

TECHNICAL REVIEW AND EVALUATION

OF

AIR QUALITY PERMIT # 49442

CEMEX Construction Materials South, LLC

I. INTRODUCTION

This air quality control renewal permit is for the operation of a concrete batch plant (CBP) with or without a collocated crushing and screening (C&S) plant. This is a portable facility and will be operated statewide. This is a renewal of Air Quality Permit No. 27241.

Company Information

1. Mailing Address: CEMEX Construction Materials South, LLC
4646 E. Van Buren St., Ste. 250
Phoenix, AZ 85008
2. Facility Address: CEMEX—Country Arizona Portable #1
Highway 377 Mile Post 17
Snowflake, AZ 85937

II. FACILITY DESCRIPTION

A. Process Description

Concrete is composed essentially of water, cement, sand (fine aggregate), and coarse aggregate. Coarse aggregate may consist of gravel or crushed stone. Concrete batching plants store, convey, measure, and discharge these constituents into trucks for transport to a job site.

The aggregate material is delivered by front-end loader or conveyor to the concrete batch plant. The cement is transferred to elevated storage silos pneumatically. The sand and coarse aggregate are transferred to elevated bins by front-end loader and belt conveyor. From these elevated bins, the constituents are fed by gravity or conveyor to weigh hoppers, which combine the proper amount of each material. Sand, aggregate, cement, and water are all gravity fed from the weigh hopper into mixer trucks. The concrete is mixed on the way to the site where the concrete is to be poured.

B. Air Pollution Control Equipment

Particulate matter (PM₁₀), consisting primarily of cement dust but including some aggregate and sand dust emissions, is the primary pollutant of concern from the cement plant. Most of the emission points are fugitive in nature. The point sources are the transfer of cement to the silo and the truck load-out loading, both of which are usually vented to a fabric filter or “sock” system located in a bin vent or bag house. The generator and the water heater are also point sources, but neither requires any external air pollution control equipment. Fugitive sources include the transfer of sand and aggregate, mixer loading, vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions generated during the transfer of sand and aggregate depends primarily on the surface moisture content of these materials.

Types of controls used may include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, and the like. The movement of heavy trucks over unpaved or dusty surfaces in and around the plant is controlled by good maintenance, wetting of the road surface with water or the use of dust suppressants.

III. LEARNING SITES IN VICINITY

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

The Department did not identify any learning sites within a two mile radius of the Country Arizona Portable #1 concrete batch plant of CEMEX Construction Materials South, LLC, located at Highway 377 Mile Post 17, Snowflake, Navajo County, AZ 85937.

IV. COMPLIANCE HISTORY

There were two facility inspections for this facility since February 1, 2006. No Air Quality cases or violations were developed for this facility regarding the above mentioned inspections.

V. POTENTIAL-TO-EMIT AND SYNTHETIC MINOR LIMITATIONS

A. Statewide Operation (outside Maricopa County)

The facility has the equipment capacity to produce 240 cubic yards per hour of concrete and crushed material. The facility may also have a crushing and screening plant capable of emitting 13.64 tons per year of PM₁₀ which it may collocate on site periodically. The Permittee must limit the simultaneous operation of diesel fueled generators to 662 horsepower between the concrete batch plant and the collocated crushing and screening plant.

B. Operating in Maricopa County

The facility has a potential to emit 434.96 pounds per day and 79.38 tons per year of PM. However, the source has voluntarily accepted hourly limitations to stay within the Maricopa County BACT threshold. The facility has voluntarily accepted hourly limitations of 9 hours per day and 3,088 hours per year. The facility has also accepted the voluntarily restriction not to collocate with a crushing & screening facility while operating within Maricopa County.

Pollutant	Inside Maricopa County Emissions (tpy)	Outside Maricopa County Emissions (tpy)
PM ₁₀	6.44	79.38*
PM	19.03	55.38
SO ₂	3.28	11.02
NO _x	22.50	90.00
VOC	1.79	7.17
CO	4.92	19.58

*The outside Maricopa County PM₁₀ Emissions include 13.64 tons/yr emissions from the collocated Crushing/Screening Plant

VI. APPLICABLE REGULATIONS

The Permittee has identified the applicable regulations that apply to each unit in its permit application. The following table summarizes the findings of the Department with respect to the regulations that are applicable to each emissions unit. Previous permit conditions are discussed under Section VII of this technical review document.

Applicable Regulations

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Concrete Batch Plant	2008	Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.	<u>A.A.C.</u> R18-2-604.A R18-2-604.B R18-2-605.A R18-2-605.B R18-2-606 R18-2-607.A R18-2-607.B R18-2-614 R18-2-702.B R18-2-723	Standards of performance for concrete batch plants and Fugitive dust sources.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Concrete Batch Plant	1986	Emissions from silos are controlled by baghouses. Fugitive sources controlled by water spray and other reasonable precautions.	<u>Maricopa County Rule (M.C.R.)</u> Rule 300 Rule 316 Rule 320	Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity. Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant. Maricopa County Rule 320-Odors and Gaseous Air Contaminants establish limits for the emissions of odors and other gaseous air contaminants into the atmosphere.
			<u>Pima County Code</u> §§17.16.040 §§17.16.050 §§17.16.380	Standards and applicability for opacity limitations. Standards of performance for concrete batch plants.
			<u>Pinal Code</u> §5-5	Stationary source performance standards-Gravel or crushed stone processing plant and concrete batch plants.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Water Heater	N/A	N/A	<p><u>A.A.C.</u> R18-2-724</p>	<p>Standards of performance for fossil-fuel fired industrial and commercial equipment. This section is applicable to equipment which is less than 250 MMBtu and greater than 0.5 MMBtu.</p>
			<p><u>M.C.R.</u> Rule 323 §103.8</p>	<p>The water heater is not subject to Maricopa County Rule 323 because its sole purpose is to heat water for radiant heat, an exemption from applicability.</p>
			<p><u>Pima County Code</u> §§17.16.165.C.1 §§17.16.165.E §§17.16.165.G §§17.16.165.J</p>	<p>The water heater is subject to Pima County Codes §§17.16.165C.1, E, G and J. They were however streamlined because A.A.C. R18-2-724 regulations are just as stringent.</p>
			<p><u>Pinal Code</u> §5-21-930</p>	<p>The water heater is subject to Pinal County Code §5.21.930. They were however streamlined because A.A.C. R18-2-724 regulations are just as stringent.</p>

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Generator	2002	N/A	<p><u>A.A.C.</u> R18-2-719.B R18-2-719.C.1 R18-2-719.E R18-2-719.F R18-2-719.H R18-2-719.I R18-2-719.J</p>	<p>Standards of Performance for existing stationary rotating machinery. This section is applicable to internal combustion engines.</p> <p>The generator is not subject to any NSPS regulations. It is not subject to 40 CFR 60 Subpart JJJJ because it is a diesel fuel engine and this subpart is applicable to spark ignition internal combustion engines. It is not subject to 40 CFR 60 Subpart IIII because it was manufactured prior to April 1, 2006. It is subject to 40 CFR 60 Subpart ZZZZ, however the only requirement is to meet the requirements of Subparts IIII & JJJJ. Since, thee engine is not subject to either of these regulations, by default it is not subject to Subpart ZZZZ either.</p>
			<p><u>M.C.R.</u> Rule 324</p>	<p>Maricopa County Rule 324- Establishes limits for the emissions of carbon monoxide, nitrogen oxides, sulfur oxides, volatile organic compounds, and particulate matter from stationary internal combustion engines, including stationary IC engines used in cogeneration.</p>
			<p><u>Pima County Code</u> §§17.16.340</p>	<p>The facility is also subject to Pima County Code §§17.16.340 but the regulations were streamlined because Article 7 of the A.A.C. is just as stringent.</p>

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Generator	2002	N/A	<u>Pinal Code</u> §5-23-990	The facility is also subject to Pinal County Code §5.23.990 but the regulations were streamlined because Article 7 of the A.A.C. is just as stringent.
Fugitive Dust Sources	N/A	Water and other reasonable precautions	<u>A.A.C.</u> R18-2-702 Article 6	These standards are applicable to all fugitive dust sources.
			<u>M.C.R.</u> Rule 300	Maricopa County Rule 300-Visible Emissions describe standards for visible emissions and opacity.
			Rule 316	Maricopa County Rule 316-Nonmetallic Mineral Processing establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operating or rock product processing plant.
			<u>Pima County Code</u> §§17.16.060	Fugitive dust producing activities.
			§§17.16.080 §§17.16.090 §§17.16.100	Vacant lots and open spaces. Roads and Streets Particulate material
			<u>Pinal Code</u> §4-2	Emissions from existing new non-point sources-Fugitive dust.
Mobile Sources	N/A	Water Sprays/Water Truck for dust control	<u>A.A.C.</u> Article 8	This Article is applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Mobile Sources	N/A	Water Sprays/Water Truck for dust control	<u>M.C.R.</u> Rule 200§410	Maricopa County Rule 200§410 was included in the Mobile Sources Section covering Article 8 to streamline the document since the conditions are identical.
			<u>Pima County Code</u> §§17.12.300	The facility is also subject to Pima County Code §§17.12.300 but the regulations were streamlined because Article 8 of the A.A.C. is just as stringent.
Spray Painting Operations	N/A	N/A	<u>A.A.C.</u> R18-2-727	This standard is applicable to any spray-painting operation.
			<u>M.C.R.</u> Rule 315	Maricopa County Rule 315 establishes a limit for the emission of particulate matter to the atmosphere from spray coating operations.
Demolition/ Renovation Operations	N/A	N/A	<u>A.A.C.</u> R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Abrasive Blasting	N/A	N/A	<u>A.A.C.</u> R18-2-726 R18-2-702.B	This standard is applicable to any activity related to abrasive blasting operations.
			<u>M.C.R.</u> Rule 312§410	Maricopa County Rule 312§410 establishes limits for particulate emissions from abrasive blasting operations.
			<u>Pinal Code</u> §5-4-140	The facility is also subject to Pinal County Code §5.4.140 but the regulations were streamlined because A.A.C. R18-2-726 and A.A.C R18-2-702.B are just as stringent.

VII. PREVIOUS PERMIT CONDITIONS

A. Previous Permits

The following table lists the previous permits that have been issued to CEMEX Construction Materials South, LLC.

Previous Permits

Date Permit Issued	Permit #	Application Basis
December 26, 2003	27241	Operating Permit
December 2, 2008	48729	Administrative Amendment

B. Previous Permit Conditions

The following are discussions on the previous permits that have been issued to the source.

CLASS II, NON-TITLE V OPERATING PERMIT NO. 27241

This operating permit was issued to CEMEX Construction Materials South, LLC on December 26, 2003, to operate a concrete batch plant with or without a collocated crushing and screening plant.

OP #27241, References	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. A.	X				General provisions - revised to represent most recent language
Att.B.I.A		X			Facility Wide Limitations-Operating Limitations
Att B.I.B		X			Facility Wide Limitations-Record Keeping Requirements
Att B.I.C		X			Facility Wide Limitations-Reporting Requirements
Att B.II.A	X				Concrete Batch Plant-Emission Standards-revised to represent most recent language. Meets requirement A.A.C. R18-2-614 for nonpoint sources and A.A.C. R18-2-702.B for any point sources.
Att B.II.B		X			Concrete Batch Plant-Air Pollution Control Requirements-revised to represent most recent language. Meets material permit conditions as defined by A.A.C. R18-2-306.A.2 and - 331.A.3.d.

OP #27241, References	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att B.II.C		X			Concrete Batch Plant-Monitoring Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c.
Att B.II.D		X			Concrete Batch Plant-Record Keeping Requirement-revised to represent most recent language. Meets requirement A.A.C. R18-2-306.A.3.c
Att B.III		X			Conditions Specific to Mobile Sources-Section and language is retained.
Att B.IV		X			Conditions Specific to Portable Sources-Section and language are retained.
Att C		X			Conditions for Operation Inside Pima County-revised to represent most recent language in the Pima County Code.
Att D		X			Conditions for Operation Inside Pinal County-revised to represent most recent language in the Pinal County Code.
Att E		X			Conditions for Operation Inside Maricopa County- revised to represent most recent language in the Maricopa County Rule.
Att F	X				Equipment List-the equipment list has been updated.

CLASS II, NON-TITLE V ADMINISTRATIVE AMENDMENT NO. 48729

On September 26, 2008, United Metro Materials, Inc., the owner of permit no. 27241 requested that ADEQ change the name on all of their permits to CEMEX Construction Materials South, LLC. The administrative amendment (name change) was issued on December 2, 2008. The new permit reflects the current name.

VIII. MONITORING REQUIREMENTS

A. Opacity

1. The Permittee is required to conduct a monthly survey of visible emissions coming from the concrete batch plant equipment at the facility. If the opacity of the emissions observed appears to exceed the opacity limit, the observer must conduct a certified EPA Reference Method 9 observation. The Permittee must keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation result is above the opacity limit, the Permittee is required to take corrective action and log all their actions. Any exceedance must be reported to ADEQ as an "excess emission".
2. The Permittee is required to perform a quarterly EPA Reference Method 9 observation of emissions coming from the concrete batch plant. The Permittee must keep a record the

results of the observation. If the observation result is above the opacity limit, the Permittee must take corrective action and log all such actions they took to fix the problem. Any exceedance must be reported to ADEQ as an “excess emission”.

3. The Permittee must maintain records of the dates when reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne are performed and which of the eight approved control measures were implemented.
4. The Permittee must conduct a monthly survey of visible emissions coming from the stack of the water heater. If the opacity of the emissions observed appears to exceed the opacity limit, the observer must perform a certified EPA Reference Method 9 observation. The Permittee is required to keep records of the initial survey and any EPA Reference Method 9 observations performed. If the observation result is above the opacity limit, the Permittee must take corrective action and log all such actions. Any exceedance must be reported to ADEQ as an “excess emission”.

B. Sulfur Dioxide

The Permittee must keep records of fuel supplier certifications. The certification must contain the information with regard to sulfur content and the method used to determine the sulfur content of fuel. These records must be made available to the ADEQ inspector upon request.

IX. LIST OF ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CO	Carbon Monoxide
ft	Feet
hr	Hour
lb	Pound
MCR	Maricopa County Rule
NO _x	Nitrogen Oxide
P.C.C.	Pima County Code
PM	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
PTE	Potential-to-Emit
SO ₂	Sulfur Dioxide
TPY	Tons per Year
VOC	Volatile Organic Compound
yr	Year