.5}$ and Ozone, EPA-454/R-18-001, April 2018.* The legal justification for the EPA's $PM_{2.5}$ SILs is provided in the EPA document *Legal Memorandum, Application of Significant Impact Levels in the Air Quality Demonstration for Prevention of Significant Deterioration Permitting under the Clean Air Act, April 17,2018.*

8.1.2 Modeled Emission Rates for Precursors (MERPs) Analysis

The secondary $PM_{2.5}$ was estimated using guidance from the EPA's *Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program, April 30, 2019, EPA-454/R-16-006*. MERPs were derived using the EPA's photochemical modeling results for hypothetical sources located in Pennsylvania and Ohio and were used to estimate the secondary $PM_{2.5}$ impacts associated with project-related emissions of NO_X, SO_2.

The EPA's final MERP guidance includes photochemical modeling results from four hypothetical sources that are located in eastern Ohio and southeastern Pennsylvania. As a conservative measure the MERPs analysis will include the nearest hypothetical source which is the Tuscarawas County source in Ohio. Additionally, the area is most similar to the Wampum Cement plant.

The Wampum plant includes long-term emissions of 861 tpy NO_X and 228 tpy SO_2. The vast majority of these emissions exhaust through an elevated stack. The emissions of SO_2 are closer to the modeled emissions for the EPA's 500 tpy hypothetical, and the NO_X emissions are closer to the modeled EPA's 1,000 tpy hypothetical. The 1,000 tpy and 500 tpy "High" hypothetical source modeling results for NO_X and SO_2, respectively, were used for this analysis.

The conservative secondary $PM_{2.5}$ impacts estimated using the MERP analysis were included in the preliminary impact determination, full impact NAAQS and full impact PSD increment consumption analyses. The MERP analysis estimates are provided in Section 9.1.1. The MERP analysis calculations are provided in Appendix J.

8.1.3 Area of Significant Impact (AOI) Analysis

A preliminary impact determination is conducted to determine if the predicted off-property concentrations associated with the proposed PSD-significant emissions from onsite (project related) sources are greater than the EPA's SILs. No further modeling is required to demonstrate compliance if the maximum predicted concentration, from the preliminary impact analysis, is below the SIL. If the maximum predicted concentration is equal to or greater than the SIL, a full impact modeling analysis is required that includes impacts from onsite sources and off-site. In addition to the direct inclusion of off-site source emissions in the full impact modeling analysis, contributions from off-site sources that may impact the AOI are accounted for using ambient air monitoring data (ambient background concentrations). The AOI is defined as all locations with predicted concentrations that are equal to or greater than the established SILs.

Preliminary impact determination modeling was conducted for PSD-significant emissions of NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$ to determine whether a full impact modeling analysis is required. The modeling results were used to determine whether the predicted concentrations are greater than the SIL for each pollutant and averaging period.

The AOI analysis results are provided in Section 9.1.2.

8.1.4 PSD Pre-Application Analysis

For PSD analyses, a preliminary impact determination is conducted to determine if the predicted off-property concentrations associated with the proposed increase in PSD-significant emissions are greater than the EPA's SMCs. If the maximum predicted concentration is less than the SMC, the demonstration is complete. If the maximum concentration is equal to or greater than the SMC, preconstruction ambient monitoring may be required unless data that are representative of existing air quality for the area are available.

Preliminary impact determination modeling was conducted for PSD-significant emissions of NO_2, CO SO_2, PM_{10}, $PM_{2.5}$ for comparison with the SMCs. The PSD pre-application analysis results are provided in Section 9.1.3.

8.2 Modeling Approach – Full Impact Analysis

Full impact modeling analyses were conducted for comparison with the NAAQS and PSD increment consumption limits for pollutants and averaging periods with preliminary impacts equal to or greater than the SIL. These modeling analyses are described in the sections below.

8.2.1 NAAQS Analysis

As discussed in Section 1, PSD review applies for proposed emissions of NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. NAAQS have been established for these pollutants. Compliance with the NAAQS must be demonstrated for emissions with PSD-significant emissions.

A preliminary impacts determination was first conducted using project related emissions to determine if a detailed NAAQS analysis is required. A full NAAQS impact analysis was then performed for applicable NO_2, SO_2, PM_{10}, and $PM_{2.5}$ emissions to predict ambient concentrations for comparison to the NAAQS. This analysis included emissions from the Wampum Plant and nearby offsite sources (see Section 8.2.3).

The full impact modeling analysis utilized only receptors with predicted concentrations equal to or greater than the SIL in the preliminary modeling analysis. Background concentrations were then added to the full impact modeling results.

The NAAQS analysis results are provided in Section 9.2.1.

8.2.2 PSD Increment Consumption Analysis

As discussed in Section 1, PSD review applies to the proposed emissions of NO_2, SO_2, PM_{10}, and $PM_{2.5}$. PSD increment consumption limits currently exist for these pollutants. Compliance with the PSD increment consumption limits must be demonstrated for emissions with PSD-significant emissions.

A preliminary impacts determination was first conducted using Project-related emissions to determine if a detailed PSD increment consumption analysis is required. A full increment impact analysis was then performed for applicable NO_2, PM_{10}, and $PM_{2.5}$ emissions to predict ambient concentrations for comparison to the PSD increment consumption limits. This analysis included PSD increment-consuming emissions from the Wampum Plant and nearby offsite sources (see Section 8.2.3).

The full impact modeling analysis utilized only receptors with predicted concentrations equal to or greater than the SIL in the preliminary modeling analysis.

The PSD increment consumption analysis results are provided in Section 9.2.2.

8.2.3 Off-Property Sources

Guidance from EPA's *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard, March 1, 2011, Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard, September 30, 2014* and *Guidance for $PM_{2.5}$ Permit Modeling (EPA-450/4-87-007)* was followed to develop a cumulative NAAQS impact assessment that includes both monitored and modeled contributions. In the 2011 document, the EPA states that the Guideline on Air Quality Models (40 CFR 51 Appendix W) implies a preference for use of ambient air quality data to account for background concentrations where possible (i.e. instead of explicitly modeling off-property sources). Based on the locations of the proposed representative ambient air monitoring stations, CEMEX believes that explicit modeling of off-property sources is required in order to obtain conservative NAAQS modeling results.

A list of sources in Pennsylvania within 50 km of the Wampum Cement Plant (except for sources in Allegheny County) was provided by Pennsylvania Department of Environmental Protection (DEP) personnel, provided via email from Mr. Daniel Roble on October 4, 2019. The source data reports were obtained from DEPs Air Information Management System (AIMS) and provided actual reported emissions at the emission source and site levels, as well as stack parameters (release height, exit temperature, and flow rate for each emission source). The AIMS report also had UTM coordinates and a permit number for each site. Because a PSD NAAQS modeling demonstration requires maximum allowable or federally enforceable permit limits, the actual emissions data included in the AIMS report could not be used in the modeling analysis. Rather, an emissions inventory was developed by reviewing permits and extracting permit mass limits and/or data needed to calculate maximum mass rates. These permits were obtained through PA portal files (http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Permits/PermitDocuments/).

Allegheny County sources were provided in a spreadsheet (via email from Mr. Jason Maranche on October 21, 2019) with the necessary information (stack parameters, locations, and maximum allowable emissions rates) to include in the model. The required information from Ohio sources was developed from permits for Ohio sources within the 50-km radius. (https://epa.ohio.gov/dapc/newpermits/issued).

Sources with NO_X emissions located within 43 km of the Wampum Cement Plant were included in the NAAQS demonstration, and sources with SO_2, PM_{10} and $PM_{2.5}$ located within 14 km of the Wampum Cement Plant were included in the NAAQs demonstration. The radius of modeled off-site sources was determined by the SIL demonstration for each pollutant and the addition of several kilometers as a buffer.

In order to assure that the off-property source inventory data would provide a reasonable representation of source emissions and associated potential predicted ambient air concentrations, before using the off-property inventory in the dispersion modeling analyses, the information was examined for completeness, issues and obvious errors. We reviewed stack parameters (as available) and made the following adjustments:

- Any source with a stack release height greater than 65 meters was revised to GEP stack height (i.e., 65 meters).
- Sources for which no stack parameters were provided were modeled with either pseudo point parameters or stack parameters based on those provided for other similar source types. Pseudo point parameters consist of stack height = 1 m, exit velocity = 0.001 m/s, diameter 0.001 m, and exhaust temperature = ambient.

After these adjustments to the inventory were made, a preliminary cumulative impact assessment was conducted. Some of the off-property sources showed unusually large concentrations to the predicted ambient concentrations. Those specific sources warranted further investigation for accuracy and representativeness of their emissions rates, locations, and stack parameters. The following types of adjustments were made to specific sources, as needed and appropriate: Some sources' UTM coordinates were clearly erroneous, so the locations of those sources were corrected.

- Sources that were determined to have been permanently removed, scrapped, shutdown, or phased-out based on the review of permit files or other publicly available information were not included in the modeling analysis.
- In cases where there was clear evidence that a particular fuel could no longer be used at a source, emissions were not based on that particular fuel (e.g., the New Castle power plant was retrofitted for gas in 2016, so emissions used in the modeling were based on gas, rather than coal).
- For a number of sources, the only regulatory requirement for SO_2 was the DEP limitation of a maximum concentration of 500 ppm SO_2 in the exhaust When natural gas is burned, a 500 ppm SO_2 exhaust limit grossly over-estimates the emissions. In those cases, SO_2 emissions were calculated using the maximum capacity of the unit and the maximum allowable sulfur concentration in natural gas.
- Similarly, for a number of PM sources, the only regulatory requirement was the DEP limitation of 0.4 gr/dscf. When a baghouse is used (and required by the permit), a 0.4 gr/dscf over-estimates the PM emissions. We used a 0.3 gr/dscf instead, which is still very conservative for baghouse-controlled PM emissions.
- For PM sources, in some cases the $PM_{2.5}$ and PM_{10} emissions were shown to be equal to PM emissions. This is a very conservative assumption. We re-calculated the PM_{10} and $PM_{2.5}$ emissions using factors widely accepted in AP-42 (84% of PM as PM_{10}, 45% of PM as $PM_{2.5}$).

- Sources operating less than 100 hours per year (such as emergency engines) were not included in the 1-hour NO_2 and 1-hour SO_2 NAAQS modeling analysis per EPA guidance (i.e., *EPA's Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard; March 1, 2011*).

Tables summarizing the exhaust parameters of off-property sources included in the NAAQS and PSD increment analysis are provided in Appendix K. Tables summarizing the emissions of off-property sources included in the NAAQS and PSD increment analyses are provided in Appendix L.

9.0 MODELING RESULTS

The results of the AQA are included in this section. Guidance from the EPA's *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W) and other relevant guidance, was followed in selecting the predicted concentrations used to determine compliance with the NAAQS. Copies of all modeling input and output files are included as part of the electronic files submitted as Appendix M.

9.1 Preliminary Impact Determination

9.1.1 Modeled Emission Rates for Precursors (MERPs) Analysis Results

As described in Sections 8.1.2, a Tier 1 approach was used to estimate the secondary $PM_{2.5}$ impacts associated with the precursor emissions. The calculation is provided as Appendix J. The estimated secondary $PM_{2.5}$ analysis results are summarized in Table 9-1.

TABLE 9-1 MERP ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	ESTIMATED MERP CONCENTRATION (µg/m³)[1]
$PM_{2.5}$	24-hour	0.116
	Annual	0.005

[1] Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program April 2018. EPA 454/R-19-003.

These estimated impacts were included in the Area of Significant Impact analysis and in applicable full impact analyses.

9.1.2 Area of Significant Impact (AOI) Analysis Results

As described in Section 8.1.3, this modeling was conducted for Project emissions to determine whether full impact modeling is required and, if so, to determine the AOI. The modeling runs represent the preliminary impact analysis modeling conducted for the proposed allowable emissions of NO_2, CO, SO_2, PM_{10} and $PM_{2.5}$. The predicted ground-level concentrations and SILs are summarized in Table 9-2.

TABLE 9-2 AOI ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m^3)		SIGNIFICANT IMPACT LEVEL (SIL) (µg/m^3)
NO_2 [1,2]	1-Hour	3-Year Average of 1st High	31.3	7.5
	Annual	1st High (of 3 Years)	3.1	1
CO [2]	1-Hour	1st High (of 3 Years)	303.2	2,000
	8-Hour	1st High (of 3 Years)	18.4	500
SO_2 [1,3]	1-Hour	3-Year Average of 1st High	9.3	7.8
	3-Hour	1st High (of 3 Years)	5.1	25
	24-Hour	1st High (of 3 Years)	2.1	5
	Annual	1st High (of 3 Years)	0.1	1
PM_{10} [1] (NAAQS)	24-Hour	1st High (of 3 Years)	17.6	5
PM_{10} [1] (Increment)	24-Hour	1st High (of 3 Years)	17.6	5
	Annual	1st High (of 3 Years)	1.5	1
$PM_{2.5}$ [4] (Increment)	24-Hour	1st High (of 3 Years)	9.2*	1.2
	Annual	1st High (of 3 Years)	1.5*	0.2
$PM_{2.5}$ [4] (NAAQS)	24-Hour	3-Year Average of 1st High	8.6*	1.2
	Annual	3-Year Average of 1st High	1.5*	0.2

* Includes estimated secondary $PM_{2.5}$ impact from Section 9.1.1 MERP analysis

[1] Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard; March 1, 2011.

[2] New Source Review Workshop Manual Prevention of Significant Deterioration and Nonattainment Area Permitting (Draft), October 1990, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

[3] Guidance Concerning the Implementation of the 1-hour SO_2 NAAQS for the Prevention of Significant Deterioration Program August 2010. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

[4] Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration, EPA MEMO April 2018, and Technical Basis for the EPA's Development of the Significant Impact Thresholds for $PM_{2.5}$ and Ozone, EPA-454/R-18-001, April 2018.

The predicted 1-hour CO, 8-hour CO, 3-hour SO_2, 24-hour SO_2, and annual SO_2 concentrations are less than their respective SILs. No additional modeling is required for these pollutants and averaging periods. The predicted 1-hour NO_2, annual NO_2, 1-hour SO_2, 24-hour PM_{10}, annual PM_{10}, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$ concentrations are greater than their respective SILs. Therefore, full impact modeling analyses were conducted for these pollutants.

9.1.3 PSD Pre-Application Analysis Results

As described in Section 8.1.4, this modeling was conducted to determine whether the project is exempt from the pre-construction ambient monitoring data gathering requirements. The preliminary modeling was conducted for the proposed PSD-significant project emissions of NO_2, CO, SO_2, PM_{10} and $PM_{2.5}$. The predicted ground-level concentrations and SMC are summarized in Table 9-3.

TABLE 9-3 PSD PRE-CONSTRUCTION MONITORING REQUIREMENT ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m^3)		SIGNIFICANT MONITORING CONCENTRATION (µg/m^3)[1]
NO_2	Annual	1st High (of 3 Years)	3.1	14
CO	8-Hour	1st High (of 3 Years)	18.4	575
SO_2	24-Hour	1st High (of 3 Years)	2.1	13
PM_{10}	24-Hour	1st High (of 3 Years)	17.6	10
$PM_{2.5}$	24-Hour	1st High (of 3 Years)	9.0	0 [2]

[1] Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD) May 1987, EPA -450/4/87/007

[2] On January 22, 2013, the United States Court of Appeals for the District of Columbia Circuit granted a request from the EPA to vacate and remand to the EPA the portions of two PSD $PM_{2.5}$ rules [40 CFR 51.166(k)(2) and 40 CFR 52.21(k)(2)]

The predicted PM_{10} and $PM_{2.5}$ concentrations are greater than the SMC. CEMEX proposes the use of existing ambient air monitoring data from a representative monitor to meet the PM_{10} and $PM_{2.5}$ pre-construction monitoring data requirement.

A summary of the existing PM_{10} and $PM_{2.5}$ ambient air monitoring data is provided in Table 5-1.

9.2 Full Impact Analysis

9.2.1 NAAQS Analysis Results

Based on the results of the preliminary impact determination, full impact NAAQS modeling analyses are required for 1-hour NO_2, annual NO_2, 1-hour SO_2, 24-hour PM_{10}, annual PM_{10}, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$. The analyses for SO_2, PM_{10}, and $PM_{2.5}$ include off property sources within 14 km of the Wampum Plant; while, the analyses for NO_2 include off property sources within 43 km of the Wampum Plant. The inclusion of off-property sources was determined by the area of impact (with several kilometers as a buffer).

The form of the predicted ground-level concentrations from the NAAQS modeling, the form of the background concentrations and the NAAQS are summarized in Table 9-4. The predicted ground-level concentrations from the NAAQS modeling (project sources plus off-property sources), the representative background concentrations and the total impacts (sum of the two values) are summarized in Table 9-5. The predicted total concentrations are conservative because the background concentration includes contributions from the modeled sources (i.e., modeled existing sources are being double-counted). The total impacts are compared to the NAAQS in Table 9-5.

TABLE 9-4 NAAQS ANALYSIS – FORM OF MODELING RESULTS AND BACKGROUND CONCENTRATION

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (µg/m³)	BACKGROUND CONCENTRATION (µg/m³) [5]	NAAQS (µg/m³)
NO_2	1-Hour	3-Year Average of 98th Percentiles of the Daily 1-Hour Maximums [1]	3-Year Average of 98th Percentiles of the Daily 1-Hour Maximums, 2016-2018	188
	Annual	1st High (of 3 Years)[1]	1st High, 2018	100
SO_2	1-Hour	3-Year Average of 99th Percentiles of the Daily 1-Hour Maximums [2]	3-Year Average of 99th Percentiles of the Daily 1-Hour Maximums, 2016-2018	196
PM_{10}	24-Hour	6th High (of Single 3-Year Period) [3]	2nd High, 2016-2018	150
$PM_{2.5}$	24-Hour	3-Year Average of 98th Percentiles of the Daily Maximums [4]	3-Year Average of 98th Percentiles of the Daily Maximums 2016-2018	35
	Annual	3-Year Average of 1st Highs [4]	3-Year Average of 1st Highs 2016-2018	12

[1]. Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard; March 1, 2011.
[2]. Guidance Concerning the Implementation of the 1-hour SO_2 NAAQS for the Prevention of Significant Deterioration Program August 2010. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.
[3]. New Source Review Workshop Manual Prevention of Significant Deterioration and Nonattainment Area Permitting (Draft), October 1990, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.
[4]. Technical Basis for the EPA's Development of the Significant Impact Thresholds for $PM_{2.5}$ and Ozone, EPA-454/R-18-001, April 2018.
[5]. EPA's website of "monitor values reports", https://www.epa.gov/outdoor-air-quality-data/monitor-values-report (accessed October 21, 2019).

TABLE 9-5 NAAQS ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS (µg/m³)	BACKGROUND CONCENTRATION (µg/m³)	TOTAL (µg/m³)	NAAQS (µg/m³)
NO_2	1-Hour	75.3	72.0	147.3	188
	Annual	5.8	16.8	22.5	100
SO_2	1-Hour	39.4	39.2	78.6	196
PM_{10}	24-Hour	17.6	60.0	77.6	150
$PM_{2.5}$	24-Hour	8.0*	19.3	27.3	35
	Annual	2.2*	9.0	11.2	12

* Includes estimated secondary $PM_{2.5}$ impact from Section 9.1.1 MERP analysis

The predicted total NO_2, SO_2, PM_{10}, and $PM_{2.5}$, concentrations are less than the NAAQS for all applicable averaging periods.

9.2.2 PSD Increment Consumption Analysis Results

Based on the results of the preliminary impact determination, full impact PSD Increment Consumption modeling analyses are required for annual NO_2, 24-hour PM_{10}, annual PM_{10}, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$. The analyses for PM_{10}, PM_{10}, and $PM_{2.5}$, include off property sources within 14 km of the Wampum Plant. The analysis for NO_2 include off property sources within 43 km of the Wampum Plant. The inclusion of off-property sources was determined by the area of impact (with several kilometers as a buffer). Using the NAAQS inventory of allowable emissions to conservatively estimate increment, the

predicted ground-level concentrations and PSD increment consumption limits are summarized in Table 9-6.

TABLE 9-6 PSD INCREMENT CONSUMPTION ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (µg/m³)		PSD INCREMENT CONSUMPTION LIMIT (µg/m³) [1]
NO_2	Annual	1st High (of 3 Years)	5.8	25
PM_{10}	24-Hour	2nd High (of 3 Years)	19.3	30
	Annual	1st High (of 3 Years)	4.1	17
$PM_{2.5}$	24-Hour	2nd High (of 3 Years)	8.8*	9
	Annual	1st High (of 3 Years)	1.8*	4

* Includes estimated secondary $PM_{2.5}$ impact from Section 9.1.1 MERP analysis

[1] New Source Review Workshop Manual Prevention of Significant Deterioration and Nonattainment Area Permitting (Draft), October 1990, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

The predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations are less than the PSD increment consumption limits for all applicable averaging periods.

10.0 ADDITIONAL IMPACT ANALYSIS

10.1.1 Growth Analysis

Pursuant to federal PSD regulations, CEMEX is required to conduct an analysis of general commercial, residential, industrial, and other growth in the area associated with the Project. The Project is not anticipated to have significant impacts on secondary growth in the Wampum/Lawrence County area. The construction phase of the Project will generate up to several hundred jobs; however, these jobs will be temporary. Many of the temporary positions will be filled by local residents, as according to the Lawrence County profile provided by the Pennsylvania Department of Labor and Industry, approximately 2,131 county residents worked in the construction industry in 2018, *Lawrence County Employment Profile. Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis (www.workstats.dli.pa.gov). September 2019.* A portion of the construction workforce may be filled by workers commuting to the Project site from other nearby communities (e.g., Elwood City). There is sufficient short-term housing in these other nearby communities, as well as other services available to accommodate the temporary workforce.

Once the Project is completed, CEMEX will employ approximately 150 full-time staff at the plant. This represents a relatively small portion of the local population, conservatively assuming that all full-time employees would be considered new residents of the area. In addition, there are adequate commercial services (including services available in Elwood City) to support this potential permanent increase in the workforce in at the plant.

The new industrial jobs at the CEMEX plant may lead to a small number of local support jobs; however, the relatively small number of permanent positions is not expected to cause significant commercial or industrial growth in Wampum or the nearby communities

10.1.2 Visibility Impairment Analysis

A screening visibility analysis was performed to determine any potential impacts on visibility that the proposed stack emissions (i.e., plume blight) could have at the McConnell's Mill State Park. McConnell's Mill State Park is the closest State Park to the project site being approximately 12.2 km to the east-northeast of the proposed project site. The screening analysis indicates no potential for visibility impairment at the State Park.

The screening visibility analysis followed the procedures and recommendations given in the U.S. EPA document entitled *Workbook for Plume Visual Impact Screening and Analysis (Revised) (EPA-454/R-92-023)*.

PM_{10} and NO_X emissions are key to the visual impact of a plume. Short-term emissions for the proposed stack plume at the project site (3.23 g/s, and 24.57 g/s for PM_{10}, and NO_X, respectively) were input to VISCREEN. Following guidance given in the Workbook for Plume Visual Impact Screening and Analysis (Revised), the VISCREEN default emission rate of 0 g/s was input for primary NO_2, soot and sulfate. In addition, a background visual range of 20 km (from Figure 9 of the Workbook for Plume Visual Impact Screening and Analysis (Revised)), representative of the region, was input to VISCREEN.

First, a Level-1 screening analysis was performed to provide a very conservative estimate of potential plume visual impact. The conservatism results in part by assuming worst-case meteorological conditions during plume transport and dispersion. Specifically, extremely stable (stability class F or 6) atmospheric conditions coupled with a very low wind speed (1 m/s) are used in the VISCREEN model for the Level-1 screening analysis. The default input parameters of VISCREEN were invoked to accomplish the Level-1 analysis. The results of the very conservative Level-1 analysis suggested that there may be a potential for visibility impairment at the State Park.

Since the Level-1 results exceeded a screening criterion, a Level-2 screening analysis was performed. The Level-2 analysis uses more realistic, site-specific inputs to the VISCREEN model. The input parameters for this specific Level-2 screening analysis were the same as those used in the Level-1 analysis except for the assumed meteorological conditions. Since the Park is only open during daylight hours, the worst-case dispersion condition (stability class E or 5 and wind speed of 1 m/s) representative of daytime conditions was used in VISCREEN.

Table 10-1 presents the summary results of the Level-2 visibility screening analysis for the McConnell's Mill State Park. The specific results correspond to the output of the VISCREEN model.

TABLE 10-1 LEVEL-2 SCREENING ANALYSIS FOR THE MCCONNELL'S MILL STATE PARK

BACKGROUND	SUN WITH RESPECT TO OBSERVER	DISTANCE FROM SOURCE TO OBSERVED PLUME (km)	ΔE		CONTRAST	
			CRITERIA	PLUME*	CRITERIA	PLUME*
Sky	In front of	12.2	3.38	3.056	0.05	-0.002
Sky	Behind	12.2	2.00	0.995	0.05	-0.013
Terrain	In front of	12.2	2.88	1.099	0.05	0.011
Terrain	Behind	12.2	2.00	0.292	0.05	0.007

* Absolute value of modeled estimate is compared to the visibility screening criteria.

The Level-2 analysis results indicate that the plume perceptibility screening criteria (total color contrast – Delta E (ΔE) – and the green contrast – Contrast) are not exceeded for both a sky and terrain background.

Thus, no visibility impairment is expected at the McConnell's Mill State Park, the closest State Park to the proposed project.

10.1.3 Soils and Vegetation Analysis

Pursuant to federal PSD regulations, CEMEX is required to conduct an analysis of ambient impacts to sensitive vegetation types with significant commercial or recreational value, as well as sensitive soil types. The analysis of vegetation types was performed by comparing the maximum model-predicted impacts from the Project to secondary NAAQS and the AQRV screening concentrations provided in EPA's A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals, *U.S. EPA. A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals. U.S. EPA, Research Triangle Park, NC. December 12, 1980. EPA 450/2-81-078.* Table 10-2 gives the screening levels and NAAQS applicable to the analysis of sensitive vegetation types.

TABLE 10-2 SECONDARY NAAQS ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	AQRV SCREENING LEVELS ($\mu g/m^3$)	SEONDARY NAAQS ($\mu g/m^3$) [1]
SO_2	1-hour	917	-
	3-hour	783	1,300
	24-hour	-	-
	Annual	18	-
PM_{10}	24-hour	-	150
	Annual	-	-
$PM_{2.5}$	24-hour	-	35
	Annual	-	15
NO_2	1-hour	-	-
	4-hour	3,760	-
	8-hour	3,760	-
	1-month	564	-
	Annual	94	100
CO	1-hour	-	-
	8-hour	-	-
	Weekly	1,800,000	-

[1]. U.S. EPA. A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals. U.S. EPA, Research Triangle Park, NC. December 12, 1980. EPA 450/2-81-078

The maximum model-predicted impacts for the Project, as shown in Section 9 (Table 9-2), are below the screening levels and NAAQS. Therefore, sensitive vegetation types in the region around the Project location will not be adversely affected by Project emissions.

The U.S. Department of Agriculture Natural Resources Conservation Service's Web Soil Survey (WSS) tool, https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (accessed October 18, 2019), was used to determine the predominant soil types in the region around the Project site. The WSS review area was centered on the Project site and comprised an area of approximately 10,000 acres. The predominant soil types in the region are a variety of silt and gravelly loams.

The most notable potential effect from the air pollutants emitted by the Project is the modification of soil chemistry through acidic deposition. However, the soil types identified by the WSS analysis have a moderate to high buffering capacity, which act to mitigate the effect of acidic deposition. Also, hydrated

lime injection and SNCR control systems on the kiln will reduce NO_X and SO_X emissions that can form acidic compounds in the atmosphere.

In addition to the analysis discussed above, the kiln emission rates were compared against the "Significant Emission Rates" (tons per year) shown in Table 5.7 of EPA's A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals. Kiln emission rates for the trace elements are below the Significant Emission Rates; therefore, the emissions would not result in adverse impacts to sensitive soil types.

11.0 CLASS I AREAS

With any AQA analysis Class I areas must be reviewed and analyzed for potential impacts. Class I areas are designated Federal lands such as national parks and wildlife refuges, considered the most pristine areas where a minimal amount of ambient air impacts is allowed. The *Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report Revised 2010, NPA.NRPC,NRR- 2010/232,* guidance suggests that a source located greater than 50 km from a Class I area is considered to have a negligible impact on the Class I area if its total SO_2, NO_X, PM_{10}, and H_2SO_4 annual potential emissions (in tons per year) divided by the distance from the source to the Class I area (in kilometers) is less than 10. This analysis is commonly known as the "Q/d" analysis, where the total annual emissions of SO_2, NO_X, PM_{10}, and H_2SO_4 (based on 24-hour maximum allowable emissions) are designated as "Q," and the distance from the source to the Class I area is designated as "d".

The nearby Class I areas to the Wampum Plant and the "Q/d" analysis are provided in Table 11- 1.

TABLE 11-1 CLASS I "Q/D" ANALYSIS

CLASS I AREA	DISTANCE FROM PROJECT SITE (km) "d"	TOTAL SITEWIDE EMISSIONS (TPY) "Q"	Q/d
Otter Creek Wilderness	209	1,397	6.7
Dolly Sods Wilderness	215	1,397	6.5
Shenandoah National Park	284	1,397	4.9

As indicated by the "Q/d" analysis, no further air quality analysis of Class I AQRVs (including visibility) is required. A map of the Class I areas is provided as Appendix D.

11.1 Class I PSD Increments

A Class I SIL analysis was completed for receptors located at the Otter Creek Wilderness Class I area, the closest Class I area to the project site. Receptors at the Otter Creek Wilderness were used in the model and results were compared to the Class I PSD SILs. Receptors for the Otter Creek Wilderness were retrieved from National Park Service, https://www.nps.gov/subjects/air/permitresources.htm (Accessed November 2019).

TABLE 11-2 CLASS I PSD SIL ANALYSIS RESULTS

POLLUTANT	AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATIONS AT EACH RECEPTOR (ug/m^3)		CLASS I SIGNIFICANT IMPACT LEVEL (SIL) (µg/m^3)
NO_2 [1]	Annual	1st High (of 3 Years)	0.0057	0.1
SO_2 [1]	3-Hour	1st High (of 3 Years)	0.1592	1
	24-Hour	1st High (of 3 Years)	0.0271	0.2
	Annual	1st High (of 3 Years)	0.0015	0.1
PM_{10} [1]	24-Hour	1st High (of 3 Years)	0.0138	0.3
	Annual	1st High (of 3 Years)	0.0009	0.2
$PM_{2.5}$ [2]	24-Hour	1st High (of 3 Years)	0.1278*	0.27
	Annual	1st High (of 3 Years)	0.0056*	0.05

* Includes estimated secondary $PM_{2.5}$ impact from Section 9.1.1 MERP analysis

[1] Proposed Class I PSD Increment SILs published July 23, 1996 Federal Register.

[2] Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration, EPA MEMO April 2018.

Based on the Class I PSD SIL analysis results, the Wampum Plant has demonstrated that its emissions will not cause or contribute to violations of Class I PSD Increment Standards for NO_2, SO_2, PM_{10}, and $PM_{2.5}$.

12.0 MODELING INPUT AND OUTPUT FILES

As required, electronic copies of the following items are provided in the AQA submitted to the DEP as Appendix M:

- Input and output modeling files,
- Files produced by a software entry program,
- Automatic downwash program input and output files,
- Meteorological data files and model performance evaluation,
- Boundary property files,
- Spreadsheet files used for to determine air of impact.

APPENDIX A PLOT PLAN

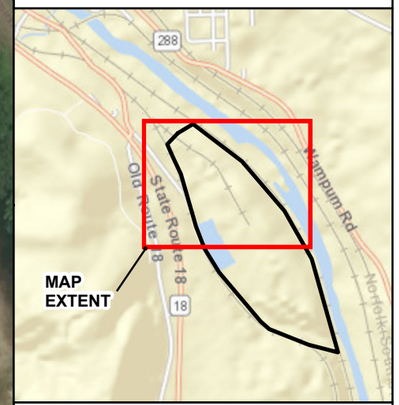
CEMEX - WAMPUM CEMENT PLANT

MODELING PLOT PLAN

Lawrence County
Pennsylvania

Legend

- Point Source
- Area Source
- Volume Source
- Area Source
- Property Boundary



0 100 200 300
Feet

POWER ENGINEERS

Date: 12/4/2019

Path: H:\Cemex\Wampum GIS\Plot_Plan.mxd Basemap Layers: ESRI- Streets and World Topographic Map

APPENDIX B PLANT STRUCTURES

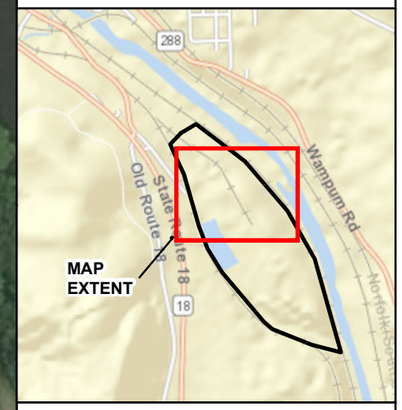
CEMEX - WAMPUM
CEMENT PLANT

DOWNWASH STRUCTURES

Lawrence County
Pennsylvania

Legend

- Downwash Structure
- Property Boundary



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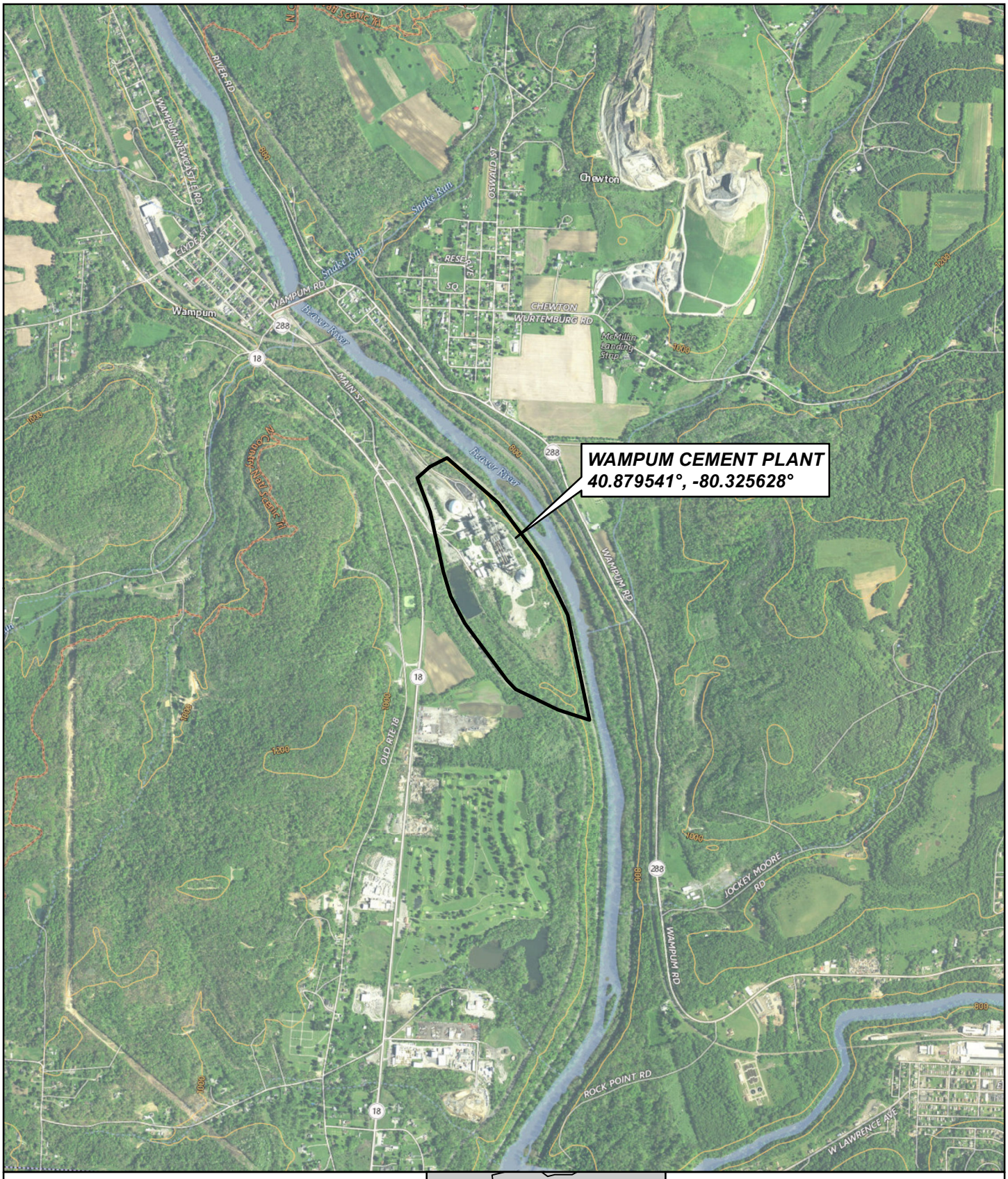
Feet

POWER ENGINEERS

Date: 12/4/2019

Path: H:\Cemex\Wampum GIS\Downwash_Structures.mxd Basemap Layers: ESRI- Streets and World Topographic Map

APPENDIX C AREA MAP



Legend

Property Boundary

0 1,000 2,000

Feet

CEMEX - WAMPUM CEMENT PLANT

AREA MAP

LAWRENCE COUNTY, PA

Map Source: USGS Topographic Map

POWER ENGINEERS

Date: 11/1/2019

Path: H:\Cemex\Wampum GIS\Area_Map.mxd

APPENDIX D PSD CLASS I AREAS

CEMEX - WAMPUM CEMENT PLANT

NEAREST CLASS I AREAS

Lawrence County
Pennsylvania

Legend

- Mandatory Class I Federal Area
- State Boundary

CEMEX - WAMPUM CEMENT PLANT

OTTER CREEK WILDERNESS

DOLLY SODS WILDERNESS

SHENANDOAH NP

OHIO

PENNSYLVANIA

WEST VIRGINIA

MARYLAND

VIRGINIA

Warren
Youngstown
Akron
Alliance
Wooster
Canton
Butler
State College
Indiana
Altoona
Pittsburgh
Greensburg
New Philadelphia
Harrisburg
Newark
Wheeling
Zanesville
Chambersburg
Hanover
Morgantown
Fairmont
Hagerstown
Westminster
Martinsburg
Frederick
Baltimore
Columbia
Germantown
Aspen Hill
Bowie
Annap
Sterling
Reston
Washington
Centreville
Alexandria
Dale City
Winchester
Parkersburg
Clarksburg
Athens
Charleston
Harrisonburg
Staunton
Charlottesville
Fredericksburg
Beckley

MAP EXTENT

MI NY PA OH NJ MD WV DE KY VA TN NC

0 25 50
Miles

POWER ENGINEERS

Date: 12/4/2019

Path: H:\Cemex\Wampum GIS\2019_Modeling\PSD_ClassI_Areas.mxd Basemap Layers: ESRI- Streets and World Topographic Map

APPENDIX E MAP OF MONITOR STATIONS

CEMEX - WAMPUM CEMENT PLANT

AIR MONITORING STATION LOCATIONS

Lawrence County
Pennsylvania

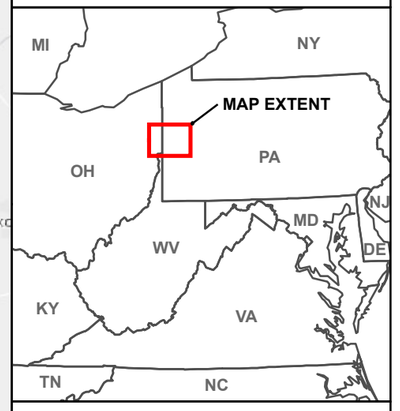
Legend

- Facility Location
- Monitor Station Location

NEW CASTLE MONITORING STATION AQS SITE ID 42-073-0015

CEMEX - WAMPUM CEMENT PLANT

BEAVER FALLS MONITORING STATION AQS SITE ID 42-007-0014



0 2.5 5
Miles

POWER ENGINEERS

Date: 12/4/2019

Path: H:\Cemex\Wampum GIS\2019_Modeling\Monitor_Locations.mxd Basemap Layers: ESRI- Streets and World Topographic Map

APPENDIX F PROJECT MODELED EMISSIONS RATES

MODELED EMISSION RATES - POINT SOURCES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
CT	CT.1	Cooling Tower					1.3743E-04	1.3743E-04	5.9550E-07	5.9550E-07				
CT	CT.2	Cooling Tower					1.3743E-04	1.3743E-04	5.9550E-07	5.9550E-07				
274	274	Emergency Engine		0.1990	0.2733	0.0342	5.9028E-04	8.0860E-04	5.9028E-04	8.0860E-04		5.9212E-04	7.4015E-05	1.0139E-04
263	MK.CAT	Selective Non-Catalytic Reduction (SNCR)	24.5700	24.5700										
263	MK.LIM	Hydrated Lime Control System									6.5520	6.5520	6.5520	6.5520
263	MK.AC	Activated Carbon Control System												
263	MK.Stack	Kiln Exhaust Baghouse - 511-03-312-04			22.6044	22.6044	3.2236	3.2236	2.7889	2.7889				
259	431.07	Baghouse - 431-07-312-01					0.0153	0.0153	0.0082	0.0082				
260	441.09	Baghouse - 441-09-312-04					0.0514	0.0514	0.0275	0.0275				
260	441.11	Baghouse - 441-11-312-04					0.0377	0.0377	0.0202	0.0202				
260	441.18	Baghouse - 441-18-312-04					0.0291	0.0291	0.0156	0.0156				
260	441.88	Baghouse - 441-88-312-04					0.0136	0.0136	0.0073	0.0073				
265	511.54	Baghouse - 511-54-312-04					0.0075	0.0075	4.0202E-03	4.0202E-03				
263	511.114	Baghouse - 511-114-312-04					0.0059	0.0059	3.1862E-03	3.1862E-03				
263	511.122	Baghouse - 511-122-312-04					1.9958E-03	1.9958E-03	1.0692E-03	1.0692E-03				
263	511.123	Baghouse - 511-123-312-04					1.9958E-03	1.9958E-03	1.0692E-03	1.0692E-03				
265	511.126	Baghouse - 511-126-312-04					1.5168E-03	1.5168E-03	8.1259E-04	8.1259E-04				
261	521.14	Baghouse - 521-14-312-04					0.0335	0.0335	0.0180	0.0180				
261	521.37	Baghouse - 521-37-312-04					0.0099	0.0099	0.0053	0.0053				
260	521.40	Baghouse - 521-40-312-04					0.0150	0.0150	0.0080	0.0080				
265	511.74	Baghouse - 511-74-312-04					0.0105	0.0105	0.0056	0.0056				
263	511.91	Baghouse - 511-91-312-04					4.5106E-03	4.5106E-03	2.4164E-03	2.4164E-03				
263	511.98	Baghouse - 511-98-312-04					1.5168E-03	1.5168E-03	8.1259E-04	8.1259E-04				
263	511.99	Baghouse - 511-99-312-04					1.5168E-03	1.5168E-03	8.1259E-04	8.1259E-04				
263	511.100	Baghouse - 511-100-312-04					1.5168E-03	1.5168E-03	8.1259E-04	8.1259E-04				
263	511.101	Baghouse - 511-101-312-04					1.5168E-03	1.5168E-03	8.1259E-04	8.1259E-04				
271	622.07	Baghouse - 622-07-312-01					0.0725	0.0725	0.0388	0.0388				
271	612.25	Baghouse - 612-25-312-01					0.0220	0.0220	0.0118	0.0118				
273	622.09	Baghouse - 622-09-312-02					0.1550	0.1550	0.0830	0.0830				
272	622.24	Baghouse - 622-24-312-02					0.0057	0.0057	3.0793E-03	3.0793E-03				
273	622.15	Baghouse - 622-15-312-02					0.0329	0.0329	0.0177	0.0177				
262	CM.Stack	Coal Mill Baghouse - 885-11-312-01					0.1568	0.1568	0.0840	0.0840				
262	886.11	Baghouse - 886-11-312-01					0.0058	0.0058	3.1201E-03	3.1201E-03				
262	886.12	Baghouse - 886-12-312-01					0.0070	0.0070	3.7422E-03	3.7422E-03				
262	886.13	Baghouse - 886-13-312-01					3.1752E-03	3.1752E-03	1.7010E-03	1.7010E-03				
209	209	Baghouse - EAST CEMENT SILOS (18-29)					0.0465	0.0465	0.0249	0.0249				
210	210	Baghouse - WEST CEMENT SILOS (6-17)					0.0465	0.0465	0.0249	0.0249				
213	213	Baghouse - South Packer Baghouse					0.0598	0.0598	0.0321	0.0321				
214	214	Baghouse - North Packer Baghouse					0.0598	0.0598	0.0321	0.0321				
215	215	Baghouse - Masonry Packer Baghouse					0.0598	0.0598	0.0321	0.0321				
216	216	Baghouse - EAST/WEST TRUCK LOADING Baghouse					0.0176	0.0176	0.0094	0.0094				
217	217	Baghouse - NEW TRUCK LOADING Baghouse (Scale 3)					5.1662E-05	4.7416E-05	7.8231E-06	7.1801E-06				
218	218	Baghouse - RAILCAR LOADING Baghouse					0.0194	0.0194	0.0104	0.0104				
252	311.02	Baghouse/Transfer - 311-02-312-01												
252	311.03	Baghouse/Transfer - 311-03-312-01												
254	311.10	Baghouse/Transfer - 311-10-312-01					2.4217E-05	2.2227E-05	6.8441E-06	6.2815E-06				
254	311.14	Baghouse/Transfer - 311-14-312-01					2.9022E-06	2.6636E-06	8.2018E-07	7.5276E-07				
254	571.09	Baghouse/Transfer - 571-09-312-01					4.2062E-06	3.8605E-06	1.1887E-06	1.0910E-06				
254	311.20	Baghouse/Transfer - 311-20-312-01					5.8943E-06	5.4098E-06	1.6658E-06	1.5289E-06				
253	341.03	Baghouse/Transfer - 341-03-312-01												
253	341.04	Baghouse/Transfer - 341-04-312-01												
255	341.10	Baghouse/Transfer - 341-10-312-01					4.7372E-06	4.3478E-06	1.3388E-06	1.2287E-06				

MODELED EMISSION RATES - POINT SOURCES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
255	335.03	Baghouse/Transfer - 335-03-312-01					4.3208E-07	3.9657E-07	1.2211E-07	1.1207E-07				
256	411.34	Baghouse/Transfer - 411-34-312-01					1.0820E-05	9.9302E-06	3.0577E-06	2.8064E-06				
257	411.48	Baghouse/Transfer - 411-48-312-01					5.6572E-06	5.1923E-06	1.5988E-06	1.4674E-06				
257	411.52	Baghouse/Transfer - 411-52-312-01					2.2583E-05	2.0727E-05	6.3821E-06	5.8575E-06				
256	411.58	Baghouse/Transfer - 411-58-312-01					3.7233E-06	3.4173E-06	1.0522E-06	9.6575E-07				
256	411.38	Baghouse/Transfer - 411-38-312-01					1.0338E-05	9.4879E-06	2.9215E-06	2.6814E-06				
256	411.42	Baghouse/Transfer - 411-42-312-01					1.0338E-05	9.4879E-06	2.9215E-06	2.6814E-06				
258	422.13	Baghouse/Transfer - 422-13-312-01					2.4490E-05	2.2477E-05	6.9212E-06	6.3523E-06				
258	422.22	Baghouse/Transfer - 422-22-312-01												
264	561.21	Baghouse/Transfer - 561-21-312-04												
264	571.05	Baghouse/Transfer - 571-05-312-01					1.6419E-05	1.5070E-05	4.6402E-06	4.2588E-06				
267	574.46	Baghouse/Transfer - 574-46-312-01					1.1165E-05	1.0247E-05	3.1553E-06	2.8960E-06				
268	574.48	Baghouse/Transfer - 574-48-312-01					9.8515E-07	9.0418E-07	2.7841E-07	2.5553E-07				
268	574.49	Baghouse/Transfer - 574-49-312-01					9.8515E-07	9.0418E-07	2.7841E-07	2.5553E-07				
268	574.50	Baghouse/Transfer - 574-50-312-01					9.8515E-07	9.0418E-07	2.7841E-07	2.5553E-07				
268	574.51	Baghouse/Transfer - 574-51-312-01					9.8515E-07	9.0418E-07	2.7841E-07	2.5553E-07				
266	573.08	Baghouse/Transfer - 573-08-312-01												
266	573.11	Baghouse/Transfer - 573-11-312-01												
266	574.44	Baghouse/Transfer - 574-44-312-01					2.7365E-06	2.5116E-06	7.7336E-07	7.0980E-07				
266	574.35	Baghouse/Transfer - 574-35-312-01					5.4730E-06	5.0232E-06	1.5467E-06	1.4196E-06				
266	574.42	Baghouse/Transfer - 574-42-312-01					5.4730E-06	5.0232E-06	1.5467E-06	1.4196E-06				
266	574.32	Baghouse/Transfer - 574-32-312-01					5.4730E-06	5.0232E-06	1.5467E-06	1.4196E-06				
270	612.18	Baghouse/Transfer - 612-18-312-01					5.2625E-08	4.8300E-08	1.4872E-08	1.3650E-08				
270	612.20	Baghouse/Transfer - 612-20-312-01					8.0439E-05	7.3827E-05	1.2432E-05	1.1410E-05				
272	612.14	Baghouse/Transfer - 612-14-312-02					3.1480E-04	2.8892E-04	4.7760E-05	4.3834E-05				
273	612.19	Baghouse/Transfer - 612-19-312-02					6.9133E-06	6.3451E-06	1.9538E-06	1.7932E-06				
254	885.19	Baghouse/Transfer - 885-19-312-01					1.3156E-06	1.2075E-06	3.7181E-07	3.4125E-07				
254	882.01	Baghouse/Transfer - 882-01-312-01					1.3156E-06	1.2075E-06	3.7181E-07	3.4125E-07				
178	178	Baghouse/Transfer Rail Car Loading - 178					3.0997E-05	2.8449E-05	4.6939E-06	4.3081E-06				

MODELED EMISSION RATES - AREA SOURCES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
252	Fug001	Baghouse/Transfer - Fug001					1.8846E-04	1.7297E-04	5.3262E-05	4.8884E-05				
253	Fug002	Baghouse/Transfer - Fug002					3.5961E-05	3.3006E-05	1.0163E-05	9.3277E-06				
270	Fug003	Baghouse/Transfer - Fug003					5.2625E-06	4.8300E-06	1.4872E-06	1.3650E-06				
272	Fug004	Baghouse/Transfer - Fug004					2.1050E-05	1.9320E-05	5.9490E-06	5.4600E-06				
180	180	Limestone Storage Pile					2.2196E-03	2.2196E-03	3.3611E-04	3.3611E-04				
181	181	Coal Storage Pile					6.5086E-05	6.5086E-05	9.8559E-06	9.8559E-06				
185	L.185	Paved Road Segment L					1.0021E-03	3.5690E-04	2.4596E-04	8.7604E-05				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	A.01	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.02	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.03	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.04	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.05	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.06	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.07	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.08	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.09	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.10	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.11	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.12	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	A.13	Paved Roads					5.5076E-04	1.9616E-04	1.3519E-04	4.8148E-05				
185	B.01	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.02	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.03	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.04	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.05	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.06	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.07	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.08	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.09	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.10	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.11	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.12	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.13	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.14	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.15	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.16	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.17	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.18	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.19	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.20	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.21	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.22	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.23	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.24	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.25	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.26	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.27	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.28	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.29	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.30	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.31	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.32	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	B.33	Paved Roads					3.4710E-04	1.2363E-04	8.5198E-05	3.0345E-05				
185	C.01	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.02	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.03	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	C.04	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.05	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.06	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.07	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.08	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	C.09	Paved Roads					4.1266E-04	1.4698E-04	1.0129E-04	3.6076E-05				
185	D.01	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.02	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.03	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.04	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.05	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.06	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.07	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.08	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.09	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.10	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.11	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.12	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.13	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.14	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.15	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.16	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.17	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.18	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.19	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.20	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.21	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.22	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.23	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.24	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.25	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.26	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.27	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.28	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.29	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.30	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.31	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	D.32	Paved Roads					1.3891E-04	4.9474E-05	3.4096E-05	1.2144E-05				
185	E.01	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.02	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.03	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.04	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.05	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.06	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	E.07	Paved Roads					1.3717E-04	4.8856E-05	3.3670E-05	1.1992E-05				
185	F.01	Paved Roads					1.1323E-05	4.0329E-06	2.7793E-06	9.8990E-07				
185	F.02	Paved Roads					1.1323E-05	4.0329E-06	2.7793E-06	9.8990E-07				
185	F.03	Paved Roads					1.1323E-05	4.0329E-06	2.7793E-06	9.8990E-07				
185	F.04	Paved Roads					1.1323E-05	4.0329E-06	2.7793E-06	9.8990E-07				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	G.01	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.02	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.03	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.04	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.05	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.06	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.07	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.08	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.09	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.10	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.11	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.12	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.13	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.14	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.15	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	G.16	Paved Roads					2.3361E-05	8.3203E-06	5.7340E-06	2.0423E-06				
185	H.01	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	H.02	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	H.03	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	H.04	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	H.05	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	H.06	Paved Roads					5.6496E-05	2.0122E-05	1.3867E-05	4.9390E-06				
185	I.01	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.02	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.03	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.04	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.05	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.06	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.07	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.08	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.09	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.10	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.11	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.12	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.13	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.14	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.15	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.16	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.17	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.18	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.19	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.20	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.21	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.22	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.23	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.24	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.25	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.26	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				
185	I.27	Paved Roads					6.3859E-05	2.2744E-05	1.5674E-05	5.5826E-06				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	J.01	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.02	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.03	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.04	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.05	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.06	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.07	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.08	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.09	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.10	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	J.11	Paved Roads					1.8539E-04	6.6029E-05	4.5504E-05	1.6207E-05				
185	K.01	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.02	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.03	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.04	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.05	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.06	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.07	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.08	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.09	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.10	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.11	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.12	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.13	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.14	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.15	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.16	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.17	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.18	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.19	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
185	K.20	Paved Roads					1.6273E-04	5.7958E-05	3.9942E-05	1.4226E-05				
184	M.01	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.02	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.03	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.04	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.05	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.06	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.07	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.08	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.09	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.10	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.11	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.12	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.13	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.14	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.15	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.16	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.17	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				
184	M.18	Unpaved Roads					2.7262E-04	9.7099E-05	2.7262E-05	9.7099E-06				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
184	N.01	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.02	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.03	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.04	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.05	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.06	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.07	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.08	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.09	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.10	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.11	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.12	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.13	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.14	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.15	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.16	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.17	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.18	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.19	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.20	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.21	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.22	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.23	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.24	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.25	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.26	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.27	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.28	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.29	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.30	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.31	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.32	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.33	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.34	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.35	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.36	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.37	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.38	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.39	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.40	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.41	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.42	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.43	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.44	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.45	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.46	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.47	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.48	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.49	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
184	N.50	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.51	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.52	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.53	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.54	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
184	N.55	Unpaved Roads					1.8316E-04	6.5236E-05	1.8316E-05	6.5236E-06				
185	O.01	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	O.02	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	O.03	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	O.04	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	O.05	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	O.06	Paved Roads					1.9821E-05	7.0596E-06	4.8652E-06	1.7328E-06				
185	P.01	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.02	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.03	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.04	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.05	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.06	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	P.07	Paved Roads					1.6365E-05	5.8288E-06	4.0170E-06	1.4307E-06				
185	Q.01	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.02	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.03	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.04	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.05	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.06	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.07	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.08	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.09	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.10	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.11	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.12	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.13	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.14	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
185	Q.15	Paved Roads					2.2858E-06	8.1414E-07	5.6107E-07	1.9983E-07				
184	R.01	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.02	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.03	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.04	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.05	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.06	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.07	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.08	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.09	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.10	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.11	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.12	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.13	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.14	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.15	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
184	R.16	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.17	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.18	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.19	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.20	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.21	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.22	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.23	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.24	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.25	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.26	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.27	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.28	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.29	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.30	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.31	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.32	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.33	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.34	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.35	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.36	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.37	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.38	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.39	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.40	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.41	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.42	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.43	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.44	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.45	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.46	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.47	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.48	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.49	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.50	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.51	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	R.52	Unpaved Roads					2.5404E-05	9.0482E-06	2.5404E-06	9.0482E-07				
184	S.01	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.02	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.03	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.04	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.05	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.06	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.07	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.08	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.09	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.10	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.11	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.12	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
184	S.13	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.14	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.15	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.16	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.17	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.18	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.19	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.20	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.21	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.22	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.23	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.24	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.25	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.26	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.27	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.28	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.29	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.30	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.31	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	S.32	Unpaved Roads					1.0093E-05	3.5946E-06	1.0093E-06	3.5946E-07				
184	T.01	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.02	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.03	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.04	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.05	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.06	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.07	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.08	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.09	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.10	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.11	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.12	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.13	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.14	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.15	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
184	T.16	Unpaved Roads					1.5920E-05	5.6702E-06	1.5920E-06	5.6702E-07				
185	U.01	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.02	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.03	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.04	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.05	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.06	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.07	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.08	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.09	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.10	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.11	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.12	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.13	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	U.14	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.15	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.16	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.17	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.18	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.19	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.20	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.21	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.22	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.23	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.24	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.25	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.26	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.27	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.28	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.29	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.30	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.31	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.32	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.33	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.34	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.35	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.36	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.37	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.38	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.39	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.40	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.41	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.42	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.43	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.44	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	U.45	Paved Roads					9.6068E-06	3.4216E-06	2.3580E-06	8.3985E-07				
185	V.01	Paved Roads					1.8555E-05	6.6087E-06	4.5545E-06	1.6221E-06				
185	V.02	Paved Roads					1.8555E-05	6.6087E-06	4.5545E-06	1.6221E-06				
185	V.03	Paved Roads					1.8555E-05	6.6087E-06	4.5545E-06	1.6221E-06				
185	V.04	Paved Roads					1.8555E-05	6.6087E-06	4.5545E-06	1.6221E-06				
185	W.01	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	W.02	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	W.03	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	W.04	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	W.05	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	W.06	Paved Roads					2.2516E-05	8.0194E-06	5.5267E-06	1.9684E-06				
185	X.01	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.02	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.03	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.04	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.05	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.06	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.07	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				

MODELED EMISSION RATES - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES (grams/sec)
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	NOx		CO		PM10		PM2.5		SO2			
			ST01	ANN	ST01	ST08	ST24	ANN	ST24	ANN	ST01	ST03	ST24	ANN
185	X.08	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.09	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.10	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.11	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.12	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.13	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				
185	X.14	Paved Roads					4.7978E-05	1.7088E-05	1.1777E-05	4.1944E-06				

APPENDIX G PROJECT MODELED STACK PARAMETERS

MODELING STACK PARAMETERS - POINT SOURCES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Elevation	Height	Temp	Velocity	Diameter
			Easting	Northing	(m)	(m)	(K)	(m/s)	(m)
CT	CT.1	Cooling Tower	556846.5	4525547.4	259.1	5.5	294	8.2	3.0
CT	CT.2	Cooling Tower	556843.8	4525553.2	259.1	5.5	294	8.2	3.0
274	274	Emergency Engine	556858.6	4525532.5	259.1	3.0	738	37.7	0.2
263	MK.CAT	Selective Non-Catalytic Reduction (SNCR)	556907.1	4525518.7	259.1	105.2	514	18.7	4.0
263	MK.LIM	Hydrated Lime Control System	556907.1	4525518.7	259.1	105.2	514	18.7	4.0
263	MK.AC	Activated Carbon Control System	556907.1	4525518.7	259.1	105.2	514	18.7	4.0
263	MK.Stack	Kiln Exhaust Baghouse - 511-03-312-04	556907.1	4525518.7	259.1	105.2	514	18.7	4.0
259	431.07	Baghouse - 431-07-312-01	556897.5	4525589.0	259.1	15.2	297	17.780	0.5
260	441.09	Baghouse - 441-09-312-04	556950.6	4525538.9	259.1	20.4	343	17.780	0.7
260	441.11	Baghouse - 441-11-312-04	556965.3	4525523.6	259.1	31.1	343	17.780	0.6
260	441.18	Baghouse - 441-18-312-04	556945.7	4525537.2	259.1	12.2	343	17.780	0.5
260	441.88	Baghouse - 441-88-312-04	556953.8	4525518.6	259.1	12.2	333	17.780	0.5
265	511.54	Baghouse - 511-54-312-04	556892.8	4525530.2	259.1	7.6	393	17.780	0.3
263	511.114	Baghouse - 511-114-312-04	556958.8	4525556.6	259.1	15.2	297	17.780	0.2
263	511.122	Baghouse - 511-122-312-04	556959.7	4525559.0	259.1	15.2	297	17.780	0.1
263	511.123	Baghouse - 511-123-312-04	556961.3	4525557.6	259.1	15.2	297	17.780	0.1
265	511.126	Baghouse - 511-126-312-04	556899.7	4525509.0	259.1	4.6	393	17.780	0.1
261	521.14	Baghouse - 521-14-312-04	556931.9	4525536.1	259.1	20.4	333	17.780	0.6
261	521.37	Baghouse - 521-37-312-04	556945.9	4525529.6	259.1	20.4	297	17.780	0.3
260	521.40	Baghouse - 521-40-312-04	556940.0	4525540.1	259.1	20.4	333	17.780	0.4
265	511.74	Baghouse - 511-74-312-04	556897.0	4525507.8	259.1	4.6	393	17.780	0.3
263	511.91	Baghouse - 511-91-312-04	556961.9	4525551.0	259.1	4.6	393	17.780	0.2
263	511.98	Baghouse - 511-98-312-04	556962.5	4525554.1	259.1	4.6	393	17.780	0.1
263	511.99	Baghouse - 511-99-312-04	556963.7	4525553.5	259.1	4.6	393	17.780	0.1
263	511.100	Baghouse - 511-100-312-04	556964.9	4525552.6	259.1	4.6	393	17.780	0.1
263	511.101	Baghouse - 511-101-312-04	556965.9	4525551.4	259.1	4.6	393	17.780	0.1
271	622.07	Baghouse - 622-07-312-01	556848.5	4525679.0	259.1	23.2	363	17.780	0.9
271	612.25	Baghouse - 612-25-312-01	556860.5	4525681.2	259.1	12.2	364	17.780	0.7
273	622.09	Baghouse - 622-09-312-02	556888.8	4525666.9	259.1	30.8	363	10.652	2.4
272	622.24	Baghouse - 622-24-312-02	556897.2	4525638.4	259.1	13.7	513	17.780	0.3
273	622.15	Baghouse - 622-15-312-02	556884.5	4525674.3	259.1	30.8	363	16.098	0.9
262	CM.Stack	Coal Mill Baghouse - 885-11-312-01	556854.1	4525631.9	259.1	27.4	358	34.352	0.9
262	886.11	Baghouse - 886-11-312-01	556853.1	4525621.8	259.1	12.2	297	17.780	0.3
262	886.12	Baghouse - 886-12-312-01	556965.0	4525432.8	259.1	6.1	297	17.780	0.2
262	886.13	Baghouse - 886-13-312-01	556927.9	4525557.1	259.1	12.2	297	17.780	0.2

MODELING STACK PARAMETERS - POINT SOURCES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Elevation	Height	Temp	Velocity	Diameter
			Easting	Northing	(m)	(m)	(K)	(m/s)	(m)
209	209	Baghouse - EAST CEMENT SILOS (18-29)	556771.6	4525681.3	259.1	35.1	294	14.7	0.7
210	210	Baghouse - WEST CEMENT SILOS (6-17)	556757.4	4525673.1	259.1	35.1	294	14.7	0.7
213	213	Baghouse - South Packer Baghouse	556707.1	4525626.6	259.1	18.6	294	14.5	1.2
214	214	Baghouse - North Packer Baghouse	556699.8	4525639.7	259.1	18.6	294	14.5	1.2
215	215	Baghouse - Masonry Packer Baghouse	556702.1	4525640.2	259.1	18.6	294	14.5	1.2
216	216	Baghouse - EAST/WEST TRUCK LOADING Baghouse	556697.2	4525692.9	259.1	15.2	294	5.9	1.0
217	217	Baghouse - NEW TRUCK LOADING Baghouse (Scale 3)	556726.8	4525703.4	259.1	11.0	294	16.0	0.3
218	218	Baghouse - RAILCAR LOADING Baghouse	556761.0	4525725.3	259.1	16.2	294	26.7	0.3
252	311.02	Baghouse/Transfer - 311-02-312-01	556746.9	4525824.8	259.1	0.0	297	17.780	0.2
252	311.03	Baghouse/Transfer - 311-03-312-01	556748.9	4525822.2	259.1	0.0	297	17.780	0.2
254	311.10	Baghouse/Transfer - 311-10-312-01	556822.0	4525687.7	259.1	21.9	297	17.780	0.4
254	311.14	Baghouse/Transfer - 311-14-312-01	556807.3	4525709.1	259.1	21.9	297	17.780	0.3
254	571.09	Baghouse/Transfer - 571-09-312-01	556843.4	4525717.7	259.1	7.6	333	17.780	0.3
254	311.20	Baghouse/Transfer - 311-20-312-01	556838.4	4525699.5	259.1	21.9	297	17.780	0.3
253	341.03	Baghouse/Transfer - 341-03-312-01	556748.6	4525825.5	259.1	0.0	297	17.780	0.2
253	341.04	Baghouse/Transfer - 341-04-312-01	556750.3	4525823.1	259.1	0.0	297	17.780	0.2
255	341.10	Baghouse/Transfer - 341-10-312-01	556818.3	4525688.3	259.1	21.9	297	17.780	0.3
255	335.03	Baghouse/Transfer - 335-03-312-01	556848.9	4525695.3	259.1	21.9	297	17.780	0.2
256	411.34	Baghouse/Transfer - 411-34-312-01	556813.0	4525720.6	259.1	7.0	297	17.780	0.4
257	411.48	Baghouse/Transfer - 411-48-312-01	556791.4	4525727.1	259.1	7.0	297	17.780	0.3
257	411.52	Baghouse/Transfer - 411-52-312-01	556779.4	4525723.5	259.1	7.0	297	17.780	0.3
256	411.58	Baghouse/Transfer - 411-58-312-01	556822.7	4525723.1	259.1	7.0	297	17.780	0.4
256	411.38	Baghouse/Transfer - 411-38-312-01	556801.5	4525739.6	259.1	7.0	297	17.780	0.4
256	411.42	Baghouse/Transfer - 411-42-312-01	556780.9	4525727.8	259.1	18.6	297	17.780	0.3
258	422.13	Baghouse/Transfer - 422-13-312-01	556873.6	4525588.6	259.1	27.4	297	17.780	0.5
258	422.22	Baghouse/Transfer - 422-22-312-01	556861.6	4525581.4	259.1	14.3	297	17.780	0.4
264	561.21	Baghouse/Transfer - 561-21-312-04	556963.5	4525445.3	259.1	6.1	333	17.780	0.4
264	571.05	Baghouse/Transfer - 571-05-312-01	557001.4	4525466.7	259.1	31.7	333	17.780	0.4
267	574.46	Baghouse/Transfer - 574-46-312-01	556897.1	4525653.7	259.1	7.6	297	17.780	0.5
268	574.48	Baghouse/Transfer - 574-48-312-01	556912.7	4525637.5	259.1	7.6	297	17.780	0.3
268	574.49	Baghouse/Transfer - 574-49-312-01	556917.9	4525628.3	259.1	7.6	297	17.780	0.3
268	574.50	Baghouse/Transfer - 574-50-312-01	556922.3	4525620.8	259.1	7.6	297	17.780	0.3
268	574.51	Baghouse/Transfer - 574-51-312-01	556927.0	4525612.9	259.1	7.6	297	17.780	0.3
266	573.08	Baghouse/Transfer - 573-08-312-01	557015.6	4525507.0	259.1	7.6	333	17.780	0.3

MODELING STACK PARAMETERS - POINT SOURCES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Elevation	Height	Temp	Velocity	Diameter
			Easting	Northing	(m)	(m)	(K)	(m/s)	(m)
266	573.11	Baghouse/Transfer - 573-11-312-01	557013.8	4525504.4	259.1	4.6	333	17.780	0.4
266	574.44	Baghouse/Transfer - 574-44-312-01	556979.3	4525507.8	259.1	7.6	297	17.780	0.5
266	574.35	Baghouse/Transfer - 574-35-312-01	557018.0	4525403.0	259.1	7.6	297	17.780	0.5
266	574.42	Baghouse/Transfer - 574-42-312-01	557037.8	4525414.4	259.1	7.6	297	17.780	0.3
266	574.32	Baghouse/Transfer - 574-32-312-01	557049.1	4525420.9	259.1	7.6	333	17.780	0.5
270	612.18	Baghouse/Transfer - 612-18-312-01	556842.5	4525722.1	259.1	7.6	297	17.780	0.2
270	612.20	Baghouse/Transfer - 612-20-312-01	556849.3	4525688.3	259.1	7.6	364	17.780	0.7
272	612.14	Baghouse/Transfer - 612-14-312-02	556934.4	4525594.0	259.1	7.6	297	17.780	0.4
273	612.19	Baghouse/Transfer - 612-19-312-02	556882.2	4525654.5	259.1	11.6	297	17.780	0.3
254	885.19	Baghouse/Transfer - 885-19-312-01	556860.9	4525644.2	259.1	6.1	297	17.780	0.2
254	882.01	Baghouse/Transfer - 882-01-312-01	556863.3	4525645.6	259.1	7.6	297	17.780	0.2
178	178	Baghouse/Transfer Rail Car Loading - 178	556861.0	4525725.3	259.1	4.0	297	17.780	0.2

MODELING STACK PARAMETERS - AREA SOURCES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Elevation	Height	Easterly Length	Notherly Length	Angle from North	Initial Vertical Dimension [2]
			(m)	(m)	(m)	(m)	(m)	(m)		(m)
252	Fug001	Baghouse/Transfer - Fug001	556744.1	4525827.3	259.1	1.8	4.57	3.05	60	
253	Fug002	Baghouse/Transfer - Fug002	556744.1	4525827.3	259.1	1.8	4.57	3.05	60	
270	Fug003	Baghouse/Transfer - Fug003	556836.9	4525721.5	259.1	1.8	12.19	12.19	60	
272	Fug004	Baghouse/Transfer - Fug004	556879.8	4525650.4	259.1	1.8	22.86	18.29	60	
180	180	Limestone Storage Pile	556694.8	4525818.6	259.1	0.9	30.48	30.48	30	
181	181	Coal Storage Pile	556667.6	4525851.0	259.1	0.9	30.48	30.48	30	
185	L.185	Paved Road Segment L	556589.3	4525637.0	259.1	4.3 [1]	7.62	7.62	340	1.977

1. Release Height for the Road segment was calculated using the following equation: H = 0.5 x Top of the Plume (Top of the plume = 1.7 x Vehicle Height).
2. Initial Vertical Dimension for the Road segment was calculated using the following equation: Z = Top of the Plume / 2.15 (Top of the plume = 1.7 x Vehicle Height).

Vehicle Height = 5m (16.4 ft)
Road Width = 6m (19.68 ft)

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
185	A.01	Paved Roads	556546.8	4525926.2	259.1	4.3	5.58	3.95
185	A.02	Paved Roads	556551.9	4525923.3	259.1	4.3	5.58	3.95
185	A.03	Paved Roads	556557.1	4525920.4	259.1	4.3	5.58	3.95
185	A.04	Paved Roads	556562.3	4525917.5	259.1	4.3	5.58	3.95
185	A.05	Paved Roads	556567.4	4525914.6	259.1	4.3	5.58	3.95
185	A.06	Paved Roads	556572.6	4525911.7	259.1	4.3	5.58	3.95
185	A.07	Paved Roads	556577.7	4525908.8	259.1	4.3	5.58	3.95
185	A.08	Paved Roads	556582.9	4525905.9	259.1	4.3	5.58	3.95
185	A.09	Paved Roads	556588.0	4525903.0	259.1	4.3	5.58	3.95
185	A.10	Paved Roads	556593.2	4525900.1	259.1	4.3	5.58	3.95
185	A.11	Paved Roads	556598.4	4525897.2	259.1	4.3	5.58	3.95
185	A.12	Paved Roads	556603.5	4525894.3	259.1	4.3	5.58	3.95
185	A.13	Paved Roads	556608.7	4525891.4	259.1	4.3	5.58	3.95
185	B.01	Paved Roads	556607.7	4525888.5	259.1	4.3	5.58	3.95
185	B.02	Paved Roads	556611.6	4525884.4	259.1	4.3	5.58	3.95
185	B.03	Paved Roads	556615.4	4525880.3	259.1	4.3	5.58	3.95
185	B.04	Paved Roads	556619.2	4525876.2	259.1	4.3	5.58	3.95
185	B.05	Paved Roads	556623.1	4525872.2	259.1	4.3	5.58	3.95
185	B.06	Paved Roads	556626.9	4525868.1	259.1	4.3	5.58	3.95
185	B.07	Paved Roads	556630.7	4525864.0	259.1	4.3	5.58	3.95
185	B.08	Paved Roads	556634.6	4525860.6	259.1	4.3	5.58	3.95
185	B.09	Paved Roads	556638.5	4525857.1	259.1	4.3	5.58	3.95
185	B.10	Paved Roads	556642.4	4525853.7	259.1	4.3	5.58	3.95
185	B.11	Paved Roads	556646.4	4525850.2	259.1	4.3	5.58	3.95
185	B.12	Paved Roads	556650.3	4525846.8	259.1	4.3	5.58	3.95
185	B.13	Paved Roads	556654.4	4525843.6	259.1	4.3	5.58	3.95
185	B.14	Paved Roads	556658.5	4525840.5	259.1	4.3	5.58	3.95
185	B.15	Paved Roads	556662.6	4525837.3	259.1	4.3	5.58	3.95
185	B.16	Paved Roads	556666.7	4525834.2	259.1	4.3	5.58	3.95
185	B.17	Paved Roads	556670.8	4525831.0	259.1	4.3	5.58	3.95
185	B.18	Paved Roads	556674.9	4525827.9	259.1	4.3	5.58	3.95
185	B.19	Paved Roads	556679.1	4525824.8	259.1	4.3	5.58	3.95
185	B.20	Paved Roads	556683.2	4525821.4	259.1	4.3	5.58	3.95
185	B.21	Paved Roads	556687.4	4525818.1	259.1	4.3	5.58	3.95
185	B.22	Paved Roads	556691.6	4525814.7	259.1	4.3	5.58	3.95
185	B.23	Paved Roads	556695.8	4525811.4	259.1	4.3	5.58	3.95
185	B.24	Paved Roads	556700.0	4525808.0	259.1	4.3	5.58	3.95
185	B.25	Paved Roads	556704.4	4525804.9	259.1	4.3	5.58	3.95
185	B.26	Paved Roads	556708.8	4525801.7	259.1	4.3	5.58	3.95
185	B.27	Paved Roads	556713.2	4525798.5	259.1	4.3	5.58	3.95
185	B.28	Paved Roads	556717.6	4525795.4	259.1	4.3	5.58	3.95
185	B.29	Paved Roads	556722.0	4525792.2	259.1	4.3	5.58	3.95
185	B.30	Paved Roads	556726.6	4525789.4	259.1	4.3	5.58	3.95
185	B.31	Paved Roads	556731.2	4525786.5	259.1	4.3	5.58	3.95
185	B.32	Paved Roads	556734.9	4525785.1	259.1	4.3	5.58	3.95
185	B.33	Paved Roads	556738.5	4525783.7	259.1	4.3	5.58	3.95
185	C.01	Paved Roads	556753.8	4525820.5	259.1	4.3	5.58	3.95
185	C.02	Paved Roads	556754.5	4525814.7	259.1	4.3	5.58	3.95
185	C.03	Paved Roads	556755.3	4525808.9	259.1	4.3	5.58	3.95
185	C.04	Paved Roads	556754.1	4525803.8	259.1	4.3	5.58	3.95
185	C.05	Paved Roads	556753.0	4525798.8	259.1	4.3	5.58	3.95
185	C.06	Paved Roads	556749.2	4525794.9	259.1	4.3	5.58	3.95
185	C.07	Paved Roads	556745.5	4525791.0	259.1	4.3	5.58	3.95
185	C.08	Paved Roads	556741.8	4525787.1	259.1	4.3	5.58	3.95
185	C.09	Paved Roads	556738.1	4525783.2	259.1	4.3	5.58	3.95
185	D.01	Paved Roads	556612.5	4525895.3	259.1	4.3	5.58	3.95
185	D.02	Paved Roads	556617.3	4525894.5	259.1	4.3	5.58	3.95
185	D.03	Paved Roads	556622.0	4525893.6	259.1	4.3	5.58	3.95
185	D.04	Paved Roads	556626.8	4525892.8	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
185	D.05	Paved Roads	556631.6	4525892.0	259.1	4.3	5.58	3.95
185	D.06	Paved Roads	556636.3	4525891.1	259.1	4.3	5.58	3.95
185	D.07	Paved Roads	556641.5	4525890.4	259.1	4.3	5.58	3.95
185	D.08	Paved Roads	556646.8	4525889.7	259.1	4.3	5.58	3.95
185	D.09	Paved Roads	556652.0	4525889.1	259.1	4.3	5.58	3.95
185	D.10	Paved Roads	556657.2	4525888.4	259.1	4.3	5.58	3.95
185	D.11	Paved Roads	556663.2	4525888.1	259.1	4.3	5.58	3.95
185	D.12	Paved Roads	556669.2	4525887.8	259.1	4.3	5.58	3.95
185	D.13	Paved Roads	556675.2	4525887.5	259.1	4.3	5.58	3.95
185	D.14	Paved Roads	556680.1	4525885.8	259.1	4.3	5.58	3.95
185	D.15	Paved Roads	556685.1	4525884.0	259.1	4.3	5.58	3.95
185	D.16	Paved Roads	556690.1	4525882.2	259.1	4.3	5.58	3.95
185	D.17	Paved Roads	556695.1	4525880.5	259.1	4.3	5.58	3.95
185	D.18	Paved Roads	556699.3	4525877.6	259.1	4.3	5.58	3.95
185	D.19	Paved Roads	556703.6	4525874.7	259.1	4.3	5.58	3.95
185	D.20	Paved Roads	556707.8	4525871.9	259.1	4.3	5.58	3.95
185	D.21	Paved Roads	556711.2	4525868.2	259.1	4.3	5.58	3.95
185	D.22	Paved Roads	556714.6	4525864.5	259.1	4.3	5.58	3.95
185	D.23	Paved Roads	556718.1	4525860.8	259.1	4.3	5.58	3.95
185	D.24	Paved Roads	556720.8	4525857.0	259.1	4.3	5.58	3.95
185	D.25	Paved Roads	556723.6	4525853.1	259.1	4.3	5.58	3.95
185	D.26	Paved Roads	556726.4	4525849.3	259.1	4.3	5.58	3.95
185	D.27	Paved Roads	556728.8	4525845.3	259.1	4.3	5.58	3.95
185	D.28	Paved Roads	556731.3	4525841.3	259.1	4.3	5.58	3.95
185	D.29	Paved Roads	556733.8	4525837.3	259.1	4.3	5.58	3.95
185	D.30	Paved Roads	556738.1	4525833.9	259.1	4.3	5.58	3.95
185	D.31	Paved Roads	556742.5	4525830.6	259.1	4.3	5.58	3.95
185	D.32	Paved Roads	556746.9	4525827.2	259.1	4.3	5.58	3.95
185	E.01	Paved Roads	556701.3	4525696.8	259.1	4.3	5.58	3.95
185	E.02	Paved Roads	556697.7	4525700.9	259.1	4.3	5.58	3.95
185	E.03	Paved Roads	556694.2	4525704.9	259.1	4.3	5.58	3.95
185	E.04	Paved Roads	556690.6	4525709.0	259.1	4.3	5.58	3.95
185	E.05	Paved Roads	556687.0	4525713.1	259.1	4.3	5.58	3.95
185	E.06	Paved Roads	556683.5	4525717.2	259.1	4.3	5.58	3.95
185	E.07	Paved Roads	556679.9	4525721.3	259.1	4.3	5.58	3.95
185	F.01	Paved Roads	556780.3	4525772.9	259.1	4.3	5.58	3.95
185	F.02	Paved Roads	556784.8	4525775.8	259.1	4.3	5.58	3.95
185	F.03	Paved Roads	556789.3	4525778.7	259.1	4.3	5.58	3.95
185	F.04	Paved Roads	556793.8	4525781.7	259.1	4.3	5.58	3.95
185	G.01	Paved Roads	556738.1	4525783.2	259.1	4.3	5.58	3.95
185	G.02	Paved Roads	556734.5	4525778.8	259.1	4.3	5.58	3.95
185	G.03	Paved Roads	556730.9	4525774.4	259.1	4.3	5.58	3.95
185	G.04	Paved Roads	556727.3	4525770.1	259.1	4.3	5.58	3.95
185	G.05	Paved Roads	556723.7	4525765.7	259.1	4.3	5.58	3.95
185	G.06	Paved Roads	556720.2	4525761.3	259.1	4.3	5.58	3.95
185	G.07	Paved Roads	556716.6	4525756.9	259.1	4.3	5.58	3.95
185	G.08	Paved Roads	556713.0	4525752.6	259.1	4.3	5.58	3.95
185	G.09	Paved Roads	556709.4	4525748.2	259.1	4.3	5.58	3.95
185	G.10	Paved Roads	556705.8	4525743.8	259.1	4.3	5.58	3.95
185	G.11	Paved Roads	556702.2	4525739.4	259.1	4.3	5.58	3.95
185	G.12	Paved Roads	556698.7	4525735.1	259.1	4.3	5.58	3.95
185	G.13	Paved Roads	556694.1	4525731.6	259.1	4.3	5.58	3.95
185	G.14	Paved Roads	556689.5	4525728.2	259.1	4.3	5.58	3.95
185	G.15	Paved Roads	556684.9	4525724.8	259.1	4.3	5.58	3.95
185	G.16	Paved Roads	556680.3	4525721.4	259.1	4.3	5.58	3.95
185	H.01	Paved Roads	556713.7	4525675.1	259.1	4.3	5.58	3.95
185	H.02	Paved Roads	556711.2	4525679.3	259.1	4.3	5.58	3.95
185	H.03	Paved Roads	556708.7	4525683.5	259.1	4.3	5.58	3.95
185	H.04	Paved Roads	556706.3	4525687.7	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
185	H.05	Paved Roads	556703.8	4525691.9	259.1	4.3	5.58	3.95
185	H.06	Paved Roads	556701.3	4525696.1	259.1	4.3	5.58	3.95
185	I.01	Paved Roads	556599.1	4525642.8	259.1	4.3	5.58	3.95
185	I.02	Paved Roads	556604.0	4525643.7	259.1	4.3	5.58	3.95
185	I.03	Paved Roads	556608.9	4525644.6	259.1	4.3	5.58	3.95
185	I.04	Paved Roads	556613.9	4525645.5	259.1	4.3	5.58	3.95
185	I.05	Paved Roads	556617.5	4525647.2	259.1	4.3	5.58	3.95
185	I.06	Paved Roads	556621.1	4525648.9	259.1	4.3	5.58	3.95
185	I.07	Paved Roads	556624.8	4525650.7	259.1	4.3	5.58	3.95
185	I.08	Paved Roads	556629.0	4525652.8	259.1	4.3	5.58	3.95
185	I.09	Paved Roads	556633.3	4525654.9	259.1	4.3	5.58	3.95
185	I.10	Paved Roads	556638.3	4525654.9	259.1	4.3	5.58	3.95
185	I.11	Paved Roads	556643.3	4525654.9	259.1	4.3	5.58	3.95
185	I.12	Paved Roads	556648.3	4525655.0	259.1	4.3	5.58	3.95
185	I.13	Paved Roads	556653.3	4525654.2	259.1	4.3	5.58	3.95
185	I.14	Paved Roads	556658.2	4525653.4	259.1	4.3	5.58	3.95
185	I.15	Paved Roads	556663.2	4525652.6	259.1	4.3	5.58	3.95
185	I.16	Paved Roads	556668.2	4525651.8	259.1	4.3	5.58	3.95
185	I.17	Paved Roads	556673.5	4525651.6	259.1	4.3	5.58	3.95
185	I.18	Paved Roads	556678.9	4525651.5	259.1	4.3	5.58	3.95
185	I.19	Paved Roads	556684.2	4525651.4	259.1	4.3	5.58	3.95
185	I.20	Paved Roads	556689.3	4525654.6	259.1	4.3	5.58	3.95
185	I.21	Paved Roads	556694.3	4525657.8	259.1	4.3	5.58	3.95
185	I.22	Paved Roads	556698.3	4525660.2	259.1	4.3	5.58	3.95
185	I.23	Paved Roads	556702.3	4525662.6	259.1	4.3	5.58	3.95
185	I.24	Paved Roads	556706.3	4525665.1	259.1	4.3	5.58	3.95
185	I.25	Paved Roads	556710.3	4525667.5	259.1	4.3	5.58	3.95
185	I.26	Paved Roads	556712.4	4525671.4	259.1	4.3	5.58	3.95
185	I.27	Paved Roads	556714.6	4525675.3	259.1	4.3	5.58	3.95
185	J.01	Paved Roads	556679.9	4525721.6	259.1	4.3	5.58	3.95
185	J.02	Paved Roads	556674.6	4525720.9	259.1	4.3	5.58	3.95
185	J.03	Paved Roads	556669.3	4525720.2	259.1	4.3	5.58	3.95
185	J.04	Paved Roads	556664.9	4525719.7	259.1	4.3	5.58	3.95
185	J.05	Paved Roads	556660.6	4525719.2	259.1	4.3	5.58	3.95
185	J.06	Paved Roads	556656.4	4525718.1	259.1	4.3	5.58	3.95
185	J.07	Paved Roads	556652.2	4525716.9	259.1	4.3	5.58	3.95
185	J.08	Paved Roads	556649.9	4525715.0	259.1	4.3	5.58	3.95
185	J.09	Paved Roads	556647.5	4525713.0	259.1	4.3	5.58	3.95
185	J.10	Paved Roads	556644.3	4525709.5	259.1	4.3	5.58	3.95
185	J.11	Paved Roads	556641.1	4525705.9	259.1	4.3	5.58	3.95
185	K.01	Paved Roads	556641.1	4525705.9	259.1	4.3	5.58	3.95
185	K.02	Paved Roads	556639.8	4525700.8	259.1	4.3	5.58	3.95
185	K.03	Paved Roads	556638.6	4525695.7	259.1	4.3	5.58	3.95
185	K.04	Paved Roads	556637.5	4525692.1	259.1	4.3	5.58	3.95
185	K.05	Paved Roads	556636.4	4525688.6	259.1	4.3	5.58	3.95
185	K.06	Paved Roads	556635.8	4525685.5	259.1	4.3	5.58	3.95
185	K.07	Paved Roads	556635.1	4525682.5	259.1	4.3	5.58	3.95
185	K.08	Paved Roads	556633.9	4525678.5	259.1	4.3	5.58	3.95
185	K.09	Paved Roads	556632.6	4525674.5	259.1	4.3	5.58	3.95
185	K.10	Paved Roads	556631.4	4525671.4	259.1	4.3	5.58	3.95
185	K.11	Paved Roads	556630.1	4525668.4	259.1	4.3	5.58	3.95
185	K.12	Paved Roads	556627.7	4525666.2	259.1	4.3	5.58	3.95
185	K.13	Paved Roads	556625.3	4525664.1	259.1	4.3	5.58	3.95
185	K.14	Paved Roads	556621.9	4525661.9	259.1	4.3	5.58	3.95
185	K.15	Paved Roads	556618.6	4525659.6	259.1	4.3	5.58	3.95
185	K.16	Paved Roads	556615.7	4525656.7	259.1	4.3	5.58	3.95
185	K.17	Paved Roads	556612.8	4525653.8	259.1	4.3	5.58	3.95
185	K.18	Paved Roads	556608.4	4525650.3	259.1	4.3	5.58	3.95
185	K.19	Paved Roads	556603.9	4525646.9	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
185	K.20	Paved Roads	556599.4	4525643.4	259.1	4.3	5.58	3.95
184	M.01	Unpaved Roads	556640.4	4525705.6	259.1	4.3	5.58	3.95
184	M.02	Unpaved Roads	556635.6	4525702.5	259.1	4.3	5.58	3.95
184	M.03	Unpaved Roads	556630.8	4525699.4	259.1	4.3	5.58	3.95
184	M.04	Unpaved Roads	556627.7	4525696.8	259.1	4.3	5.58	3.95
184	M.05	Unpaved Roads	556624.6	4525694.1	259.1	4.3	5.58	3.95
184	M.06	Unpaved Roads	556621.6	4525691.4	259.1	4.3	5.58	3.95
184	M.07	Unpaved Roads	556616.9	4525687.6	259.1	4.3	5.58	3.95
184	M.08	Unpaved Roads	556612.3	4525683.9	259.1	4.3	5.58	3.95
184	M.09	Unpaved Roads	556608.1	4525680.2	259.1	4.3	5.58	3.95
184	M.10	Unpaved Roads	556604.0	4525676.5	259.1	4.3	5.58	3.95
184	M.11	Unpaved Roads	556602.0	4525672.6	259.1	4.3	5.58	3.95
184	M.12	Unpaved Roads	556600.0	4525668.8	259.1	4.3	5.58	3.95
184	M.13	Unpaved Roads	556597.9	4525664.9	259.1	4.3	5.58	3.95
184	M.14	Unpaved Roads	556597.2	4525660.5	259.1	4.3	5.58	3.95
184	M.15	Unpaved Roads	556596.5	4525656.1	259.1	4.3	5.58	3.95
184	M.16	Unpaved Roads	556595.8	4525651.7	259.1	4.3	5.58	3.95
184	M.17	Unpaved Roads	556597.0	4525647.6	259.1	4.3	5.58	3.95
184	M.18	Unpaved Roads	556598.1	4525643.4	259.1	4.3	5.58	3.95
184	N.01	Unpaved Roads	556737.1	4525783.2	259.1	4.3	5.58	3.95
184	N.02	Unpaved Roads	556731.9	4525782.5	259.1	4.3	5.58	3.95
184	N.03	Unpaved Roads	556726.8	4525781.8	259.1	4.3	5.58	3.95
184	N.04	Unpaved Roads	556721.6	4525781.1	259.1	4.3	5.58	3.95
184	N.05	Unpaved Roads	556716.2	4525781.6	259.1	4.3	5.58	3.95
184	N.06	Unpaved Roads	556710.9	4525782.0	259.1	4.3	5.58	3.95
184	N.07	Unpaved Roads	556707.1	4525784.6	259.1	4.3	5.58	3.95
184	N.08	Unpaved Roads	556703.4	4525787.3	259.1	4.3	5.58	3.95
184	N.09	Unpaved Roads	556699.6	4525789.9	259.1	4.3	5.58	3.95
184	N.10	Unpaved Roads	556695.8	4525792.5	259.1	4.3	5.58	3.95
184	N.11	Unpaved Roads	556691.0	4525795.5	259.1	4.3	5.58	3.95
184	N.12	Unpaved Roads	556686.2	4525798.5	259.1	4.3	5.58	3.95
184	N.13	Unpaved Roads	556681.4	4525801.5	259.1	4.3	5.58	3.95
184	N.14	Unpaved Roads	556676.7	4525804.5	259.1	4.3	5.58	3.95
184	N.15	Unpaved Roads	556671.9	4525807.5	259.1	4.3	5.58	3.95
184	N.16	Unpaved Roads	556667.1	4525810.5	259.1	4.3	5.58	3.95
184	N.17	Unpaved Roads	556662.3	4525813.5	259.1	4.3	5.58	3.95
184	N.18	Unpaved Roads	556657.5	4525816.5	259.1	4.3	5.58	3.95
184	N.19	Unpaved Roads	556652.7	4525819.5	259.1	4.3	5.58	3.95
184	N.20	Unpaved Roads	556647.9	4525822.5	259.1	4.3	5.58	3.95
184	N.21	Unpaved Roads	556643.2	4525825.4	259.1	4.3	5.58	3.95
184	N.22	Unpaved Roads	556638.3	4525827.5	259.1	4.3	5.58	3.95
184	N.23	Unpaved Roads	556633.4	4525829.6	259.1	4.3	5.58	3.95
184	N.24	Unpaved Roads	556628.6	4525831.6	259.1	4.3	5.58	3.95
184	N.25	Unpaved Roads	556623.7	4525833.7	259.1	4.3	5.58	3.95
184	N.26	Unpaved Roads	556618.8	4525835.7	259.1	4.3	5.58	3.95
184	N.27	Unpaved Roads	556614.0	4525837.8	259.1	4.3	5.58	3.95
184	N.28	Unpaved Roads	556609.1	4525834.7	259.1	4.3	5.58	3.95
184	N.29	Unpaved Roads	556604.3	4525831.6	259.1	4.3	5.58	3.95
184	N.30	Unpaved Roads	556599.5	4525828.5	259.1	4.3	5.58	3.95
184	N.31	Unpaved Roads	556596.9	4525823.6	259.1	4.3	5.58	3.95
184	N.32	Unpaved Roads	556594.2	4525818.8	259.1	4.3	5.58	3.95
184	N.33	Unpaved Roads	556597.1	4525813.9	259.1	4.3	5.58	3.95
184	N.34	Unpaved Roads	556600.0	4525809.0	259.1	4.3	5.58	3.95
184	N.35	Unpaved Roads	556602.8	4525804.1	259.1	4.3	5.58	3.95
184	N.36	Unpaved Roads	556605.7	4525799.2	259.1	4.3	5.58	3.95
184	N.37	Unpaved Roads	556608.6	4525794.3	259.1	4.3	5.58	3.95
184	N.38	Unpaved Roads	556611.4	4525789.5	259.1	4.3	5.58	3.95
184	N.39	Unpaved Roads	556613.5	4525784.8	259.1	4.3	5.58	3.95
184	N.40	Unpaved Roads	556615.6	4525780.1	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
184	N.41	Unpaved Roads	556617.7	4525775.4	259.1	4.3	5.58	3.95
184	N.42	Unpaved Roads	556619.8	4525770.7	259.1	4.3	5.58	3.95
184	N.43	Unpaved Roads	556621.6	4525765.3	259.1	4.3	5.58	3.95
184	N.44	Unpaved Roads	556623.3	4525759.8	259.1	4.3	5.58	3.95
184	N.45	Unpaved Roads	556625.1	4525754.4	259.1	4.3	5.58	3.95
184	N.46	Unpaved Roads	556626.8	4525749.0	259.1	4.3	5.58	3.95
184	N.47	Unpaved Roads	556629.9	4525744.2	259.1	4.3	5.58	3.95
184	N.48	Unpaved Roads	556632.9	4525739.4	259.1	4.3	5.58	3.95
184	N.49	Unpaved Roads	556636.0	4525734.6	259.1	4.3	5.58	3.95
184	N.50	Unpaved Roads	556639.1	4525729.8	259.1	4.3	5.58	3.95
184	N.51	Unpaved Roads	556639.3	4525724.9	259.1	4.3	5.58	3.95
184	N.52	Unpaved Roads	556639.6	4525720.1	259.1	4.3	5.58	3.95
184	N.53	Unpaved Roads	556639.9	4525715.3	259.1	4.3	5.58	3.95
184	N.54	Unpaved Roads	556640.2	4525710.4	259.1	4.3	5.58	3.95
184	N.55	Unpaved Roads	556640.4	4525705.6	259.1	4.3	5.58	3.95
185	O.01	Paved Roads	556756.2	4525757.2	259.1	4.3	5.58	3.95
185	O.02	Paved Roads	556760.8	4525760.3	259.1	4.3	5.58	3.95
185	O.03	Paved Roads	556765.5	4525763.3	259.1	4.3	5.58	3.95
185	O.04	Paved Roads	556770.1	4525766.3	259.1	4.3	5.58	3.95
185	O.05	Paved Roads	556774.7	4525769.4	259.1	4.3	5.58	3.95
185	O.06	Paved Roads	556779.4	4525772.4	259.1	4.3	5.58	3.95
185	P.01	Paved Roads	556737.6	4525783.2	259.1	4.3	5.58	3.95
185	P.02	Paved Roads	556740.7	4525778.8	259.1	4.3	5.58	3.95
185	P.03	Paved Roads	556743.8	4525774.4	259.1	4.3	5.58	3.95
185	P.04	Paved Roads	556746.9	4525770.0	259.1	4.3	5.58	3.95
185	P.05	Paved Roads	556750.0	4525765.6	259.1	4.3	5.58	3.95
185	P.06	Paved Roads	556753.1	4525761.2	259.1	4.3	5.58	3.95
185	P.07	Paved Roads	556756.2	4525756.8	259.1	4.3	5.58	3.95
185	Q.01	Paved Roads	556680.5	4525721.6	259.1	4.3	5.58	3.95
185	Q.02	Paved Roads	556685.9	4525724.2	259.1	4.3	5.58	3.95
185	Q.03	Paved Roads	556691.3	4525726.7	259.1	4.3	5.58	3.95
185	Q.04	Paved Roads	556696.7	4525729.2	259.1	4.3	5.58	3.95
185	Q.05	Paved Roads	556702.1	4525731.8	259.1	4.3	5.58	3.95
185	Q.06	Paved Roads	556707.4	4525734.3	259.1	4.3	5.58	3.95
185	Q.07	Paved Roads	556712.8	4525736.8	259.1	4.3	5.58	3.95
185	Q.08	Paved Roads	556718.2	4525739.4	259.1	4.3	5.58	3.95
185	Q.09	Paved Roads	556723.6	4525741.9	259.1	4.3	5.58	3.95
185	Q.10	Paved Roads	556729.0	4525744.5	259.1	4.3	5.58	3.95
185	Q.11	Paved Roads	556734.3	4525747.0	259.1	4.3	5.58	3.95
185	Q.12	Paved Roads	556739.7	4525749.5	259.1	4.3	5.58	3.95
185	Q.13	Paved Roads	556745.1	4525752.1	259.1	4.3	5.58	3.95
185	Q.14	Paved Roads	556750.5	4525754.6	259.1	4.3	5.58	3.95
185	Q.15	Paved Roads	556755.9	4525757.1	259.1	4.3	5.58	3.95
184	R.01	Unpaved Roads	556781.8	4525772.9	259.1	4.3	5.58	3.95
184	R.02	Unpaved Roads	556785.3	4525769.5	259.1	4.3	5.58	3.95
184	R.03	Unpaved Roads	556788.9	4525766.2	259.1	4.3	5.58	3.95
184	R.04	Unpaved Roads	556792.4	4525762.8	259.1	4.3	5.58	3.95
184	R.05	Unpaved Roads	556795.9	4525759.5	259.1	4.3	5.58	3.95
184	R.06	Unpaved Roads	556800.2	4525756.1	259.1	4.3	5.58	3.95
184	R.07	Unpaved Roads	556804.4	4525752.8	259.1	4.3	5.58	3.95
184	R.08	Unpaved Roads	556808.6	4525749.4	259.1	4.3	5.58	3.95
184	R.09	Unpaved Roads	556813.1	4525747.6	259.1	4.3	5.58	3.95
184	R.10	Unpaved Roads	556817.6	4525745.9	259.1	4.3	5.58	3.95
184	R.11	Unpaved Roads	556822.1	4525744.1	259.1	4.3	5.58	3.95
184	R.12	Unpaved Roads	556826.6	4525742.3	259.1	4.3	5.58	3.95
184	R.13	Unpaved Roads	556830.5	4525739.2	259.1	4.3	5.58	3.95
184	R.14	Unpaved Roads	556834.4	4525736.1	259.1	4.3	5.58	3.95
184	R.15	Unpaved Roads	556838.3	4525732.7	259.1	4.3	5.58	3.95
184	R.16	Unpaved Roads	556842.2	4525729.4	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
184	R.17	Unpaved Roads	556845.2	4525726.4	259.1	4.3	5.58	3.95
184	R.18	Unpaved Roads	556848.1	4525723.3	259.1	4.3	5.58	3.95
184	R.19	Unpaved Roads	556851.0	4525720.3	259.1	4.3	5.58	3.95
184	R.20	Unpaved Roads	556854.8	4525717.9	259.1	4.3	5.58	3.95
184	R.21	Unpaved Roads	556858.5	4525715.5	259.1	4.3	5.58	3.95
184	R.22	Unpaved Roads	556862.2	4525713.1	259.1	4.3	5.58	3.95
184	R.23	Unpaved Roads	556866.9	4525709.8	259.1	4.3	5.58	3.95
184	R.24	Unpaved Roads	556871.5	4525706.4	259.1	4.3	5.58	3.95
184	R.25	Unpaved Roads	556875.4	4525704.7	259.1	4.3	5.58	3.95
184	R.26	Unpaved Roads	556879.3	4525703.0	259.1	4.3	5.58	3.95
184	R.27	Unpaved Roads	556883.2	4525701.2	259.1	4.3	5.58	3.95
184	R.28	Unpaved Roads	556887.8	4525697.6	259.1	4.3	5.58	3.95
184	R.29	Unpaved Roads	556892.4	4525694.0	259.1	4.3	5.58	3.95
184	R.30	Unpaved Roads	556895.5	4525691.2	259.1	4.3	5.58	3.95
184	R.31	Unpaved Roads	556898.6	4525688.3	259.1	4.3	5.58	3.95
184	R.32	Unpaved Roads	556901.7	4525685.4	259.1	4.3	5.58	3.95
184	R.33	Unpaved Roads	556904.9	4525681.2	259.1	4.3	5.58	3.95
184	R.34	Unpaved Roads	556908.1	4525677.0	259.1	4.3	5.58	3.95
184	R.35	Unpaved Roads	556911.3	4525672.8	259.1	4.3	5.58	3.95
184	R.36	Unpaved Roads	556914.4	4525668.6	259.1	4.3	5.58	3.95
184	R.37	Unpaved Roads	556918.1	4525665.0	259.1	4.3	5.58	3.95
184	R.38	Unpaved Roads	556921.8	4525661.4	259.1	4.3	5.58	3.95
184	R.39	Unpaved Roads	556925.4	4525657.8	259.1	4.3	5.58	3.95
184	R.40	Unpaved Roads	556929.1	4525654.2	259.1	4.3	5.58	3.95
184	R.41	Unpaved Roads	556932.3	4525649.2	259.1	4.3	5.58	3.95
184	R.42	Unpaved Roads	556935.5	4525644.2	259.1	4.3	5.58	3.95
184	R.43	Unpaved Roads	556938.7	4525639.1	259.1	4.3	5.58	3.95
184	R.44	Unpaved Roads	556941.9	4525634.1	259.1	4.3	5.58	3.95
184	R.45	Unpaved Roads	556945.3	4525629.8	259.1	4.3	5.58	3.95
184	R.46	Unpaved Roads	556948.7	4525625.6	259.1	4.3	5.58	3.95
184	R.47	Unpaved Roads	556952.1	4525621.4	259.1	4.3	5.58	3.95
184	R.48	Unpaved Roads	556955.6	4525617.2	259.1	4.3	5.58	3.95
184	R.49	Unpaved Roads	556959.0	4525612.9	259.1	4.3	5.58	3.95
184	R.50	Unpaved Roads	556961.5	4525607.8	259.1	4.3	5.58	3.95
184	R.51	Unpaved Roads	556963.9	4525602.7	259.1	4.3	5.58	3.95
184	R.52	Unpaved Roads	556966.4	4525597.5	259.1	4.3	5.58	3.95
184	S.01	Unpaved Roads	556973.7	4525532.9	259.1	4.3	5.58	3.95
184	S.02	Unpaved Roads	556976.8	4525528.1	259.1	4.3	5.58	3.95
184	S.03	Unpaved Roads	556979.9	4525523.3	259.1	4.3	5.58	3.95
184	S.04	Unpaved Roads	556983.0	4525518.5	259.1	4.3	5.58	3.95
184	S.05	Unpaved Roads	556986.1	4525513.6	259.1	4.3	5.58	3.95
184	S.06	Unpaved Roads	556989.2	4525508.8	259.1	4.3	5.58	3.95
184	S.07	Unpaved Roads	556992.3	4525504.0	259.1	4.3	5.58	3.95
184	S.08	Unpaved Roads	556998.1	4525504.3	259.1	4.3	5.58	3.95
184	S.09	Unpaved Roads	557003.9	4525504.6	259.1	4.3	5.58	3.95
184	S.10	Unpaved Roads	557009.4	4525505.5	259.1	4.3	5.58	3.95
184	S.11	Unpaved Roads	557014.9	4525506.3	259.1	4.3	5.58	3.95
184	S.12	Unpaved Roads	557020.4	4525507.2	259.1	4.3	5.58	3.95
184	S.13	Unpaved Roads	557021.2	4525512.6	259.1	4.3	5.58	3.95
184	S.14	Unpaved Roads	557021.9	4525518.1	259.1	4.3	5.58	3.95
184	S.15	Unpaved Roads	557022.7	4525523.6	259.1	4.3	5.58	3.95
184	S.16	Unpaved Roads	557019.9	4525528.4	259.1	4.3	5.58	3.95
184	S.17	Unpaved Roads	557017.1	4525533.2	259.1	4.3	5.58	3.95
184	S.18	Unpaved Roads	557014.3	4525538.0	259.1	4.3	5.58	3.95
184	S.19	Unpaved Roads	557011.2	4525542.5	259.1	4.3	5.58	3.95
184	S.20	Unpaved Roads	557008.0	4525547.0	259.1	4.3	5.58	3.95
184	S.21	Unpaved Roads	557004.8	4525551.6	259.1	4.3	5.58	3.95
184	S.22	Unpaved Roads	557001.6	4525556.1	259.1	4.3	5.58	3.95
184	S.23	Unpaved Roads	556998.4	4525560.6	259.1	4.3	5.58	3.95

MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
184	S.24	Unpaved Roads	556995.2	4525565.1	259.1	4.3	5.58	3.95
184	S.25	Unpaved Roads	556992.0	4525569.6	259.1	4.3	5.58	3.95
184	S.26	Unpaved Roads	556988.9	4525574.1	259.1	4.3	5.58	3.95
184	S.27	Unpaved Roads	556985.7	4525578.6	259.1	4.3	5.58	3.95
184	S.28	Unpaved Roads	556982.5	4525583.2	259.1	4.3	5.58	3.95
184	S.29	Unpaved Roads	556978.7	4525586.9	259.1	4.3	5.58	3.95
184	S.30	Unpaved Roads	556974.9	4525590.6	259.1	4.3	5.58	3.95
184	S.31	Unpaved Roads	556971.1	4525594.3	259.1	4.3	5.58	3.95
184	S.32	Unpaved Roads	556967.3	4525598.0	259.1	4.3	5.58	3.95
184	T.01	Unpaved Roads	556966.4	4525596.6	259.1	4.3	5.58	3.95
184	T.02	Unpaved Roads	556961.6	4525593.2	259.1	4.3	5.58	3.95
184	T.03	Unpaved Roads	556956.7	4525589.9	259.1	4.3	5.58	3.95
184	T.04	Unpaved Roads	556951.9	4525586.6	259.1	4.3	5.58	3.95
184	T.05	Unpaved Roads	556947.1	4525583.3	259.1	4.3	5.58	3.95
184	T.06	Unpaved Roads	556942.3	4525580.0	259.1	4.3	5.58	3.95
184	T.07	Unpaved Roads	556945.3	4525575.3	259.1	4.3	5.58	3.95
184	T.08	Unpaved Roads	556948.4	4525570.6	259.1	4.3	5.58	3.95
184	T.09	Unpaved Roads	556951.4	4525566.0	259.1	4.3	5.58	3.95
184	T.10	Unpaved Roads	556954.4	4525561.3	259.1	4.3	5.58	3.95
184	T.11	Unpaved Roads	556957.5	4525556.6	259.1	4.3	5.58	3.95
184	T.12	Unpaved Roads	556960.5	4525552.0	259.1	4.3	5.58	3.95
184	T.13	Unpaved Roads	556963.6	4525547.3	259.1	4.3	5.58	3.95
184	T.14	Unpaved Roads	556966.6	4525542.7	259.1	4.3	5.58	3.95
184	T.15	Unpaved Roads	556969.6	4525538.0	259.1	4.3	5.58	3.95
184	T.16	Unpaved Roads	556972.7	4525533.3	259.1	4.3	5.58	3.95
185	U.01	Paved Roads	556746.0	4525629.6	259.1	4.3	5.58	3.95
185	U.02	Paved Roads	556748.5	4525624.8	259.1	4.3	5.58	3.95
185	U.03	Paved Roads	556751.0	4525619.9	259.1	4.3	5.58	3.95
185	U.04	Paved Roads	556753.6	4525615.0	259.1	4.3	5.58	3.95
185	U.05	Paved Roads	556756.1	4525610.1	259.1	4.3	5.58	3.95
185	U.06	Paved Roads	556758.6	4525605.2	259.1	4.3	5.58	3.95
185	U.07	Paved Roads	556761.2	4525600.4	259.1	4.3	5.58	3.95
185	U.08	Paved Roads	556763.7	4525595.5	259.1	4.3	5.58	3.95
185	U.09	Paved Roads	556763.2	4525591.9	259.1	4.3	5.58	3.95
185	U.10	Paved Roads	556762.8	4525588.2	259.1	4.3	5.58	3.95
185	U.11	Paved Roads	556758.9	4525585.5	259.1	4.3	5.58	3.95
185	U.12	Paved Roads	556755.1	4525582.9	259.1	4.3	5.58	3.95
185	U.13	Paved Roads	556749.7	4525580.7	259.1	4.3	5.58	3.95
185	U.14	Paved Roads	556744.3	4525578.5	259.1	4.3	5.58	3.95
185	U.15	Paved Roads	556738.9	4525576.3	259.1	4.3	5.58	3.95
185	U.16	Paved Roads	556733.5	4525574.1	259.1	4.3	5.58	3.95
185	U.17	Paved Roads	556728.1	4525572.0	259.1	4.3	5.58	3.95
185	U.18	Paved Roads	556722.8	4525569.8	259.1	4.3	5.58	3.95
185	U.19	Paved Roads	556717.4	4525567.6	259.1	4.3	5.58	3.95
185	U.20	Paved Roads	556712.5	4525566.3	259.1	4.3	5.58	3.95
185	U.21	Paved Roads	556707.7	4525564.9	259.1	4.3	5.58	3.95
185	U.22	Paved Roads	556702.9	4525563.6	259.1	4.3	5.58	3.95
185	U.23	Paved Roads	556698.4	4525565.5	259.1	4.3	5.58	3.95
185	U.24	Paved Roads	556693.9	4525567.4	259.1	4.3	5.58	3.95
185	U.25	Paved Roads	556689.4	4525569.3	259.1	4.3	5.58	3.95
185	U.26	Paved Roads	556684.9	4525571.2	259.1	4.3	5.58	3.95
185	U.27	Paved Roads	556680.3	4525574.9	259.1	4.3	5.58	3.95
185	U.28	Paved Roads	556675.7	4525578.6	259.1	4.3	5.58	3.95
185	U.29	Paved Roads	556671.1	4525582.3	259.1	4.3	5.58	3.95
185	U.30	Paved Roads	556666.5	4525586.0	259.1	4.3	5.58	3.95
185	U.31	Paved Roads	556661.9	4525589.7	259.1	4.3	5.58	3.95
185	U.32	Paved Roads	556657.2	4525593.4	259.1	4.3	5.58	3.95
185	U.33	Paved Roads	556652.6	4525597.0	259.1	4.3	5.58	3.95
185	U.34	Paved Roads	556648.2	4525600.8	259.1	4.3	5.58	3.95

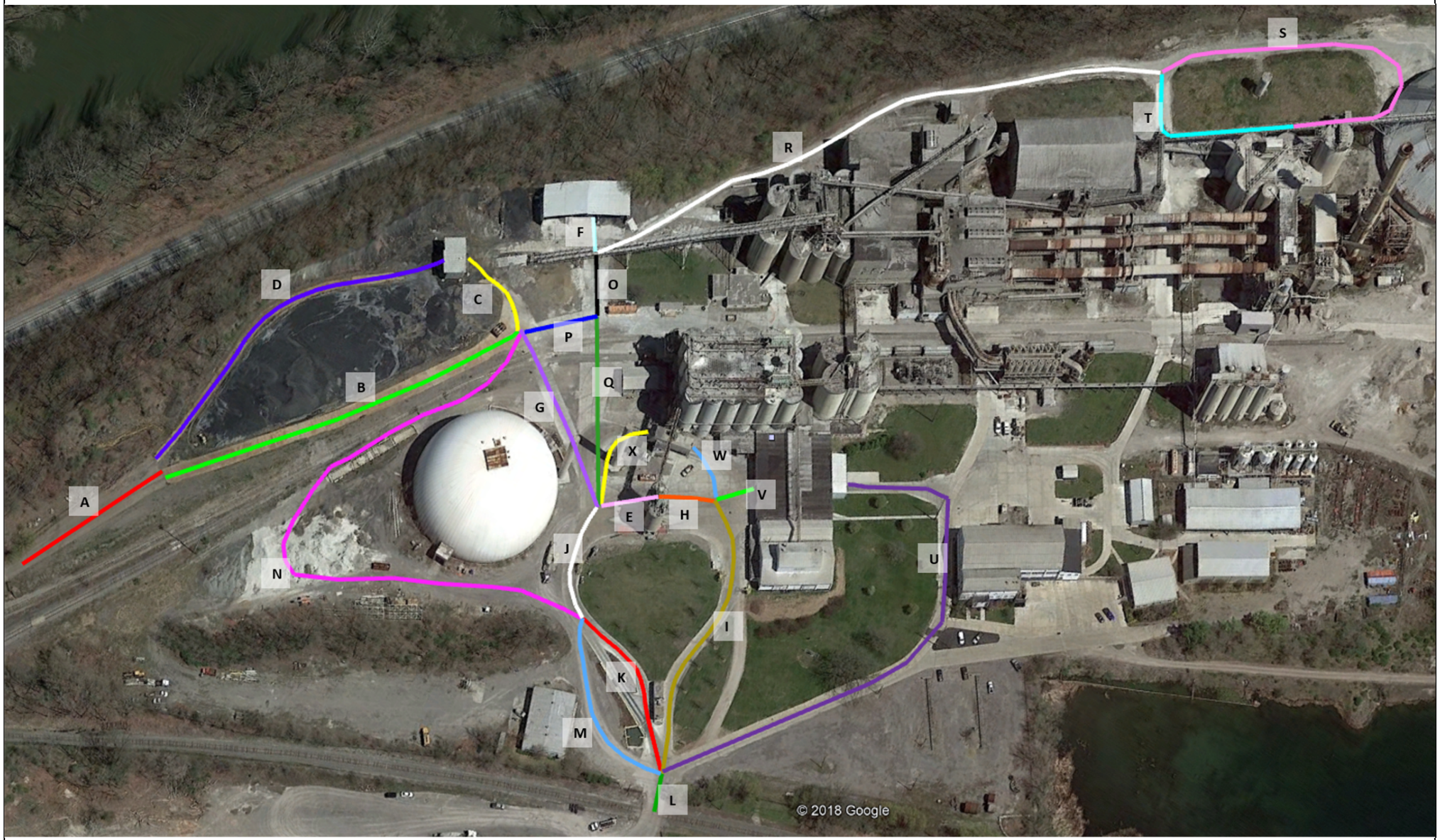
MODELING STACK PARAMETERS - VOLUME SOURCES FOR TRUCK TRAFFIC ROUTES
CEMEX
Wampum Cement Plant

Emission Point Identification Number	Modeling ID	Description	Location (m), NAD83		Base Elevation	Release Height[1]	Initial Horizontal Dimension[2]	Initial Vert. Dimension[3]
			(m)	(m)	(m)	(m)	(m)	(m)
185	U.35	Paved Roads	556643.8	4525604.5	259.1	4.3	5.58	3.95
185	U.36	Paved Roads	556639.3	4525608.2	259.1	4.3	5.58	3.95
185	U.37	Paved Roads	556634.9	4525612.0	259.1	4.3	5.58	3.95
185	U.38	Paved Roads	556630.5	4525615.7	259.1	4.3	5.58	3.95
185	U.39	Paved Roads	556626.0	4525619.4	259.1	4.3	5.58	3.95
185	U.40	Paved Roads	556621.6	4525623.2	259.1	4.3	5.58	3.95
185	U.41	Paved Roads	556617.2	4525626.9	259.1	4.3	5.58	3.95
185	U.42	Paved Roads	556612.7	4525630.6	259.1	4.3	5.58	3.95
185	U.43	Paved Roads	556608.3	4525634.4	259.1	4.3	5.58	3.95
185	U.44	Paved Roads	556603.9	4525638.1	259.1	4.3	5.58	3.95
185	U.45	Paved Roads	556599.4	4525641.8	259.1	4.3	5.58	3.95
185	V.01	Paved Roads	556714.6	4525675.3	259.1	4.3	5.58	3.95
185	V.02	Paved Roads	556717.7	4525671.3	259.1	4.3	5.58	3.95
185	V.03	Paved Roads	556720.8	4525667.3	259.1	4.3	5.58	3.95
185	V.04	Paved Roads	556723.9	4525663.3	259.1	4.3	5.58	3.95
185	W.01	Paved Roads	556713.6	4525674.8	259.1	4.3	5.58	3.95
185	W.02	Paved Roads	556717.0	4525677.4	259.1	4.3	5.58	3.95
185	W.03	Paved Roads	556720.4	4525680.0	259.1	4.3	5.58	3.95
185	W.04	Paved Roads	556723.7	4525682.6	259.1	4.3	5.58	3.95
185	W.05	Paved Roads	556725.9	4525687.0	259.1	4.3	5.58	3.95
185	W.06	Paved Roads	556728.0	4525691.4	259.1	4.3	5.58	3.95
185	X.01	Paved Roads	556681.2	4525721.3	259.1	4.3	5.58	3.95
185	X.02	Paved Roads	556685.2	4525722.4	259.1	4.3	5.58	3.95
185	X.03	Paved Roads	556689.3	4525723.5	259.1	4.3	5.58	3.95
185	X.04	Paved Roads	556693.4	4525724.6	259.1	4.3	5.58	3.95
185	X.05	Paved Roads	556698.0	4525727.2	259.1	4.3	5.58	3.95
185	X.06	Paved Roads	556702.7	4525729.8	259.1	4.3	5.58	3.95
185	X.07	Paved Roads	556707.3	4525730.2	259.1	4.3	5.58	3.95
185	X.08	Paved Roads	556712.0	4525730.5	259.1	4.3	5.58	3.95
185	X.09	Paved Roads	556715.1	4525728.5	259.1	4.3	5.58	3.95
185	X.10	Paved Roads	556718.1	4525726.4	259.1	4.3	5.58	3.95
185	X.11	Paved Roads	556720.7	4525722.9	259.1	4.3	5.58	3.95
185	X.12	Paved Roads	556723.3	4525719.4	259.1	4.3	5.58	3.95
185	X.13	Paved Roads	556724.2	4525716.4	259.1	4.3	5.58	3.95
185	X.14	Paved Roads	556725.0	4525713.3	259.1	4.3	5.58	3.95

1. Release Height was calculated using the following equation: H = 0.5 x Top of the Plume
   (Top of the plume = 1.7 x Vehicle Height).
2. Initial Horizontal Dimension was calculated using the following equation: Y = Road Width + 6m (19.68 ft) / 2.15
3. Initial Vertical Dimension was calculated using the following equation: Z = Top of the Plume / 2.15
   (Top of the plume = 1.7 x Vehicle Height).

Vehicle Height = 5m (16.4 ft)
Road Width = 6m (19.68 ft)

APPENDIX H ROAD SEGMENT DIAGRAMS



POWER ENGINEERS	Road Segment Diagram			
	CEMEX Wampum Cement Plant Lawrence County, Pennsylvania			
	Drafted By: P. Guerrero	Reviewed By: R. Brower	Project No: 152066.02.01	Date: 12/18/2019

APPENDIX I LIST OF DOWNWASH STRUCTURES

DOWNWASH STRUCTURES - BUILDINGS
CEMEX
Wampum Cement Plant

Building Name	Comment	Base Elevation (m)	Number of Tiers	Tier Number	Tier Height (m)	Number of Corners
BLDG7	Building 7	259.08	1	1	4.57	4
Raw.MF	Raw Mill Feed	259.08	1	1	26.21	4
Raw.MC	Raw Mill Cyclones	259.08	1	1	23.16	4
Kiln.BH	Kiln Bag House	259.08	1	1	24.99	4
Pre.HT	Preheater Tower	259.08	1	1	92.05	4
Clink.C	Clinker Cooler	259.08	1	1	23.77	4
Regrind	Regrind Building	259.08	1	1	13.72	4
CM.E	Coal Mill East	259.08	1	1	13.72	4
CM.W	Coal Mill West	259.08	1	1	24.38	4
CM.BH	Coal Mill BH	259.08	1	1	18.29	4
FM1.1	FM1	259.08	2	1	15.85	4
				2	25.30	4
FM2.1	FM2	259.08	2	1	18.29	4
				2	25.30	4
MatStB.1	Material Storage Building	259.08	1	1	17.37	4
UnloadSt	Unload Station	259.08	1	1	8.23	4
MatShed	Material Storage Shed	259.08	1	1	6.10	4
PackHous	Packhouse	259.08	5	1	4.57	12
				2	7.62	4
				3	10.67	4
				4	12.19	4
				5	16.76	4
Office	Office	259.08	1	1	4.57	4
S.Office	South Office	259.08	2	1	4.57	4
				2	7.62	4
E.Office	East Office	259.08	1	1	5.49	4
Maint.Sh	Maintenance Shop	259.08	3	1	6.71	6
				2	12.80	6
				3	14.94	4
CT	Cooling Tower	259.08	1	1	5.49	4

DOWNWASH STRUCTURES - TANKS
CEMEX
Wampum Cement Plant

Tank Name	Description	Base Elevation	Center East (X)	Center North (Y)	Tank Height	Tank Diameter
		(m)	(m)	(m)	(m)	(m)
Dome.N	Storage Dome	259.08	556670.8	4525765.0	30.5	61.0
Dome.S	Clinker Storage Bldg Dome	259.08	557001.4	4525466.7	31.7	68.6
RM.S15	Raw Mat Silo 15	259.08	556894.6	4525652.3	28.3	11.0
Tank63	Truck Load East	259.08	556700.0	4525694.7	18.7	6.1
Tank64	Truck Load West	259.08	556694.3	4525691.5	18.7	6.1
Raw.MTK	Raw Mill Tank	259.08	556882.8	4525589.3	15.8	8.5
R.Silo1	Regrind Silo 1	259.08	556845.8	4525509.4	34.1	7.0
R.Silo2	Regrind Silo 2	259.08	556849.3	4525503.4	34.1	7.0
R.Silo3	Regrind Silo 3	259.08	556852.8	4525497.3	34.1	7.0
R.Silo4	Regrind Silo 4	259.08	556856.3	4525491.2	34.1	7.0
R.Silo5	Regrind Silo 5	259.08	556861.5	4525482.2	7.0	7.0
C.Silo6	Cement Silo6	259.08	556755.9	4525667.5	32.2	7.9
C.Silo7	Cement Silo7	259.08	556763.0	4525671.6	32.2	7.9
C.Silo18	Cement Silo18	259.08	556770.1	4525675.7	32.2	7.9
C.Silo19	Cement Silo19	259.08	556777.2	4525679.8	32.2	7.9
C.Silo8	Cement Silo8	259.08	556751.7	4525674.6	32.2	7.9
C.Silo9	Cement Silo9	259.08	556758.9	4525678.7	32.2	7.9
C.Silo20	Cement Silo20	259.08	556766.0	4525682.8	32.2	7.9
C.Silo21	Cement Silo21	259.08	556773.1	4525686.9	32.2	7.9
C.Silo10	Cement Silo10	259.08	556747.6	4525681.7	32.2	7.9
C.Silo11	Cement Silo11	259.08	556754.8	4525685.8	32.2	7.9
C.Silo22	Cement Silo22	259.08	556761.9	4525689.9	32.2	7.9
C.Silo23	Cement Silo23	259.08	556769.0	4525694.1	32.2	7.9
C.Silo12	Cement Silo12	259.08	556743.5	4525688.8	32.2	7.9
C.Silo13	Cement Silo13	259.08	556750.6	4525692.9	32.2	7.9
C.Silo24	Cement Silo24	259.08	556757.8	4525697.1	32.2	7.9
C.Silo25	Cement Silo25	259.08	556764.9	4525701.2	32.2	7.9
C.Silo14	Cement Silo14	259.08	556739.4	4525696.0	32.2	7.9
C.Silo15	Cement Silo15	259.08	556746.5	4525700.1	32.2	7.9
C.Silo26	Cement Silo26	259.08	556753.7	4525704.2	32.2	7.9
C.Silo27	Cement Silo27	259.08	556760.8	4525708.3	32.2	7.9
C.Silo16	Cement Silo16	259.08	556735.3	4525703.1	32.2	7.9
C.Silo17	Cement Silo17	259.08	556742.4	4525707.2	32.2	7.9
C.Silo28	Cement Silo28	259.08	556749.5	4525711.3	32.2	7.9
C.Silo29	Cement Silo29	259.08	556756.7	4525715.4	32.2	7.9
REC.CB	Receiving coal bin	259.08	556862.1	4525644.9	18.3	5.5
RM.S12	Raw Mat Silo 12	259.08	556822.5	4525679.2	22.3	9.6
RM.S9	Raw Mat Silo 9	259.08	556830.8	4525684.0	22.3	9.6
RM.S6	Raw Mat Silo 6	259.08	556839.1	4525688.8	22.3	9.6
RM.S3	Raw Mat Silo 3	259.08	556847.4	4525693.6	22.3	9.6
RM.S11	Raw Mat Silo 11	259.08	556817.7	4525687.5	22.3	9.6
RM.S8	Raw Mat Silo 8	259.08	556826.0	4525692.3	22.3	9.6
RM.S5	Raw Mat Silo 5	259.08	556834.3	4525697.1	22.3	9.6
RM.S2	Raw Mat Silo 2	259.08	556842.6	4525701.9	22.3	9.6
RM.S10	Raw Mat Silo 10	259.08	556812.9	4525695.8	22.3	9.6
RM.S7	Raw Mat Silo 7	259.08	556821.2	4525700.6	22.3	9.6
RM.S4	Raw Mat Silo 4	259.08	556829.5	4525705.4	22.3	9.6
RM.S1	Raw Mat Silo 1	259.08	556837.8	4525710.2	22.3	9.6
RM.S14	Raw Mat Silo 14	259.08	556812.6	4525710.7	25.3	12.8
RM.S13	Raw Mat Silo 13	259.08	556823.8	4525715.3	28.3	9.6
Bld.S2	Blend Silo 2	259.08	556935.6	4525539.6	19.8	12.8
Bld.S4	Blend Silo 4	259.08	556943.5	4525525.9	19.8	12.8
Bld.S1	Blend Silo 1	259.08	556946.7	4525546.0	19.8	12.8
Bld.S3	Blend Silo 3	259.08	556954.6	4525532.3	19.8	12.8
Bld.S5	Blend Silo 5	259.08	556964.2	4525515.6	29.6	12.8
D.SILO	DustSilo	259.08	556900.5	4525642.0	15.8	6.9
CSilo.4	Cement Silo 4	259.08	556771.3	4525653.5	25.9	12.8
CSilo.2	Cement Silo 2	259.08	556782.4	4525659.9	25.9	12.8

DOWNWASH STRUCTURES - TANKS
CEMEX
Wampum Cement Plant

Tank Name	Description	Base Elevation	Center East (X)	Center North (Y)	Tank Height	Tank Diameter
		(m)	(m)	(m)	(m)	(m)
CSilo.3	Cement Silo 3	259.08	556777.7	4525642.4	25.9	12.8
CSilo.1	Cement Silo 1	259.08	556788.8	4525648.8	25.9	12.8
TK19	Tank 19	259.08	556833.4	4525485.1	12.2	7.6
TK18	Tank 18	259.08	556838.0	4525477.2	12.2	7.6
TK17	Tank 17	259.08	556839.9	4525468.4	8.2	3.7
TK12	Tank 12	259.08	556844.6	4525471.2	8.2	3.7
TK16	Tank 16	259.08	556842.6	4525463.7	8.2	3.7
TK13	Tank 13	259.08	556847.4	4525466.4	8.2	3.7
TK15	Tank 15	259.08	556845.4	4525458.9	8.2	3.7
TK14	Tank 14	259.08	556850.1	4525461.7	8.2	3.7
Rail.W	West Rail Loadout	259.08	556759.3	4525724.3	13.1	3.7
Rail.E	East Rail Loadout	259.08	556762.7	4525726.3	13.1	3.7
Calciner	Calciner	259.08	556927.9	4525557.2	19.2	5.5
K.BURN	KilnBurner	259.08	556964.8	4525433.2	19.2	5.5
AC	Activated Carbon	259.08	556958.5	4525556.5	9.1	3.7
HL	Hydrated Lime	259.08	556961.7	4525551.0	6.1	3.7
K.DHOP	Kiln Dust Hopper	259.08	556898.3	4525508.4	27.7	5.0
S.CLINK	Special Clinker Bin	259.08	557014.8	4525505.6	20.4	6.7

APPENDIX J MERPS ANALYSIS

MERPS ANALYSIS
CEMEX
Wampum Cement Plant

Precursor	Project Emissions Increases		
	Short		Long
	(lb/hr)	(TPY)	(TPY)
NOX	222.7	975	861
SO2	52.01	227.8	227.8

ID		Height	Emissions	Photochemical Modeling Impacts (µg/m3)				MERP (TPY)			
				PM2.5				PM2.5			
				24-Hour		Annual		24-Hour		Annual	
			(TPY)	NOX	SO2	NOX	SO2	NOX	SO2	NOX	SO2
Hypothetical Source [1]	EUS 8, PA-Adams	H	500	0.1	0.365	0.00986	0.009187	5,977	1,643	10,142	10,885
		L	500	0.043	0.103	0.002901	0.003041	13,992	5,845	34,469	32,884
		H	1000	0.086	0.202	0.00563	0.005921	14,035	5,937	35,951	33,779
		H	3000	0.256	0.56	0.015151	0.016419	14,044	6,428	39,602	36,544
	EUS 12, OH-Tuscarawas	L	500	0.085	0.254	0.005772	0.009209	7,053	2,366	17,325	10,859
		H	500	0.04	0.084	0.001761	0.004123	14,882	7,160	56,772	24,253
		H	1000	0.08	0.161	0.003426	0.008024	15,041	7,435	58,370	24,924
		H	3000	0.229	0.431	0.009748	0.022065	15,736	8,362	61,549	27,193

1. Information was retrieved from the MERPs View Qlik Database, https://www.epa.gov/scram/merps-view-qlik#Modeled_Impacts, accessed December 2019.

Determination Analysis

Analysis		Averaging Period	Precursor	Project Emissions	MERP	Project Emissions / MERP	Precursor Impact, Individual	Precursor Impact, Total
				(TPY)	(TPY)		(µg/m3)	(µg/m3)
Hypothetical Source:	PM2.5	24-Hour	NOX	975	15,041	0.065	0.078	0.1160
			SO2	227.8	7,160	0.032	0.038	
		Annual	NOX	861	58,370	0.015	0.003	0.00483
			SO2	228	24,253	0.009	0.002	

APPENDIX K OFF-PROPERTY SOURCES – EXHAUST PARAMETERS

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0001	Universal Refractor Wampum	DRYING OVEN STACKS (11)	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0002	Universal Refractor Wampum	MGO PROCESSING STACK	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0003	Universal Refractor Wampum	BULK BLENDING STACK	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0004	Universal Refractor Wampum	MISC. NAT. GAS USAGE STACK-NEW OVEN	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0005	Universal Refractor Wampum	MISC. NAT. GAS USAGE STACK-OLD OVEN	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0006	Universal Refractor Wampum	MISC. NAT. GAS USAGE FUGITIVES	555224.0	4526920.0	235.9	1.0	ambient	0.001	0.001
FILE0007	Universal Refractor Wampum	REFRACTORY FINISHING STACK	555224.0	4526920.0	235.9	12.2	422	12.997	0.610
FILE0008	Ellwood City Forge Ellwood City	BOILER STACK	559518.0	4523532.0	271.6	7.6	366	13.000	0.213
FILE0009	Ellwood City Forge Ellwood City	MISC N G USE FUGITIVE	559518.0	4523532.0	271.6	12.2	311	12.802	0.610
FILE0010	Ellwood City Forge Ellwood City	B PRESS FURNACES STK	559518.0	4523532.0	271.6	53.3	922	70.714	1.158
FILE0011	Ellwood City Forge Ellwood City	C PRESS FURNACE STACK	559518.0	4523532.0	271.6	25.3	422	2.441	0.792
FILE0012	Ellwood City Forge Ellwood City	B HEAT TREAT FURNACES STK	559518.0	4523532.0	271.6	11.6	478	5.169	0.914
FILE0013	Ellwood City Forge Ellwood City	B HEAT TREAT FURNACES STK	559518.0	4523532.0	271.6	11.6	1033	52.959	0.610
FILE0020	Ellwood City Forge Ellwood City	8 KW EMERGENCY GENERATOR	559518.0	4523532.0	271.6	1.0	310	0.001	0.001
FILE0021	Ellwood City Forge Ellwood City	FUGITIVE EMISSIONS - SOURCE ID: 620	559518.0	4523532.0	271.6	1.0	ambient	0.001	0.001
FILE0022	Ellwood City Forge Ellwood City	40 KW EMERGENCY DIESEL GENERATOR	559518.0	4523532.0	271.6	1.0	310	0.001	0.001
FILE0023	Ellwood City Forge Ellwood City	Source added from Permit, Emergency Generator	559518.0	4523532.0	271.6	1.0	ambient	0.001	0.001
FILE0024	Ellwood City Forge Ellwood City	Source added from Permit	559518.0	4523532.0	271.6	1.0	ambient	0.001	0.001
FILE0025	INMETCO Ellwood City	PELLET DISC BGHSE	560998.0	4523212.0	275.9	18.0	311	7.501	0.823
FILE0026	INMETCO Ellwood City	MISC PLANT PROCESSES USING NAT'L GAS	560998.0	4523212.0	275.9	12.2	311	12.802	0.610
FILE0027	INMETCO Ellwood City	INPLANT MATERIALS HANDLING BAGHOUSE STACK	560998.0	4523212.0	275.9	18.6	311	15.981	1.524

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0028	INMETCO Ellwood City	FROM ROTARY HEARTH FURNACE SCRUBBER	560998.0	4523212.0	275.9	21.0	330	19.340	1.006
FILE0029	INMETCO Ellwood City	EAF BAGHOUSE #1 STACK	560998.0	4523212.0	275.9	22.3	347	21.879	1.463
FILE0030	INMETCO Ellwood City	EAF BAGHOUSE #2 STACK	560998.0	4523212.0	275.9	21.9	403	11.000	3.048
FILE0031	INMETCO Ellwood City	COMFORT-HEATING UNITS (9) - MISC COMBUST UNITS	560998.0	4523212.0	275.9	12.2	311	12.802	0.610
FILE0032	INMETCO Ellwood City	CADMIUM RECOVERY BAGHOUSE STACK	560998.0	4523212.0	275.9	21.9	400	12.802	0.610
FILE0034	INMETCO Ellwood City	ROTARY THERMAL OXIDIZER FURNACE	560998.0	4523212.0	275.9	21.0	330	19.340	1.006
FILE0036	INMETCO Ellwood City	EMERGENCY DIESEL GENERATOR	560998.0	4523212.0	275.9	1.0	310	0.001	0.001
FILE0039	IPSCO Koppel Tubulars LLC / Ambridge	ROTARY HEARTH FURNACE STACK	565068.0	4495454.0	228.7	38.1	700	0.171	3.292
FILE0040	IPSCO Koppel Tubulars LLC / Ambridge	QUENCH FURNACE STACK	565068.0	4495454.0	228.7	16.5	755	0.040	1.219
FILE0042	IPSCO Koppel Tubulars LLC / Ambridge	TEMPER FURNACE	565068.0	4495454.0	228.7	16.5	755	0.040	1.219
FILE0043	IPSCO Koppel Tubulars LLC / Ambridge	REHEAT FURNACE	565068.0	4495454.0	228.7	16.5	919	0.040	1.219
FILE0049	IPSCO Koppel Tubulars LLC / Ambridge	Source added from Permit, Space Heaters	565068.0	4495454.0	228.7	16.5	755	4.289	1.219
FILE0050	IPSCO Koppel Tubulars LLC / Koppel PLT	TEST FORGE STACK	557468.0	4520732.0	269.9	1.0	311	0.001	0.001
FILE0051	IPSCO Koppel Tubulars LLC / Koppel PLT	#4 BAGHOUSE STACK (10 SNUB STACKS)	557468.0	4520732.0	269.9	30.5	339	17.432	3.048
FILE0053	IPSCO Koppel Tubulars LLC / Koppel PLT	VARIOUS HEATERS & FURNACES	557468.0	4520732.0	269.9	16.5	755	4.289	1.219
FILE0054	IPSCO Koppel Tubulars LLC / Koppel PLT	AUSTENTIZING FURNACE STACK	557468.0	4520732.0	269.9	16.5	755	3.100	1.219
FILE0055	IPSCO Koppel Tubulars LLC / Koppel PLT	TEMPER FURNACE STACK	557468.0	4520732.0	269.9	16.5	755	4.289	1.219
FILE0056	IPSCO Koppel Tubulars LLC / Koppel PLT	ACID ETCH BATH	557468.0	4520732.0	269.9	18.3	293	84.771	0.061
FILE0057	IPSCO Koppel Tubulars LLC / Koppel PLT	MELT SHOP LIME SILOS (2)	557468.0	4520732.0	269.9	18.3	293	84.771	0.061
FILE0058	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001
FILE0060	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit, Emergency Generator	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0061	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001
FILE0062	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permti, Small gas heaters	557468.0	4520732.0	269.9	16.5	366	4.289	0.610
FILE0063	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001
FILE0064	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit, Emergency Generator	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001
FILE0067	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit	557468.0	4520732.0	269.9	1.0	ambient	0.001	0.001
FILE0068	NALCO Co. North/South Plants	Source added from Permit	561165.0	4522487.0	265.7	1.0	ambient	0.001	0.001
FILE0071	NALCO Co. North/South Plants	NORTH PLANT BOILER ROOM STACKS (2)	561165.0	4522487.0	265.7	7.6	366	13.000	0.213
FILE0073	NALCO Co. North/South Plants	LINE 7: THERMAL OXIDIZER STACK	561165.0	4522487.0	265.7	1.0	366	0.001	0.001
FILE0075	NALCO Co. North/South Plants	LINE 7: THERMAL OXIDIZER STACK	561165.0	4522487.0	265.7	1.0	366	0.001	0.001
FILE0076	NALCO Co. North/South Plants	SOUTH PLANT BOILER ROOM STACKS	561169.0	4521433.0	268.5	7.6	366	13.000	0.213
FILE0078	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: FURNACE #1 BAGHOUSE STACK	561169.0	4521433.0	268.5	7.6	366	13.000	0.213
FILE0079	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: FURNACE #2 BAGHOUSE STACK	561169.0	4521433.0	268.5	7.6	366	13.000	0.213
FILE0080	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: SIZER BAGHOUSE STACK	561169.0	4521433.0	268.5	7.6	311	13.000	0.213
FILE0082	Lindy Paving Inc. / KoppelFAC	BAGHOUSE STACK	553473.0	4521245.0	366.1	12.2	436	20.117	1.219
FILE0083	Lindy Paving Inc. / KoppelFAC	RAP CRUSHER FUGITIVE EMISSIONS	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0084	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 1	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0085	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 2	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0086	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 3	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0087	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 4	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0091	Lindy Paving Inc. / KoppelFAC	FUGITIVES - ASPHALT CEMENT TANK HOT OIL HEATER	553473.0	4521245.0	366.1	1.0	ambient	0.001	0.001
FILE0094	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 1	558671.0	4518753.0	375.7	15.8	644	7.190	0.914

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0095	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 2	558671.0	4518753.0	375.7	15.8	644	7.190	0.914
FILE0096	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 3	558671.0	4518753.0	375.7	15.8	644	7.190	0.914
FILE0097	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE STACK - 4	558671.0	4518753.0	375.7	15.8	644	7.190	0.914
FILE0100	Dominion Trans Inc. / Beaver	AUXILIARY GENERATOR - STACK	558671.0	4518753.0	375.7	1.0	644	0.001	0.001
FILE0101	Dominion Trans Inc. / Beaver	Source added from Permit	558671.0	4518753.0	375.7	1.0	ambient	0.001	0.001
FILE0102	Dominion Trans Inc. / Beaver	BOILER UNIT 1 - STACK	558671.0	4518753.0	375.7	1.0	ambient	0.001	0.001
FILE0103	Dominion Trans Inc. / Beaver	BOILER UNIT 2 - STACK	558671.0	4518753.0	375.7	1.0	ambient	0.001	0.001
FILE0104	Dominion Trans Inc. / Beaver	HOT WATER HEATER - STACK	558671.0	4518753.0	375.7	1.0	ambient	0.001	0.001
FILE0105	Geopetro Patterson Compressor Station	CAT. G3508BLE STACK - 690 BHP COMPRESSOR ENGINE	549729.0	4526823.0	338.7	0.3	293	0.009	0.305
FILE0106	Geopetro Patterson Compressor Station	HEATERS/REBOILERS STACK	549729.0	4526823.0	338.7	0.3	293	0.009	0.305
FILE0113	New Castle Power	BABCOCK & WILCOX - BOILER 3	553209.0	4532062.0	244.5	228.6	422	46.680	5.822
FILE0114	New Castle Power	BABCOCK & WILCOX - BOILER 4	553209.0	4532062.0	244.5	228.6	422	46.680	5.822
FILE0115	New Castle Power	BABCOCK & WILCOX - BOILER 5	553209.0	4532062.0	244.5	228.6	422	46.680	5.822
FILE0116	New Castle Power	ELECTROMOTIVE DIESEL A	553209.0	4532062.0	244.5	5.8	670	30.800	1.067
FILE0122	New Castle Power	STACK FROM AUXILIARY BOILER	553209.0	4532062.0	244.5	16.5	478	5.240	0.549
FILE0123	New Castle Power	STACK FROM DIESEL GENERATORS (2)	553209.0	4532062.0	244.5	1.0	311	0.001	0.001
FILE0125	New Castle Power	NATURAL GAS PIPELINE HEATER STACK VENT	553209.0	4532062.0	244.5	5.8	478	5.240	0.549
FILE0126	Columbia Gas Trans Corp / Ellwood City	Source added from Permit, Boiler	562988.0	4520462.0	262.5	1.0	ambient	0.001	0.001
FILE0127	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/INTEGRAL COMPRESSOR (500HP)	562988.0	4520462.0	262.5	12.2	533	34.747	0.610
FILE0128	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/INTEGRAL COMPRESSOR (500HP)	562988.0	4520462.0	262.5	12.2	533	34.747	0.610
FILE0129	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/GENERATOR (125HP)	562988.0	4520462.0	262.5	1.0	366	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0132	Columbia Gas Trans Corp / Ellwood City	HEATERS/REBOILERS STACK	562988.0	4520462.0	262.5	0.3	293	0.009	0.305
FILE0139	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	FUGITIVES - NORMALIZER FURNACE 1	556288.0	4514679.0	281.3	1.0	ambient	0.001	0.001
FILE0140	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BOILER 1 STACK	556288.0	4514679.0	281.3	1.0	366	0.001	0.001
FILE0141	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BOILER 2 STACK	556288.0	4514679.0	281.3	1.0	366	0.001	0.001
FILE0142	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BAF FURNACE STACK	556288.0	4514679.0	281.3	1.0	366	0.001	0.001
FILE0143	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	FUGITIVES - NORMALIZER FURNACE 2	556288.0	4514679.0	281.3	1.0	ambient	0.001	0.001
FILE0144	The Sherwin Williams Co.	STACK	561878.0	4514962.0	359.6	1.0	344	0.001	0.001
FILE0146	The Sherwin Williams Co.	BOILER STACKS	561878.0	4514962.0	359.6	9.1	450	0.290	0.457
FILE0149	The Sherwin Williams Co.	EMERGENCY GENERATOR STACKS	561878.0	4514962.0	359.6	1.0	366	0.001	0.001
FILE0150	Ellwood Quality Steeld Co.	ELECTRIC ARC FURNACE	554606.0	4538045.0	236.6	23.5	339	25.500	2.743
FILE0151	Ellwood Quality Steeld Co.	ANNEALING FURNACES STACK	554606.0	4538045.0	236.6	30.5	325	14.679	2.438
FILE0152	Ellwood Quality Steeld Co.	LADLE PREHEATERS (2)	554606.0	4538045.0	236.6	1.5	548	0.001	0.001
FILE0153	Ellwood Quality Steeld Co.	BOILER STACKS (4)	554606.0	4538045.0	236.6	11.0	528	4.060	0.701
FILE0154	Ellwood Quality Steeld Co.	MISC HEATER UNITS (< 2.5 MMBTU/HR)	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0155	Ellwood Quality Steeld Co.	SCRAP TORCHING	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0156	Ellwood Quality Steeld Co.	GAS CUTTER	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0158	Ellwood Quality Steeld Co.	INGOT GRINDING	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0159	Ellwood Quality Steeld Co.	ELECTRIC LADLE FURNACE	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0162	Ellwood Quality Steeld Co.	MOLD GRINDING	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0164	Ellwood Quality Steeld Co.	EAF PRE-HEATER	554606.0	4538045.0	236.6	23.5	339	25.500	2.743
FILE0165	Ellwood Quality Steeld Co.	LIME SILO BIN VENT FILTER EXHAUST	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0166	Ellwood Quality Steeld Co.	BACKUP EMERGENCY DIESEL PUMP EXHAUST	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0167	Ellwood Quality Steeld Co.	Source added from Permit, Emergency Generator	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0168	Ellwood Quality Steeld Co.	Source added from Permit, Emergency Generator	554606.0	4538045.0	236.6	1.0	ambient	0.001	0.001
FILE0170	Ellwood Mill Prod Co.	INSIDE VENTED FURNACE STACKS	554922.0	4538219.0	239.7	1.0	ambient	0.001	0.001
FILE0172	Ellwood Mill Prod Co.	FORGE SHOP	554922.0	4538219.0	239.7	12.2	366	12.802	0.610
FILE0173	Ellwood Mill Prod Co.	RINGMILL MILLING MACHINE COLLECTOR STACK	554922.0	4538219.0	239.7	1.2	294	18.279	0.396
FILE0174	Ellwood Mill Prod Co.	KOEHLER EMERGENCY GENERATOR STACK	554922.0	4538219.0	239.7	0.3	778	48.561	0.061
FILE0175	Ellwood Mill Prod Co.	FURNACE 2538 STACK	554922.0	4538219.0	239.7	1.0	ambient	0.001	0.001
FILE0176	Ellwood Mill Prod Co.	RINGMILL MILLING MACHINE (4603)	554922.0	4538219.0	239.7	1.0	ambient	0.001	0.001
FILE0179	Ellwood Mill Prod Co.	Source added from Permit, Furnace	554922.0	4538219.0	239.7	1.0	ambient	0.001	0.001
FILE0180	BUCKEYE PIPELINE CORAOPOLIS	GARAGE BOILER-NATURAL GAS	569590.0	4486476.0	215.8	10.7	295	6.550	0.430
FILE0181	BUCKEYE PIPELINE CORAOPOLIS	CP Combustion Unit	569590.0	4486476.0	215.8	13.7	1272	21.081	0.203
FILE0218	BNZ MATERIALS INC/ZELIENOPLE	HOT WATER HEATER	571798.0	4516012.0	273.1	1.5	478	0.001	0.001
FILE0228	BNZ MATERIALS INC/ZELIENOPLE	#3 KILN	571798.0	4516012.0	273.1	1.5	464	0.001	0.001
FILE0229	BNZ MATERIALS INC/ZELIENOPLE	#3 KILN STACK #2	571798.0	4516012.0	273.1	10.1	464	6.471	0.305
FILE0243	BNZ MATERIALS INC/ZELIENOPLE	EMERGENCY LIGHTING GENERATOR	571798.0	4516012.0	273.1	1.0	ambient	0.001	0.001
FILE0244	BNZ MATERIALS INC/ZELIENOPLE	#4 KILN CONTROL PANEL EMERGENCY GENERATOR	571798.0	4516012.0	273.1	1.0	ambient	0.001	0.001
FILE0248	SENECA LANDFILL INC/SENECA	WASTEWATER TREATMENT PLANT STEAM BOILER	577711.0	4518290.0	295.4	0.9	505	0.001	0.001
FILE0256	SENECA LANDFILL INC/SENECA	335 KW LANDFILL GAS ENGINE/GENERATOR	577711.0	4518290.0	295.4	0.3	311	0.001	0.001
FILE0258	SENECA LANDFILL INC/SENECA	350 HP CATERPILLAR DIESEL ENGINE FOR EXTEC C12 STONE CRUSHER	577711.0	4518290.0	295.4	6.1	366	34.747	0.457
FILE0271	SENECA LANDFILL INC/SENECA	STACK	577711.0	4518290.0	295.4	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0273	SENECA LANDFILL INC/SENECA	STACK	577711.0	4518290.0	295.4	1.0	ambient	0.001	0.001
FILE0275	SENECA LANDFILL INC/SENECA	STACK	577711.0	4518290.0	295.4	1.0	ambient	0.001	0.001
FILE0277	SENECA LANDFILL INC/SENECA	STACK	577711.0	4518290.0	295.4	1.5	ambient	169.164	0.001
FILE0279	SENECA LANDFILL INC/SENECA	DIESEL TIPPER ENG. JOHN DEERE MODEL:JD6068HF286	577711.0	4518290.0	295.4	1.0	564	0.001	0.001
FILE0286	BASF CORP/MONACA PLT	THERMAL OXIDATION UNIT	555299.0	4501271.0	229.9	5.8	1255	0.001	0.001
FILE0294	BASF CORP/MONACA PLT	#1 CLEAVER BROOKS BOILER (31.83 MMBTU/HR)	555299.0	4501271.0	229.9	5.2	513	0.001	0.001
FILE0296	BASF CORP/MONACA PLT	#2 CLEAVER BROOKS BOILER (31.83 MMBTU/HR)	555299.0	4501271.0	229.9	5.2	513	0.001	0.001
FILE0298	BASF CORP/MONACA PLT	Firewater pump, 197 HP	555299.0	4501271.0	229.9	1.0	ambient	0.001	0.001
FILE0299	BASF CORP/MONACA PLT	Emergency Generator, 207 HP	555299.0	4501271.0	229.9	1.0	ambient	0.001	0.001
FILE0331	NOVA CHEM CO/BEAVER	BOILER 1 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0333	NOVA CHEM CO/BEAVER	BOILER 2 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0335	NOVA CHEM CO/BEAVER	BOILER 3 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0337	NOVA CHEM CO/BEAVER	BOILER 4 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0339	NOVA CHEM CO/BEAVER	BOILER 5 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0341	NOVA CHEM CO/BEAVER	BOILER 6 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0343	NOVA CHEM CO/BEAVER	BOILER 7 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0345	NOVA CHEM CO/BEAVER	BOILER 8 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0347	NOVA CHEM CO/BEAVER	BOILER 9 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0349	NOVA CHEM CO/BEAVER	BOILER 10 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0351	NOVA CHEM CO/BEAVER	BOILER 11 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001
FILE0353	NOVA CHEM CO/BEAVER	BOILER 12 STACK	554449.0	4500531.0	231.6	1.0	383	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0354	NOVA CHEM CO/BEAVER	BOILER 13 (11.67 MMBTU/HR)	554449.0	4500531.0	231.6	1.0	ambient	0.001	0.001
FILE0355	NOVA CHEM CO/BEAVER	BOILER 14 (11.67 MMBTU/HR)	554449.0	4500531.0	231.6	1.0	ambient	0.001	0.001
FILE0356	NOVA CHEM CO/BEAVER	BOILER 15 (11.67 MMBTU/HR)	554449.0	4500531.0	231.6	1.0	ambient	0.001	0.001
FILE0357	NOVA CHEM CO/BEAVER	BOILER 16 (11.67 MMBTU/HR)	554449.0	4500531.0	231.6	1.0	ambient	0.001	0.001
FILE0362	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	COATED-EXTRUSION BAKE OVEN	574998.0	4506211.0	315.2	1.0	447	0.001	0.001
FILE0368	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	1800 TON EXTRUSION PRESS & PREHEATERS	574998.0	4506211.0	315.2	1.0	476	0.001	0.001
FILE0370	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	EXTRUSION AGING OVENS (2)	574998.0	4506211.0	315.2	1.0	420	0.001	0.001
FILE0372	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	CAUSTIC ANODIZING TANK	574998.0	4506211.0	315.2	1.0	294	0.001	0.001
FILE0377	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	FACILITY SPACE HEATING (& HVAC SYSTEM)	574998.0	4506211.0	315.2	1.5	322	0.001	0.001
FILE0380	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	EXTRUSION PREHEATER STACK	574998.0	4506211.0	315.2	10.4	700	15.670	0.244
FILE0381	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	MISC NATURAL GAS USAGE	574998.0	4506211.0	315.2	1.8	322	0.001	0.001
FILE0393	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	Emergency Generator, 315 HP	574998.0	4506211.0	315.2	1.0	ambient	0.001	0.001
FILE0395	US GYPSUM CO/ALIQUIPPA	BOARD KILN/END SEAL STACK	564369.0	4497719.0	227.7	16.5	368	15.310	2.591
FILE0396	US GYPSUM CO/ALIQUIPPA	A KETTLE	564369.0	4497719.0	227.7	4.9	589	0.001	0.001
FILE0398	US GYPSUM CO/ALIQUIPPA	B KETTLE	564369.0	4497719.0	227.7	4.9	589	0.001	0.001
FILE0400	US GYPSUM CO/ALIQUIPPA	A DRYER MILL	564369.0	4497719.0	227.7	4.0	378	0.001	0.001
FILE0403	US GYPSUM CO/ALIQUIPPA	GAUGING WATER HEATER STACK	564369.0	4497719.0	227.7	7.6	589	15.968	0.274
FILE0412	US GYPSUM CO/ALIQUIPPA	B DRYER MILL	564369.0	4497719.0	227.7	4.0	378	0.001	0.001
FILE0430	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	DRAP LINE - BOILER # 1 (29.3 MMBTU/HR)	545579.0	4498791.0	234.8	1.0	ambient	0.001	0.001
FILE0432	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	DRAP LINE - BOILER # 2 (33.5 MMBTU/HR)	545579.0	4498791.0	234.8	1.0	ambient	0.001	0.001
FILE0438	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	TWO Linde Boilers (9.5 MMBtu/hr each)	545579.0	4498791.0	234.8	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
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FILE0439	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 1	579828.0	4545832.0	409.0	1.0	ambient	0.001	0.001
FILE0441	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 2	579828.0	4545832.0	409.0	1.0	ambient	0.001	0.001
FILE0443	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 4	579828.0	4545832.0	409.0	1.0	ambient	0.001	0.001
FILE0445	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	EMERGENCY ENGINES BUILT PRIOR TO 1/1/2009	579828.0	4545832.0	409.0	1.0	ambient	0.001	0.001
FILE0447	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 3	579828.0	4545832.0	409.0	1.0	ambient	0.001	0.001
FILE0458	AK STEEL CORP/BUTLER WORKS	BOILER 10 (MP)	589148.0	4520342.0	297.3	6.1	505	0.001	0.001
FILE0462	AK STEEL CORP/BUTLER WORKS	ELECTRIC ARC FURNACE 2	589148.0	4520342.0	297.3	0.3	370	0.001	0.001
FILE0479	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 5	589148.0	4520342.0	297.3	3.4	1066	0.001	0.001
FILE0481	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 6	589148.0	4520342.0	297.3	4.3	1066	0.001	0.001
FILE0483	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 7	589148.0	4520342.0	297.3	4.0	1080	0.001	0.001
FILE0503	AK STEEL CORP/BUTLER WORKS	AOD REACTOR	589148.0	4520342.0	297.3	1.5	394	0.001	0.001
FILE0505	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 8	589148.0	4520342.0	297.3	0.3	922	0.001	0.001
FILE0507	AK STEEL CORP/BUTLER WORKS	#2 CONTINUOUS CASTER	589148.0	4520342.0	297.3	3.0	322	0.001	0.001
FILE0509	AK STEEL CORP/BUTLER WORKS	#3 CONTINUOUS CASTER	589148.0	4520342.0	297.3	3.0	322	0.001	0.001
FILE0511	AK STEEL CORP/BUTLER WORKS	DECARB FURNACE 1	589148.0	4520342.0	297.3	0.9	294	0.001	0.001
FILE0513	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 1	589148.0	4520342.0	297.3	0.9	294	0.001	0.001
FILE0515	AK STEEL CORP/BUTLER WORKS	DECARB FURNACE 6	589148.0	4520342.0	297.3	0.9	294	0.001	0.001
FILE0517	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 6	589148.0	4520342.0	297.3	0.9	294	0.001	0.001
FILE0519	AK STEEL CORP/BUTLER WORKS	PREHEAT FURNACE 11	589148.0	4520342.0	297.3	0.9	366	0.001	0.001
FILE0521	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 11	589148.0	4520342.0	297.3	0.9	366	0.001	0.001
FILE0523	AK STEEL CORP/BUTLER WORKS	PREHEAT FURNACE 19	589148.0	4520342.0	297.3	0.9	366	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
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Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0525	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 19	589148.0	4520342.0	297.3	0.9	366	0.001	0.001
FILE0529	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER #1	589148.0	4520342.0	297.3	1.5	333	0.001	0.001
FILE0531	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 2	589148.0	4520342.0	297.3	1.5	333	0.001	0.001
FILE0533	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 3	589148.0	4520342.0	297.3	1.5	333	0.001	0.001
FILE0535	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 4	589148.0	4520342.0	297.3	1.5	333	0.001	0.001
FILE0537	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 5	589148.0	4520342.0	297.3	1.5	333	0.001	0.001
FILE0551	AK STEEL CORP/BUTLER WORKS	2.5 MMBTU/HR < SPACEHEATERS < 10 MMBTU/HR	589148.0	4520342.0	297.3	1.5	394	0.001	0.001
FILE0553	AK STEEL CORP/BUTLER WORKS	CRNO LINE ANNEAL FURNACE	589148.0	4520342.0	297.3	1.5	505	0.001	0.001
FILE0565	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 4	589148.0	4520342.0	297.3	1.5	422	0.001	0.001
FILE0567	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 7	589148.0	4520342.0	297.3	1.5	416	0.001	0.001
FILE0569	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 12	589148.0	4520342.0	297.3	1.5	1005	0.001	0.001
FILE0573	AK STEEL CORP/BUTLER WORKS	CARLITE LINE DRY FURNACE 20	589148.0	4520342.0	297.3	1.5	422	0.001	0.001
FILE0575	AK STEEL CORP/BUTLER WORKS	CARLITE LINE DRY FURNACE 26	589148.0	4520342.0	297.3	1.5	422	0.001	0.001
FILE0579	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 6	589148.0	4520342.0	297.3	1.5	311	0.001	0.001
FILE0585	AK STEEL CORP/BUTLER WORKS	MGO DRYING FURNACE	589148.0	4520342.0	297.3	1.5	422	0.001	0.001
FILE0589	AK STEEL CORP/BUTLER WORKS	BOILER 21 (HTP)	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0593	AK STEEL CORP/BUTLER WORKS	#7 LADLE DRYING STATION	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0595	AK STEEL CORP/BUTLER WORKS	SPACE HEATERS < 2.5 MMBTU	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0597	AK STEEL CORP/BUTLER WORKS	MISC. PROCESS HEATERS	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0599	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATORS (NATURAL GAS/PROPANE)	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0601	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATORS/PUMPS (DIESEL) <500 HP	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0613	AK STEEL CORP/BUTLER WORKS	MAIN PLANT BOILER #22	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0623	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 9	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0625	AK STEEL CORP/BUTLER WORKS	#3 BAGHOUSE STACK	589148.0	4520342.0	297.3	25.9	370	3.880	15.240
FILE0637	AK STEEL CORP/BUTLER WORKS	EMERGENCY DIESEL PUMP (340 HP)	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0641	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER #8	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0665	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATOR (DIESEL) >500 HP	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0667	AK STEEL CORP/BUTLER WORKS	BACKUP BOILER (HTP)	589148.0	4520342.0	297.3	1.0	ambient	0.001	0.001
FILE0669	GE TRANS GROVE CITY ENGINE	BOILER - 400 HP - 13.4 MILLION BTU/HR NAT. GAS	574821.0	4557829.0	390.0	1.5	411	0.001	0.001
FILE0687	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 3 STACK (OLD S04)	574821.0	4557829.0	390.0	22.9	563	18.011	0.762
FILE0688	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 1 STACK (OLD S02)	574821.0	4557829.0	390.0	22.9	563	10.659	1.006
FILE0689	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 2 STACK (OLD S03)	574821.0	4557829.0	390.0	22.9	563	18.011	0.762
FILE0690	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 4 STACK (OLD S05)	574821.0	4557829.0	390.0	22.9	575	14.640	1.006
FILE0691	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 5 STACK (OLD S06)	574821.0	4557829.0	390.0	22.9	390	26.700	1.006
FILE0692	GE TRANS GROVE CITY ENGINE	BOILER - 800 HP - 26.8 MILLION BTU/HR NAT. GAS	574821.0	4557829.0	390.0	0.3	505	0.001	0.001
FILE0694	GE TRANS GROVE CITY ENGINE	EMERGENCY DIESEL FIRE PUMP 185 HP	574821.0	4557829.0	390.0	1.0	ambient	0.001	0.001
FILE0696	GE TRANS GROVE CITY ENGINE	MISC NATURAL GAS FIRED SOURCES	574821.0	4557829.0	390.0	0.9	294	0.001	0.001
FILE0702	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 6	574821.0	4557829.0	390.0	22.9	563	18.011	0.762
FILE0705	GE TRANS GROVE CITY ENGINE	Emerg Fire Pump 185 HP	574821.0	4557829.0	390.0	1.0	ambient	0.001	0.001
FILE0706	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	CONTINUOUS WELD FURNACE	542449.0	4560512.0	255.8	0.6	811	0.001	0.001
FILE0710	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	#2 GALVANIZING KETTLE	542449.0	4560512.0	255.8	1.5	294	0.001	0.001
FILE0717	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	600HP BOILER	542449.0	4560512.0	255.8	1.5	322	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0719	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	400HP BOILER	542449.0	4560512.0	255.8	1.5	322	0.001	0.001
FILE0747	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	MISC HEATERS	542449.0	4560512.0	255.8	0.9	256	0.001	0.001
FILE0749	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	1000HP NAT. GAS FIRED BOILER	542449.0	4560512.0	255.8	6.1	366	0.001	0.001
FILE0763	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	NATURAL GAS FUELED EMERGENCY GENERATORS (2)	542449.0	4560512.0	255.8	1.0	ambient	0.001	0.001
FILE0769	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 1	541099.0	4562512.0	260.0	0.9	533	0.001	0.001
FILE0771	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 2	541099.0	4562512.0	260.0	0.9	533	0.001	0.001
FILE0785	NLMK PENNSYLVANIA LLC/FARRELL PLT	#21 ANNEAL FURNACES (10 FURNACES)	541099.0	4562512.0	260.0	1.0	ambient	0.001	0.001
FILE0791	NLMK PENNSYLVANIA LLC/FARRELL PLT	#22 ANNEAL FURNACES (12 FURNACES)	541099.0	4562512.0	260.0	1.0	ambient	0.001	0.001
FILE0797	NLMK PENNSYLVANIA LLC/FARRELL PLT	STEAM BOILERS (2)	541099.0	4562512.0	260.0	0.9	530	0.001	0.001
FILE0799	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 3	541099.0	4562512.0	260.0	1.0	ambient	0.001	0.001
FILE0840	JONES PERFORMANCE PR/WEST MIDDLESEX	CURING OVEN	546089.0	4565732.0	323.1	0.9	450	0.001	0.001
FILE0844	JONES PERFORMANCE PR/WEST MIDDLESEX	AIR MAKE-UP & OTHER MISC. HEATERS	546089.0	4565732.0	323.1	0.3	316	0.001	0.001
FILE0848	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	1-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0850	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	2-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0852	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	3-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0854	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	4-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0856	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	5-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0858	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	6-A	560798.0	4568712.0	397.2	8.2	603	45.101	0.335
FILE0860	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	7-A	560798.0	4568712.0	397.2	8.2	628	41.700	0.396
FILE0862	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	8-A	560798.0	4568712.0	397.2	8.5	628	41.700	0.396
FILE0864	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	9-A	560798.0	4568712.0	397.2	9.1	589	43.900	0.396

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0866	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	10-A	560798.0	4568712.0	397.2	9.1	628	43.900	0.396
FILE0868	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	11-A	560798.0	4568712.0	397.2	9.1	589	43.900	0.396
FILE0870	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	12-A	560798.0	4568712.0	397.2	9.1	589	43.900	0.396
FILE0872	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	13-A	560798.0	4568712.0	397.2	9.1	589	43.900	0.396
FILE0874	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	1-B	560798.0	4568712.0	397.2	7.9	569	32.098	0.884
FILE0876	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-1-A	560798.0	4568712.0	397.2	7.3	696	11.601	0.274
FILE0878	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-2-A	560798.0	4568712.0	397.2	7.3	696	11.601	0.274
FILE0880	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-3-A	560798.0	4568712.0	397.2	7.3	696	11.601	0.274
FILE0884	Hickory Run Energy Center	Combustion Turbine Stack 1	547917.8	4538356.3	301.2	22.8	453	5.666	1.673
FILE0885	Hickory Run Energy Center	Combustion Turbine Stack 2	547960.5	4538357.8	299.3	22.8	453	5.666	1.673
FILE0886	Hickory Run Energy Center	Auxiliary Boiler	547983.3	4538268.6	303.1	10.2	604	8.129	0.186
FILE0887	Hickory Run Energy Center	Emergency Generator	547973.1	4538268.6	303.6	1.9	673	12.143	0.091
FILE0888	Hickory Run Energy Center	Fire Water Pump	547698.5	4538415.0	313.9	1.9	696	5.401	0.091
FILE0889	Wampum Quarry	Facility Roadways	555026.8	4528652.0	305.0	1.0	ambient	0.001	0.001
FILE0890	Wampum Quarry	Dump Hopper	555000.1	4528619.0	298.5	1.0	ambient	0.001	0.001
FILE0891	Wampum Quarry	Apron Feeder	555000.1	4528619.0	298.5	1.0	ambient	0.001	0.001
FILE0892	Wampum Quarry	Wobbler Feeder	555000.1	4528619.0	298.5	1.0	ambient	0.001	0.001
FILE0893	Wampum Quarry	Impact Crusher	555000.1	4528619.0	298.5	6.1	297	0.001	0.713
FILE0894	Wampum Quarry	Impact Crusher	555000.1	4528619.0	298.5	1.0	ambient	0.001	0.001
FILE0895	Wampum Quarry	Conveyor System	555000.1	4528619.0	298.5	1.0	297	0.001	0.329
FILE0896	Wampum Quarry	Truck Loadout Silo	554864.6	4528455.7	239.1	17.4	297	0.001	0.329

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0897	Wampum Quarry	Truck Loading	554864.6	4528455.7	239.1	1.0	ambient	0.001	0.001
FILE0917	BAIRD BROTHERS SAWMILL INC	Boiler	515930.4	4540597.6	337.8	1.0	ambient	0.001	0.001
FILE0918	BAIRD BROTHERS SAWMILL INC	P001 & P002	515930.4	4540597.6	337.8	1.0	ambient	0.001	0.001
FILE0919	BAIRD BROTHERS SAWMILL INC	P003, P004, P005	515930.4	4540597.6	337.8	1.0	ambient	0.001	0.001
FILE0921	CARBON LIMESTONE LANDFILL GAS POWER STATION	Thermal Oxidizer	540362.6	4538622.9	358.8	1.0	ambient	0.001	0.001
FILE0922	CARBON LIMESTONE LANDFILL GAS POWER STATION	P020, P021 (0.6 g/hp-hr)	540362.6	4538622.9	358.8	1.0	ambient	0.001	0.001
FILE0923	CARBON LIMESTONE LANDFILL GAS POWER STATION	P001 - P014 (0.36 lbMMBtu)	540362.6	4538622.9	358.8	1.0	ambient	0.001	0.001
FILE0924	CARBON LIMESTONE LANDFILL GAS POWER STATION	P018, P019	540362.6	4538622.9	358.8	1.0	ambient	0.001	0.001
FILE0927	CARBON LIMESTONE SANITARY LANDFILL	Combustion Source	540270.8	4539371.7	341.0	1.0	ambient	0.001	0.001
FILE0932	EAST FAIRFIELD COAL COMPANY	Generator	540080.8	4530324.9	329.4	1.0	ambient	0.001	0.001
FILE0935	MAHONING LANDFILL, INC.	Flare	535165.0	4529756.3	345.6	1.0	ambient	0.001	0.001
FILE0936	MAHONING LANDFILL, INC.	P001-P005	535165.0	4529756.3	345.6	1.0	ambient	0.001	0.001
FILE0941	PIONEER SITE SERVICES, LLC.	Air Burner	528072.2	4531478.8	338.6	1.0	ambient	0.001	0.001
FILE0942	POLYAIR CORP.	Extruder	530695.4	4548434.7	258.8	1.0	ambient	0.001	0.001
FILE0947	STEEL CITY CORP.	Oven	524214.8	4550671.4	326.3	1.0	ambient	0.001	0.001
FILE0952	VALLOUREC STAR, LP	Caster	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0953	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0954	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0955	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0956	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0957	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (POINT SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
FILE0958	VALLOUREC STAR, LP	Furnace	526798.1	4552856.4	273.0	1.0	ambient	0.001	0.001
FILE0964	YOUNGSTOWN THERMAL	Boiler	528807.6	4550578.4	267.1	1.0	ambient	0.001	0.001
FILE0972	BRINKER COMPRESSOR STATION	Natural Gas Dehydrator	520510.0	4519342.9	390.1	1.0	ambient	0.001	0.001
FILE0974	ELJER PLUMBINGWARE, INC.	Peak Generator	512030.4	4526837.8	356.7	1.0	ambient	0.001	0.001
FILE0978	HERITAGE THERMAL SERVICES	Boiler	538346.2	4497947.3	213.6	1.0	ambient	0.001	0.001
FILE0979	HERITAGE THERMAL SERVICES	Incinerator	538346.2	4497947.3	213.6	1.0	ambient	0.001	0.001

OFFSITE INVENTORY - EXHAUST PARAMETERS (AREA SOURCES)
CEMEX
Wampum Cement Plant

Model ID	Facility Name	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Easterly Length (m)	Notherly Length (m)	Angle from North	Initial Vertical Dimension (m)
FILE0898	Wampum Quarry	Limestone Storage Pile	554983.4	4528639.1	300.4	0.9	95.0	100.0	320.0	
FILE0899	Wampum Quarry	Limestone Storage Pile	554983.4	4528639.1	300.4	0.9	95.0	100.0	320.0	

APPENDIX L OFF-PROPERTY SOURCES – MODELED EMISSIONS

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0001	Universal Refractor Wampum	DRYING OVEN STACKS (11)	0.4410	0.4410	0.0335	0.0335	0.0335	0.0335	0.0335			2.6460E-03
FILE0002	Universal Refractor Wampum	MGO PROCESSING STACK			0.5266	0.5266	0.5266	0.2821	0.2821			
FILE0003	Universal Refractor Wampum	BULK BLENDING STACK			0.2667	0.2667	0.2667	0.1429	0.1429			
FILE0004	Universal Refractor Wampum	MISC. NAT. GAS USAGE STACK-NEW OVEN	0.0708	0.0708	0.0054	0.0054	0.0054	0.0054	0.0054			4.2498E-04
FILE0005	Universal Refractor Wampum	MISC. NAT. GAS USAGE STACK-OLD OVEN	0.0708	0.0708	0.0054	0.0054	0.0054	0.0054	0.0054			4.2498E-04
FILE0006	Universal Refractor Wampum	MISC. NAT. GAS USAGE FUGITIVES	8.7229E-05	8.7229E-05	6.6294E-06	6.6294E-06	6.6294E-06	6.6294E-06	6.6294E-06			5.2338E-07
FILE0007	Universal Refractor Wampum	REFRACTORY FINISHING STACK			0.0736	0.0736	0.0736	0.0394	0.0394			
FILE0008	Ellwood City Forge Ellwood City	BOILER STACK	0.0778	0.0778	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	0.0059	4.6693E-04
FILE0009	Ellwood City Forge Ellwood City	MISC N G USE FUGITIVE	0.0126	0.0126	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	0.5040
FILE0010	Ellwood City Forge Ellwood City	B PRESS FURNACES STK	0.3059	0.3059	0.0468	0.0468	0.0468	0.0468	0.0468	0.0468	0.0468	2.1168E-03
FILE0011	Ellwood City Forge Ellwood City	C PRESS FURNACE STACK	0.2349	0.2349	0.0359	0.0359	0.0359	0.0359	0.0359	0.0359	0.0359	1.6254E-03
FILE0012	Ellwood City Forge Ellwood City	B HEAT TREAT FURNACES STK	0.4195	0.4195	0.0642	0.0642	0.0642	0.0642	0.0642	0.0642	0.0642	2.9030E-03
FILE0013	Ellwood City Forge Ellwood City	B HEAT TREAT FURNACES STK	0.7428	0.7428	0.1136	0.1136	0.1136	0.1136	0.1136	0.1136	0.1136	0.0051
FILE0020	Ellwood City Forge Ellwood City	8 KW EMERGENCY GENERATOR		2.1138E-03	1.6572E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	
FILE0021	Ellwood City Forge Ellwood City	FUGITIVE EMISSIONS - SOURCE ID: 620			4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	
FILE0022	Ellwood City Forge Ellwood City	40 KW EMERGENCY DIESEL GENERATOR		0.0148	1.6572E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	
FILE0023	Ellwood City Forge Ellwood City	Source added from Permit, Emergency Generator		0.0089	1.6572E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04	
FILE0024	Ellwood City Forge Ellwood City	Source added from Permit			4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	
FILE0025	INMETCO Ellwood City	PELLET DISC BGHSE			0.2784	0.2784	0.2784	0.1491	0.1491			
FILE0026	INMETCO Ellwood City	MISC PLANT PROCESSES USING NAT'L GAS	0.0570	0.0570	0.0780	0.0780	0.0780	0.0780	0.0780			1.1295
FILE0027	INMETCO Ellwood City	INPLANT MATERIALS HANDLING BAGHOUSE STACK			1.0115	1.0115	1.4383	0.5419	0.5419			
FILE0028	INMETCO Ellwood City	FROM ROTARY HEARTH FURNACE SCRUBBER	0.4241	2.8767	0.4851	0.4851	0.4851	0.4851	0.4851			0.3856
FILE0029	INMETCO Ellwood City	EAF BAGHOUSE #1 STACK	0.2772	4.1855	0.5911	0.5911	4.5164	0.5911	4.5164			0.2520
FILE0030	INMETCO Ellwood City	EAF BAGHOUSE #2 STACK	0.2772	4.1855	1.2369	1.2369	4.5164	1.2369	4.5164			0.2520

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0031	INMETCO Ellwood City	COMFORT-HEATING UNITS (9) - MISC COMBUST UNITS	0.0290	0.0290	0.1159	0.1159	0.1159	0.1159	0.1159			1.1592
FILE0032	INMETCO Ellwood City	CADMIUM RECOVERY BAGHOUSE STACK			0.2390	0.2390	0.2390	0.2390	0.2390			
FILE0034	INMETCO Ellwood City	ROTARY THERMAL OXIDIZER FURNACE	0.0567	0.0567	4.3091E-03	4.3091E-03	4.3091E-03	4.3091E-03	4.3091E-03			3.4019E-04
FILE0036	INMETCO Ellwood City	EMERGENCY DIESEL GENERATOR		0.0521	1.6572E-04	1.6572E-04	2.2702E-04	1.6572E-04	2.2702E-04			
FILE0039	IPSCO Koppel Tubulars LLC / Ambridge	ROTARY HEARTH FURNACE STACK	3.9702	3.8835								
FILE0040	IPSCO Koppel Tubulars LLC / Ambridge	QUENCH FURNACE STACK	0.4370	0.4370								
FILE0042	IPSCO Koppel Tubulars LLC / Ambridge	TEMPER FURNACE	0.4370	0.4370								
FILE0043	IPSCO Koppel Tubulars LLC / Ambridge	REHEAT FURNACE	0.4370	0.4370								
FILE0049	IPSCO Koppel Tubulars LLC / Ambridge	Source added from Permit, Space Heaters	0.5408	0.5408								
FILE0050	IPSCO Koppel Tubulars LLC / Koppel PLT	TEST FORGE STACK		0.1260	7.6949E-04	7.6949E-04	0.0185	7.6949E-04	0.0185	7.6949E-04	0.0185	
FILE0051	IPSCO Koppel Tubulars LLC / Koppel PLT	#4 BAGHOUSE STACK (10 SNUB STACKS)	7.5599	4.7321	0.6314	0.6314	0.6314	0.6314	0.6314	0.6314	0.6314	8.8198
FILE0053	IPSCO Koppel Tubulars LLC / Koppel PLT	VARIOUS HEATERS & FURNACES	0.3276	0.3276	0.0249	0.0249	0.0249	0.0249	0.0249	0.0249	0.0249	1.9656E-03
FILE0054	IPSCO Koppel Tubulars LLC / Koppel PLT	AUSTENTIZING FURNACE STACK	0.3780	0.3780	0.1166	0.1166	0.1166	0.1166	0.1166	0.1166	0.1166	1.6889
FILE0055	IPSCO Koppel Tubulars LLC / Koppel PLT	TEMPER FURNACE STACK	0.2142	0.2142	0.1612	0.1612	0.1612	0.1612	0.1612	0.1612	0.1612	2.3350
FILE0056	IPSCO Koppel Tubulars LLC / Koppel PLT	ACID ETCH BATH			0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	
FILE0057	IPSCO Koppel Tubulars LLC / Koppel PLT	MELT SHOP LIME SILOS (2)			0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	
FILE0058	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit			0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	
FILE0060	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit, Emergency Generator		0.0836	1.6200E-03	1.6200E-03	2.2191E-03	1.6200E-03	2.2191E-03	1.6200E-03	2.2191E-03	
FILE0061	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit			0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	
FILE0062	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permti, Small gas heaters	0.3276	0.3276	0.0249	0.0249	0.0249	0.0249	0.0249	0.0249	0.0249	1.9656E-03
FILE0063	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit			0.0778	0.0778	0.0778	0.0778	0.0778	0.0778	0.0778	
FILE0064	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit, Emergency Generator		0.0970	1.6200E-03	1.6200E-03	2.2191E-03	1.6200E-03	2.2191E-03	1.6200E-03	2.2191E-03	
FILE0067	IPSCO Koppel Tubulars LLC / Koppel PLT	Source added from Permit			0.0778	0.0778	0.0778	0.0778	0.0778	0.0778	0.0778	
FILE0068	NALCO Co. North/South Plants	Source added from Permit			0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	0.0205	

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0071	NALCO Co. North/South Plants	NORTH PLANT BOILER ROOM STACKS (2)	0.2433	0.2433	0.0185	0.0185	0.0185	0.0185	0.0185	0.0185	0.0185	1.4601E-03
FILE0073	NALCO Co. North/South Plants	LINE 7: THERMAL OXIDIZER STACK	0.0121	0.0121	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	7.2575E-05
FILE0075	NALCO Co. North/South Plants	LINE 7: THERMAL OXIDIZER STACK	0.0121	0.0121	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	9.1928E-04	7.2575E-05
FILE0076	NALCO Co. North/South Plants	SOUTH PLANT BOILER ROOM STACKS	0.1606	0.1606	0.0122	0.0122	0.0122	0.0122	0.0122	0.0122	0.0122	9.6351E-04
FILE0078	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: FURNACE #1 BAGHOUSE STACK	0.1235	0.1235	0.0779	0.0779	0.0779	0.0417	0.0417	0.0417	0.0417	7.4116E-04
FILE0079	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: FURNACE #2 BAGHOUSE STACK	0.1235	0.1235	0.0779	0.0779	0.0779	0.0417	0.0417	0.0417	0.0417	7.4116E-04
FILE0080	NALCO Co. North/South Plants	FURNACE ROOM PROCESS: SIZER BAGHOUSE STACK			0.2587	0.2587	0.2587	0.1386	0.1386	0.1386	0.1386	
FILE0082	Lindy Paving Inc. / KoppelFAC	BAGHOUSE STACK	3.7799	2.5593	1.3230	1.3230	0.8958	0.7087	0.7087	0.7087	0.7087	0.1714
FILE0083	Lindy Paving Inc. / KoppelFAC	RAP CRUSHER FUGITIVE EMISSIONS			0.1210	0.1210	0.0449	0.1210	0.0449	0.1210	0.0449	
FILE0084	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 1			0.0074	0.0074	2.7388E-03	0.0074	2.7388E-03	0.0074	2.7388E-03	
FILE0085	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 2			0.0074	0.0074	2.7388E-03	0.0074	2.7388E-03	0.0074	2.7388E-03	
FILE0086	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 3			0.0074	0.0074	2.7388E-03	0.0074	2.7388E-03	0.0074	2.7388E-03	
FILE0087	Lindy Paving Inc. / KoppelFAC	FUGITIVES - HOT MIX ASPHALT STORAGE SILO 4			0.0074	0.0074	2.7388E-03	0.0074	2.7388E-03	0.0074	2.7388E-03	
FILE0091	Lindy Paving Inc. / KoppelFAC	FUGITIVES - ASPHALT CEMENT TANK HOT OIL HEATER	0.0252	0.0252	1.9152E-03	1.9152E-03	1.9152E-03	1.9152E-03	1.9152E-03	1.9152E-03	1.9152E-03	1.5120E-04
FILE0094	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 1	1.7766	1.7778	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	2.8591
FILE0095	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 2	1.7766	1.7778	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	2.8591
FILE0096	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE - STACK 3	1.7766	1.7778	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	2.8591
FILE0097	Dominion Trans Inc. / Beaver	DRESSER RAND ENGINE STACK - 4	1.7766	1.7778	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	0.1974	2.8591
FILE0100	Dominion Trans Inc. / Beaver	AUXILIARY GENERATOR - STACK		0.0245	0.0082	0.0082	0.0113	0.0082	0.0113	0.0082	0.0113	
FILE0101	Dominion Trans Inc. / Beaver	Source added from Permit	0.1890	0.1899	2.8727E-03	2.8727E-03	2.8727E-03	2.8727E-03	2.8727E-03	2.8727E-03	2.8727E-03	2.2680E-04
FILE0102	Dominion Trans Inc. / Beaver	BOILER UNIT 1 - STACK	0.0378	0.0378	0.1512	0.1512	0.1512	0.1512	0.1512	0.1512	0.1512	0.3780
FILE0103	Dominion Trans Inc. / Beaver	BOILER UNIT 2 - STACK	0.0189	0.0189	1.4364E-03	1.4364E-03	1.4364E-03	1.4364E-03	1.4364E-03	1.4364E-03	1.4364E-03	1.1340E-04
FILE0104	Dominion Trans Inc. / Beaver	HOT WATER HEATER - STACK	5.0399E-04	5.0399E-04	3.8303E-05	3.8303E-05	3.8303E-05	3.8303E-05	3.8303E-05	3.8303E-05	3.8303E-05	3.0239E-06
FILE0105	Geopetro Patterson Compressor Station	CAT. G3508BLE STACK - 690 BHP COMPRESSOR ENGINE	0.0958	0.0958	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	0.0063	3.7082E-04

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0106	Geopetro Patterson Compressor Station	HEATERS/REBOILERS STACK	0.0126	0.0126	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	7.5599E-05
FILE0113	New Castle Power	BABCOCK & WILCOX - BOILER 3	12.9652	12.9652	0.9854	0.9854	0.9854	0.9854	0.9854	0.9854	0.9854	0.0778
FILE0114	New Castle Power	BABCOCK & WILCOX - BOILER 4	12.9652	12.9652	0.9854	0.9854	0.9854	0.9854	0.9854	0.9854	0.9854	0.0778
FILE0115	New Castle Power	BABCOCK & WILCOX - BOILER 5	19.7187	19.7187	1.4986	1.4986	1.4986	1.4986	1.4986	1.4986	1.4986	0.1183
FILE0116	New Castle Power	ELECTROMOTIVE DIESEL A	1.2398	0.0142	1.0434	1.0434	0.0119	1.0434	0.0119	1.0434	0.0119	2.6408
FILE0122	New Castle Power	STACK FROM AUXILIARY BOILER	0.1502	0.1502	0.4133	0.4133	0.4133	0.4133	0.4133	0.4133	0.4133	0.3199
FILE0123	New Castle Power	STACK FROM DIESEL GENERATORS (2)		0.0152	2.7604E-03	2.7604E-03	3.7814E-03	2.7604E-03	3.7814E-03	2.7604E-03	3.7814E-03	
FILE0125	New Castle Power	NATURAL GAS PIPELINE HEATER STACK VENT	0.0920	0.0920	0.3679	0.3679	0.3679	0.3679	0.3679	0.3679	0.3679	2.7594
FILE0126	Columbia Gas Trans Corp / Ellwood City	Source added from Permit, Boiler	0.0315	0.0315	2.3940E-03	2.3940E-03	2.3940E-03	2.3940E-03	2.3940E-03	2.3940E-03	2.3940E-03	1.8900E-04
FILE0127	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/INTEGRAL COMPRESSOR (500HP)	4.5611	1.3664	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	2.7783E-04
FILE0128	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/INTEGRAL COMPRESSOR (500HP)	4.5611	1.3664	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	4.7188E-03	2.7783E-04
FILE0129	Columbia Gas Trans Corp / Ellwood City	RECIP.ENGINE/GENERATOR (125HP)		0.0159	1.0190E-04	1.0190E-04	1.3959E-04	1.0190E-04	1.3959E-04	1.0190E-04	1.3959E-04	
FILE0132	Columbia Gas Trans Corp / Ellwood City	HEATERS/REBOILERS STACK	0.0126	0.0126	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	9.5758E-04	7.5599E-05
FILE0139	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	FUGITIVES - NORMALIZER FURNACE 1	0.2520	0.2520	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	6.2575E-04
FILE0140	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BOILER 1 STACK	0.1260	0.1260	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	7.5599E-04
FILE0141	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BOILER 2 STACK	0.1260	0.1260	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	0.0096	7.5599E-04
FILE0142	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	BAF FURNACE STACK	0.2520	0.2520	0.2668	0.2668	0.2668	0.2668	0.2668	0.2668	0.2668	3.8640
FILE0143	Beaver Falls Tubular ProdLLC/ Beaver Falls PLT	FUGITIVES - NORMALIZER FURNACE 2	0.2520	0.2520	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	4.3199E-05	6.2575E-04
FILE0144	The Sherwin Williams Co.	STACK			0.2333	0.2333	0.2333	0.2333	0.2333	0.2333	0.2333	
FILE0146	The Sherwin Williams Co.	BOILER STACKS	0.4637	0.4637	0.0352	0.0352	0.0352	0.0352	0.0352	0.0352	0.0352	4.6367
FILE0149	The Sherwin Williams Co.	EMERGENCY GENERATOR STACKS		0.3020	1.7820E-06	1.7820E-06	2.4411E-06	1.7820E-06	2.4411E-06	1.7820E-06	2.4411E-06	
FILE0150	Ellwood Quality Steeld Co.	ELECTRIC ARC FURNACE	0.9576	0.6472	1.4364	1.4364	0.9709	1.4364	0.9709	1.4364	0.9709	4.3091
FILE0151	Ellwood Quality Steeld Co.	ANNEALING FURNACES STACK	1.0808	1.0808	1.9993E-04	1.9993E-04	1.9993E-04	1.9993E-04	1.9993E-04	1.9993E-04	1.9993E-04	0.0092
FILE0152	Ellwood Quality Steeld Co.	LADLE PREHEATERS (2)	0.1386	0.1875	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	2.0806

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0153	Ellwood Quality Steeld Co.	BOILER STACKS (4)	0.2520	0.1595	0.0383	0.0383	0.0383	0.0383	0.0383	0.0383	0.0383	3.0239E-03
FILE0154	Ellwood Quality Steeld Co.	MISC HEATER UNITS (< 2.5 MMBTU/HR)	0.1310	0.1310	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	3.9311
FILE0155	Ellwood Quality Steeld Co.	SCRAP TORCHING	0.0126	0.0126	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	2.0806
FILE0156	Ellwood Quality Steeld Co.	GAS CUTTER	0.0126	0.0126	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	2.0806
FILE0158	Ellwood Quality Steeld Co.	INGOT GRINDING			0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	
FILE0159	Ellwood Quality Steeld Co.	ELECTRIC LADLE FURNACE			0.1915	0.1915	0.1294	0.1915	0.1294	0.1915	0.1294	
FILE0162	Ellwood Quality Steeld Co.	MOLD GRINDING			0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	0.1436	
FILE0164	Ellwood Quality Steeld Co.	EAF PRE-HEATER	0.0756	0.0603	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	0.0057	4.5359E-04
FILE0165	Ellwood Quality Steeld Co.	LIME SILO BIN VENT FILTER EXHAUST			4.1039E-05	4.1039E-05	4.1039E-05	4.1039E-05	4.1039E-05	4.1039E-05	4.1039E-05	
FILE0166	Ellwood Quality Steeld Co.	BACKUP EMERGENCY DIESEL PUMP EXHAUST		0.0174	1.1953E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	
FILE0167	Ellwood Quality Steeld Co.	Source added from Permit, Emergency Generator		0.0122	1.1953E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	
FILE0168	Ellwood Quality Steeld Co.	Source added from Permit, Emergency Generator		0.0159	1.1953E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	1.1953E-03	1.6374E-03	
FILE0170	Ellwood Mill Prod Co.	INSIDE VENTED FURNACE STACKS	0.1247	0.1247	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0068	0.0991
FILE0172	Ellwood Mill Prod Co.	FORGE SHOP	3.7686	3.7686	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	6.0698E-04
FILE0173	Ellwood Mill Prod Co.	RINGMILL MILLING MACHINE COLLECTOR STACK			0.2117	0.2117	0.2117	0.2117	0.2117	0.2117	0.2117	
FILE0174	Ellwood Mill Prod Co.	KOEHLER EMERGENCY GENERATOR STACK		0.1243	2.0777E-04	2.0777E-04	2.8462E-04	2.0777E-04	2.8462E-04	2.0777E-04	2.8462E-04	
FILE0175	Ellwood Mill Prod Co.	FURNACE 2538 STACK	0.1247	0.1247	4.2767E-05	4.2767E-05	4.2767E-05	4.2767E-05	4.2767E-05	4.2767E-05	4.2767E-05	6.1949E-04
FILE0176	Ellwood Mill Prod Co.	RINGMILL MILLING MACHINE (4603)			4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	4.1903E-05	
FILE0179	Ellwood Mill Prod Co.	Source added from Permit, Furnace	0.2419	0.2419	0.2668	0.2668	0.2668	0.2668	0.2668	0.2668	0.2668	3.8640
FILE0180	BUCKEYE PIPELINE CORAOPOLIS	GARAGE BOILER-NATURAL GAS	0.0081	0.0081								
FILE0181	BUCKEYE PIPELINE CORAOPOLIS	CP Combustion Unit	0.6012	0.6012								
FILE0218	BNZ MATERIALS INC/ZELIENOPLE	HOT WATER HEATER	0.0265	0.0265								
FILE0228	BNZ MATERIALS INC/ZELIENOPLE	#3 KILN	0.1286	0.1286								
FILE0229	BNZ MATERIALS INC/ZELIENOPLE	#3 KILN STACK #2	0.0882	0.0882								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0243	BNZ MATERIALS INC/ZELIENOPLE	EMERGENCY LIGHTING GENERATOR		2.2438E-04								
FILE0244	BNZ MATERIALS INC/ZELIENOPLE	#4 KILN CONTROL PANEL EMERGENCY GENERATOR		8.0547E-05								
FILE0248	SENECA LANDFILL INC/SENECA	WASTEWATER TREATMENT PLANT STEAM BOILER	0.0479	0.0479								
FILE0256	SENECA LANDFILL INC/SENECA	335 KW LANDFILL GAS ENGINE/GENERATOR	0.0315	0.0315								
FILE0258	SENECA LANDFILL INC/SENECA	350 HP CATERPILLAR DIESEL ENGINE FOR EXTEC C12 STONE CRUSHER	12.5998	0.1899								
FILE0271	SENECA LANDFILL INC/SENECA	STACK	1.7186	0.0791								
FILE0273	SENECA LANDFILL INC/SENECA	STACK	1.9051	0.8889								
FILE0275	SENECA LANDFILL INC/SENECA	STACK	1.3671	0.0552								
FILE0277	SENECA LANDFILL INC/SENECA	STACK	0.7031	0.0618								
FILE0279	SENECA LANDFILL INC/SENECA	DIESEL TIPPER ENG. JOHN DEERE MODEL:JD6068HF286	0.7031	0.0618								
FILE0286	BASF CORP/MONACA PLT	THERMAL OXIDATION UNIT	0.3886	0.3886								
FILE0294	BASF CORP/MONACA PLT	#1 CLEAVER BROOKS BOILER (31.83 MMBTU/HR)	0.1310	0.1268								
FILE0296	BASF CORP/MONACA PLT	#2 CLEAVER BROOKS BOILER (31.83 MMBTU/HR)	0.1310	0.1268								
FILE0298	BASF CORP/MONACA PLT	Firewater pump, 197 HP	0.1642	0.0094								
FILE0299	BASF CORP/MONACA PLT	Emergency Generator, 207 HP		0.0439								
FILE0331	NOVA CHEM CO/BEAVER	BOILER 1 STACK	0.1470	0.1470								
FILE0333	NOVA CHEM CO/BEAVER	BOILER 2 STACK	0.1470	0.1470								
FILE0335	NOVA CHEM CO/BEAVER	BOILER 3 STACK	0.1470	0.1470								
FILE0337	NOVA CHEM CO/BEAVER	BOILER 4 STACK	0.1470	0.1470								
FILE0339	NOVA CHEM CO/BEAVER	BOILER 5 STACK	0.1470	0.1470								
FILE0341	NOVA CHEM CO/BEAVER	BOILER 6 STACK	0.1470	0.1470								
FILE0343	NOVA CHEM CO/BEAVER	BOILER 7 STACK	0.1470	0.1470								
FILE0345	NOVA CHEM CO/BEAVER	BOILER 8 STACK	0.1470	0.1470								
FILE0347	NOVA CHEM CO/BEAVER	BOILER 9 STACK	0.1470	0.1470								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0349	NOVA CHEM CO/BEAVER	BOILER 10 STACK	0.1470	0.1470								
FILE0351	NOVA CHEM CO/BEAVER	BOILER 11 STACK	0.1470	0.1470								
FILE0353	NOVA CHEM CO/BEAVER	BOILER 12 STACK	0.1470	0.1470								
FILE0354	NOVA CHEM CO/BEAVER	BOILER 13 (11.67 MMBTU/HR)	0.1470	0.1470								
FILE0355	NOVA CHEM CO/BEAVER	BOILER 14 (11.67 MMBTU/HR)	0.1470	0.1470								
FILE0356	NOVA CHEM CO/BEAVER	BOILER 15 (11.67 MMBTU/HR)	0.1470	0.1470								
FILE0357	NOVA CHEM CO/BEAVER	BOILER 16 (11.67 MMBTU/HR)	0.1470	0.1470								
FILE0362	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	COATED-EXTRUSION BAKE OVEN	0.1096	0.1096								
FILE0368	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	1800 TON EXTRUSION PRESS & PREHEATERS	0.0655	0.0655								
FILE0370	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	EXTRUSION AGING OVENS (2)	0.0907	0.0907								
FILE0372	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	CAUSTIC ANODIZING TANK	0.0630	0.0630								
FILE0377	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	FACILITY SPACE HEATING (& HVAC SYSTEM)	0.9954	0.9954								
FILE0380	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	EXTRUSION PREHEATER STACK	0.0353	0.0353								
FILE0381	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	MISC NATURAL GAS USAGE	0.6300	0.6300								
FILE0393	KAWNEER COMMERCIAL WINDOWS LLC/CRANBERRY TWP	Emergency Generator, 315 HP		0.1899								
FILE0395	US GYPSUM CO/ALIQUIPPA	BOARD KILN/END SEAL STACK	0.9399	0.9395								
FILE0396	US GYPSUM CO/ALIQUIPPA	A KETTLE	0.5305	0.5307								
FILE0398	US GYPSUM CO/ALIQUIPPA	B KETTLE	0.5305	0.5307								
FILE0400	US GYPSUM CO/ALIQUIPPA	A DRYER MILL	0.2180	0.2181								
FILE0403	US GYPSUM CO/ALIQUIPPA	GAUGING WATER HEATER STACK	0.0630	0.0630								
FILE0412	US GYPSUM CO/ALIQUIPPA	B DRYER MILL	0.2180	0.2181								
FILE0430	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	DRAP LINE - BOILER # 1 (29.3 MMBTU/HR)	0.3692	0.3692								
FILE0432	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	DRAP LINE - BOILER # 2 (33.5 MMBTU/HR)	0.4221	0.4221								
FILE0438	ALLEGHENY & TSINGSHAN STAINLESS LLC MIDLAND FAC	TWO Linde Boilers (9.5 MMBtu/hr each)	0.2394	0.2394								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0439	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 1	0.4410	0.4410								
FILE0441	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 2	0.4410	0.4410								
FILE0443	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 4	0.0718	1.4815								
FILE0445	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	EMERGENCY ENGINES BUILT PRIOR TO 1/1/2009		0.0378								
FILE0447	PA STATE SYS OF HIGHER ED/SLIPPERY ROCK UNIV PA	BOILER 3	0.1235	0.1234								
FILE0458	AK STEEL CORP/BUTLER WORKS	BOILER 10 (MP)	0.5292	0.5292								
FILE0462	AK STEEL CORP/BUTLER WORKS	ELECTRIC ARC FURNACE 2	0.5753	0.5753								
FILE0479	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 5	2.8979E-03	2.8979E-03								
FILE0481	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 6	2.6460E-03	2.6460E-03								
FILE0483	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 7	2.6460E-03	2.6460E-03								
FILE0503	AK STEEL CORP/BUTLER WORKS	AOD REACTOR	0.5753	0.5753								
FILE0505	AK STEEL CORP/BUTLER WORKS	SLAB HEATING FURNACE 8	2.6460	2.6460								
FILE0507	AK STEEL CORP/BUTLER WORKS	#2 CONTINUOUS CASTER	0.1008	0.1008								
FILE0509	AK STEEL CORP/BUTLER WORKS	#3 CONTINUOUS CASTER	0.1008	0.1008								
FILE0511	AK STEEL CORP/BUTLER WORKS	DECARB FURNACE 1	0.1890	0.1890								
FILE0513	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 1	0.1386	0.1386								
FILE0515	AK STEEL CORP/BUTLER WORKS	DECARB FURNACE 6	0.1638	0.1638								
FILE0517	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 6	0.1254	0.1254								
FILE0519	AK STEEL CORP/BUTLER WORKS	PREHEAT FURNACE 11	0.0838	0.0838								
FILE0521	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 11	0.0794	0.0794								
FILE0523	AK STEEL CORP/BUTLER WORKS	PREHEAT FURNACE 19	0.1134	0.1134								
FILE0525	AK STEEL CORP/BUTLER WORKS	SILICON DRYING FURNACE 19	0.1638	0.1638								
FILE0529	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER #1	0.1260	0.1260								
FILE0531	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 2	0.1260	0.1260								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0533	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 3	0.1260	0.1260								
FILE0535	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 4	0.1260	0.1260								
FILE0537	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 5	0.1512	0.1512								
FILE0551	AK STEEL CORP/BUTLER WORKS	2.5 MMBTU/HR < SPACEHEATERS < 10 MMBTU/HR	0.2520	0.2520								
FILE0553	AK STEEL CORP/BUTLER WORKS	CRNO LINE ANNEAL FURNACE	0.3906	0.3906								
FILE0565	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 4	0.6174	0.6174								
FILE0567	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 7	0.4158	0.4158								
FILE0569	AK STEEL CORP/BUTLER WORKS	ANNEAL FURNACE 12	2.4948	2.4948								
FILE0573	AK STEEL CORP/BUTLER WORKS	CARLITE LINE DRY FURNACE 20	0.1134	0.1134								
FILE0575	AK STEEL CORP/BUTLER WORKS	CARLITE LINE DRY FURNACE 26	0.3377	0.3377								
FILE0579	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 6	0.1260	0.1260								
FILE0585	AK STEEL CORP/BUTLER WORKS	MGO DRYING FURNACE	0.2142	0.2142								
FILE0589	AK STEEL CORP/BUTLER WORKS	BOILER 21 (HTP)	0.1449	0.1449								
FILE0593	AK STEEL CORP/BUTLER WORKS	#7 LADLE DRYING STATION	0.1247	0.1247								
FILE0595	AK STEEL CORP/BUTLER WORKS	SPACE HEATERS < 2.5 MMBTU	0.0315	0.0315								
FILE0597	AK STEEL CORP/BUTLER WORKS	MISC. PROCESS HEATERS	1.0307	1.0307								
FILE0599	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATORS (NATURAL GAS/PROPANE)	0.1890	0.1890								
FILE0601	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATORS/PUMPS (DIESEL) <500 HP	0.9765	0.0557								
FILE0613	AK STEEL CORP/BUTLER WORKS	MAIN PLANT BOILER #22	2.7216E-04	2.7216E-04								
FILE0623	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER # 9	0.2066	0.2066								
FILE0625	AK STEEL CORP/BUTLER WORKS	#3 BAGHOUSE STACK	10.3200	10.3200								
FILE0637	AK STEEL CORP/BUTLER WORKS	EMERGENCY DIESEL PUMP (340 HP)		0.0159								
FILE0641	AK STEEL CORP/BUTLER WORKS	LADLE PREHEATER/DRYER #8	0.1008	0.1008								
FILE0665	AK STEEL CORP/BUTLER WORKS	STANDBY GENERATOR (DIESEL) >500 HP	1.9656	0.1122								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0667	AK STEEL CORP/BUTLER WORKS	BACKUP BOILER (HTP)	0.1256	0.1256								
FILE0669	GE TRANS GROVE CITY ENGINE	BOILER - 400 HP - 13.4 MILLION BTU/HR NAT. GAS	0.1688	0.1628								
FILE0687	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 3 STACK (OLD S04)	0.6398	12.5135								
FILE0688	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 1 STACK (OLD S02)	0.6398	11.8806								
FILE0689	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 2 STACK (OLD S03)	0.6398	11.8806								
FILE0690	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 4 STACK (OLD S05)	0.7736	12.9522								
FILE0691	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 5 STACK (OLD S06)	0.9576	1.0609								
FILE0692	GE TRANS GROVE CITY ENGINE	BOILER - 800 HP - 26.8 MILLION BTU/HR NAT. GAS	0.3377									
FILE0694	GE TRANS GROVE CITY ENGINE	EMERGENCY DIESEL FIRE PUMP 185 HP		0.0403								
FILE0696	GE TRANS GROVE CITY ENGINE	MISC NATURAL GAS FIRED SOURCES	1.2600	1.2600								
FILE0702	GE TRANS GROVE CITY ENGINE	DIESEL ENGINE TEST CELL 6	18.6250	0.2598								
FILE0705	GE TRANS GROVE CITY ENGINE	Emerg Fire Pump 185 HP		0.0403								
FILE0706	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	CONTINUOUS WELD FURNACE	1.2600	1.3572								
FILE0710	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	#2 GALVANIZING KETTLE	0.5002	0.5008								
FILE0717	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	600HP BOILER	0.3175	0.3175								
FILE0719	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	400HP BOILER	0.2117	0.2117								
FILE0747	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	MISC HEATERS	0.3309	0.3309								
FILE0749	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	1000HP NAT. GAS FIRED BOILER	0.5292	0.5292								
FILE0763	WHEATLAND TUBE CO DI/WHEATLAND TUBE DIV	NATURAL GAS FUELED EMERGENCY GENERATORS (2)		0.1899								
FILE0769	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 1	3.5783	3.5783								
FILE0771	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 2	3.5783	3.5783								
FILE0785	NLMK PENNSYLVANIA LLC/FARRELL PLT	#21 ANNEAL FURNACES (10 FURNACES)	0.2948	0.2948								
FILE0791	NLMK PENNSYLVANIA LLC/FARRELL PLT	#22 ANNEAL FURNACES (12 FURNACES)	0.4717	0.4717								
FILE0797	NLMK PENNSYLVANIA LLC/FARRELL PLT	STEAM BOILERS (2)	0.4221	0.4221								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0799	NLMK PENNSYLVANIA LLC/FARRELL PLT	SLAB REHEAT FURNACE 3	0.3982	0.3982								
FILE0840	JONES PERFORMANCE PR/WEST MIDDLESEX	CURING OVEN	0.0378	0.0378								
FILE0844	JONES PERFORMANCE PR/WEST MIDDLESEX	AIR MAKE-UP & OTHER MISC. HEATERS	0.1386	0.1386								
FILE0848	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	1-A	2.8475	2.8393								
FILE0850	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	2-A	2.8475	2.8393								
FILE0852	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	3-A	2.8475	2.8393								
FILE0854	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	4-A	2.8475	2.8393								
FILE0856	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	5-A	2.8475	2.8393								
FILE0858	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	6-A	2.8475	2.8393								
FILE0860	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	7-A	1.4994	1.4987								
FILE0862	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	8-A	1.4994	1.4987								
FILE0864	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	9-A	3.3011	3.2967								
FILE0866	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	10-A	3.3011	3.2967								
FILE0868	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	11-A	3.3011	3.2967								
FILE0870	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	12-A	3.3011	3.2967								
FILE0872	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	13-A	3.3011	3.2967								
FILE0874	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	1-B	4.5863	4.5825								
FILE0876	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-1-A	0.1109	0.1109								
FILE0878	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-2-A	0.1109	0.1109								
FILE0880	TENNESSEE GAS PIPELINE CO LLC/MERCER STA 219	A-3-A	0.1109	0.1109								
FILE0884	Hickory Run Energy Center	Combustion Turbine Stack 1	3.6773	3.6773								
FILE0885	Hickory Run Energy Center	Combustion Turbine Stack 2	3.6773	3.6773								
FILE0886	Hickory Run Energy Center	Auxiliary Boiler	0.0550	0.0550								
FILE0887	Hickory Run Energy Center	Emergency Generator		0.0150								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0888	Hickory Run Energy Center	Fire Water Pump	3.9971E-03	3.9971E-03								
FILE0889	Wampum Quarry	Facility Roadways			0.0164	0.0164	0.0155	1.6380E-03	1.4383E-03	1.6380E-03	1.4383E-03	
FILE0890	Wampum Quarry	Dump Hopper			3.9311E-04	3.9311E-04	3.9311E-04	5.9529E-05	5.9529E-05	5.9529E-05	5.9529E-05	
FILE0891	Wampum Quarry	Apron Feeder			0.0090	0.0090	0.0090	1.3642E-03	1.3642E-03	1.3642E-03	1.3642E-03	
FILE0892	Wampum Quarry	Wobbler Feeder			0.0180	0.0180	0.0180	2.7284E-03	2.7284E-03	2.7284E-03	2.7284E-03	
FILE0893	Wampum Quarry	Impact Crusher			7.4843E-04	7.4843E-04	7.4843E-04	2.2667E-04	2.2667E-04	2.2667E-04	2.2667E-04	
FILE0894	Wampum Quarry	Impact Crusher			1.6632E-03	1.6632E-03	1.6632E-03	2.5185E-04	2.5185E-04	2.5185E-04	2.5185E-04	
FILE0895	Wampum Quarry	Conveyor System			4.5044E-04	4.5044E-04	4.5044E-04	1.3642E-04	1.3642E-04	1.3642E-04	1.3642E-04	
FILE0896	Wampum Quarry	Truck Loadout Silo			4.5044E-04	4.5044E-04	4.5044E-04	1.3642E-04	1.3642E-04	1.3642E-04	1.3642E-04	
FILE0897	Wampum Quarry	Truck Loading			2.4570E-03	2.4570E-03	2.4570E-03	3.7205E-04	3.7205E-04	3.7205E-04	3.7205E-04	
FILE0898	Wampum Quarry	Limestone Storage Pile			0.2532	0.2532	0.0127	0.0383	1.9159E-03	0.0383	1.9159E-03	
FILE0899	Wampum Quarry	Limestone Storage Pile			2.9609E-03	2.9609E-03	2.9658E-03	4.5359E-04	4.4876E-04	4.5359E-04	4.4876E-04	
FILE0917	BAIRD BROTHERS SAWMILL INC	Boiler	1.0130	1.0126								
FILE0918	BAIRD BROTHERS SAWMILL INC	P001 & P002	0.2659	0.2664								
FILE0919	BAIRD BROTHERS SAWMILL INC	P003, P004, P005	0.5330	0.5328								
FILE0921	CARBON LIMESTONE LANDFILL GAS POWER STATION	Thermal Oxidizer	0.0907	0.0906								
FILE0922	CARBON LIMESTONE LANDFILL GAS POWER STATION	P020, P021 (0.6 g/hp-hr)	0.3722	0.3717								
FILE0923	CARBON LIMESTONE LANDFILL GAS POWER STATION	P001 - P014 (0.36 lbMMBtu)	0.6174	0.6185								
FILE0924	CARBON LIMESTONE LANDFILL GAS POWER STATION	P018, P019	0.6174	0.6185								
FILE0927	CARBON LIMESTONE SANITARY LANDFILL	Combustion Source	1.3419	1.3420								
FILE0932	EAST FAIRFIELD COAL COMPANY	Generator	4.8635	2.6638								
FILE0935	MAHONING LANDFILL, INC.	Flare	1.1335	1.1335								
FILE0936	MAHONING LANDFILL, INC.	P001-P005	0.4624	0.4620								
FILE0941	PIONEER SITE SERVICES, LLC.	Air Burner	0.0756	0.0184								

OFFSITE INVENTORY - MODELED EMISSIONS
CEMEX
Wampum Cement Plant

			NO_2		PM_{10}			$PM_{2.5}$				SO_2
			NO2	99NO2	PM10	24PM10	99PM10	PM25	PM2.5	24PM25	99PM25	SO2
			NQS	NQS/Inc.	NQS	INC.	INC.	NQS	NQS	INC.	INC.	NQS
Model ID	Facility Name	Source Description	1-hr (g/s)	Annual (g/s)	24-hr (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	24-hr (g/s)	Annual (g/s)	1-hr (g/s)
FILE0942	POLYAIR CORP.	Extruder		0.0245								
FILE0947	STEEL CITY CORP.	Oven	0.0970	0.0969								
FILE0952	VALLOUREC STAR, LP	Caster	1.0836	1.0068								
FILE0953	VALLOUREC STAR, LP	Furnace	3.6539	2.5689								
FILE0954	VALLOUREC STAR, LP	Furnace	2.0462	1.1150								
FILE0955	VALLOUREC STAR, LP	Furnace	0.8870	0.4695								
FILE0956	VALLOUREC STAR, LP	Furnace	0.4826	0.2583								
FILE0957	VALLOUREC STAR, LP	Furnace	0.3604	0.1996								
FILE0958	VALLOUREC STAR, LP	Furnace	8.6686	8.0547								
FILE0964	YOUNGSTOWN THERMAL	Boiler	3.5594	3.5594								
FILE0972	BRINKER COMPRESSOR STATION	Natural Gas Dehydrator	0.0365	0.0365								
FILE0974	ELJER PLUMBINGWARE, INC.	Peak Generator	2.3058	0.6329								
FILE0978	HERITAGE THERMAL SERVICES	Boiler	0.3893	0.3889								
FILE0979	HERITAGE THERMAL SERVICES	Incinerator	3.5733	3.5737								

APPENDIX M ELECTRONIC FILES

Electronic files available upon request.

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