

**TECHNICAL REVIEW AND EVALUATION OF APPLICATION FOR  
MCNEIL BROTHERS, INC,  
AIR QUALITY PERMIT NO. 64153**

**I. INTRODUCTION**

This Class II air quality control permit is for the statewide operation of a portable concrete batch plant (CBP) owned and operated by McNeil Brothers, Inc. The permit supersedes Air Quality Permit #53421. The facility is currently out of state.

**Company Information**

Facility Name: Erie Strayer I Concrete Batch Plant  
Facility Address: Presently out of State  
Mailing Address: 6681 W. Allison Rd, Ste 5045, Chandler, AZ 85226

**II. FACILITY DESCRIPTION**

**A. Process Description**

Raw materials comprising of sand, aggregate #57, and aggregate #4 are delivered to the plant by truck and dropped into a hopper, which loads the material onto a stacker, which then piles it into a storage pile. The cement and cement supplement (fly ash) are delivered to the site via truck and pneumatic transfer methods are used to deliver the material to a storage silo, which contains 2 parts cement to 1 part fly ash. The sand and aggregate are taken from the storage piles via a front end loader and transferred to elevated storage bins. From there, these are transferred to a weigh hopper and mixed with the cement and fly ash. From the hopper, the materials are transferred into a rotating mixer, which also has water transferred into it. The mixer then makes the finished product of concrete.

**B. Emissions and Controls**

Particulate matter is the primary pollutant of concern. Point sources include one baghouse that controls emissions from the loading/ unloading operations of the cement/ flyash silo. Fugitive emissions occur during transfer of sand and aggregate, vehicle traffic, and wind erosion from sand and aggregate storage piles. Fugitive emissions are controlled using water sprays, enclosures, chutes, and water trucks.

The emissions calculations for the permit review process used emission factors from the U.S. EPA's Compilation of Air Pollution Emission Factors, fifth ed. (AP 42). The PTE was calculated using 450 cubic yards of concrete produced per hour and 16 hours of operation per day. Table 1 lists the PTE from the facility:

**Table 1: Potential to Emit (Excluding Fugitives)**

PTE	PM	PM <sub>10</sub>	PM <sub>2.5</sub>
Tons/ year	14.77	7.17	1.12

**III. AMBIENT DISPERSION MODELING**

McNeil Brothers conducted an AERMOD modeling analysis based on a protocol approved by the ADEQ to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). The modeling is a computer simulation that predicts air quality concentrations at selected downwind receptor locations. Although the plant is portable within the State of Arizona, McNeil Brothers selected a site within Maricopa County for the purpose of air quality modeling. Because ambient PM<sub>10</sub> concentrations within Maricopa County are among the highest reported in the state, demonstrating NAAQS compliance within Maricopa County would infer NAAQS compliance for the plant throughout the state of Arizona. The plant will be limited to 7,200 cubic yards per day of concrete production in the renewal permit. Table 2 provides a summary of the modeling results:

**Table 2: Modeling Results**

Concentration	Modeled Concentration	Background Concentration	Total Concentration	National Ambient Air Quality Standard for PM <sub>2.5</sub>
PM <sub>2.5</sub> 24-Hour Maximum	4.93 µg/m <sup>3</sup>	14.78 µg/m <sup>3</sup>	19.71 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
PM <sub>2.5</sub> Annual Maximum	2.07 µg/m <sup>3</sup>	6.93 µg/m <sup>3</sup>	9.00 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
PM <sub>10</sub> 24-Hour Maximum	37.68 µg/m <sup>3</sup>	99.53 µg/m <sup>3</sup>	137.21 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>

**IV. COMPLIANCE HISTORY**

There was no inspection of the facility during the term of existing operation permit #53421. The compliance reports submitted by the facility were in compliance with the terms of the permit.

**V. APPLICABLE REGULATIONS**

Table 3 summarizes the applicable regulations identified by the agency after review of the application.

**Table 3: Applicable Regulations**

Unit ID	Control Equipment	Applicable Regulations	Verification
<b>Concrete Batch Plant</b>	Particulate matter emissions from the silo are controlled by a baghouse.	<u>A.A.C.</u> R18-2-604, 605, 606, 607, 608, 614 702.B.3, and 723	Standards of performance for concrete batch plants and fugitive dust sources.
	Fugitive emissions are controlled by water spray and other reasonable precautions.	<u>Maricopa County Rule (M.C.R.)</u> Rule 300, 316, and 320	Standards for visible emissions and opacity. Limits for particulate matter emissions from any nonmetallic mining operating or rock product processing plant. Limits for odors and other gaseous air contaminants.
		<u>Pima County Code</u> SIP Rule 343 §§17.16.040 and 16.380	Standards and applicability for opacity limitations. Standards of performance for concrete batch plants.
		<u>Pinal County Code</u> §4-2-040 §4-2-050	Stationary source performance standards for gravel or crushed stone processing plant and concrete batch plants.
<b>Fugitive Dust Sources</b>	Water & other reasonable precautions	<u>A.A.C.</u> Article 6	Standards for all fugitive dust sources.
		<u>M.C.R.</u> Rule 300 and 316	Visible Emissions standards. Limits for particulate matter emissions from rock product processing plant.
		<u>Pima County Code</u> §§17.16.060, 080, 090, and 100	Fugitive dust producing activities. Vacant lots and open spaces. Roads and Streets Material Handling
		<u>Pinal County Code</u> §4-2	Emissions from existing non-point sources-fugitive dust control.
<b>Mobile Sources</b>	Water Sprays/Water Truck for dust control	<u>A.A.C.</u> Article 8	Standards for off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.
		<u>M.C.R.</u> Rule 200§410	County mobile source requirements.
		<u>Pima County Code</u> §§17.12.300	The facility is subject to Pima County Code §§17.12.300 but the regulations were streamlined because A.A.C. Article 8 is

Unit ID	Control Equipment	Applicable Regulations	Verification
			equivalent.
Spray Painting Operations	N/A	<u>A.A.C.</u> R18-2-727	Standards for spray-painting operation.
		<u>M.C.R.</u> Rule 315	Limits for particulate matter emissions from spray coating operations.
Demolition/Renovation Operations	N/A	<u>A.A.C.</u> R18-2-1101.A.8	Standard for asbestos related demolition or renovation operations.
Abrasive Blasting	N/A	<u>A.A.C.</u> R18-2-702.B.3 and 726	Standard for abrasive blasting operations.
		<u>M.C.R.</u> Rule 312§410	Limits for particulate emissions from abrasive blasting operations.
		<u>Pinal County Code</u> §5-4-140	The facility is subject to Pinal County Code §5.4.140 but regulations were streamlined because A.A.C. R18-2-726 and A.A.C R18-2-702.B are equivalent.

**VI. PREVIOUS PERMIT AND CONDITIONS**

**A. Previous Permits**

Table 4 lists the previous permit issued to McNeil Brothers, Inc.

**Table 4: Previous Permits**

Permit No.	Permit Type	Date Issued
53421	Operating Permit	September 22, 2011

**B. Previous Permit Conditions**

Table 5 provides a discussion on the conditions of the previous permit issued to the source.

**Table 5: Operating Permit #53421**

Condition #	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. "A"	x				General Provisions - Revised to represent most recent permit language
Attachment "B"					
I.A.1		x			Condition for operating and maintaining equipment

Condition #	Determination				Comments
	Revise	Keep	Delete	Stream-line	
I.A.2	x				Condition for production limitation revised
I.A.3	x				Facility wide requirements revised by adding the camera method for opacity check.
II	x				Conditions for Concrete Batch Plant
III	x				Conditions for Fugitive Dust Requirements
IV	x				Conditions specific to Portable Sources
V	x				Conditions for Mobile Sources
VI	x				Conditions for Other Periodic Activities
Attachment "C"	x				Most recent applicable rules from Maricopa County
Attachment "D"	x				Most recent applicable rules from Pima County
Attachment "E"	x				Most recent applicable rules from Pinal County
Attachment "F"	x				Equipment List updated as per the application.

**VII. MONITORING AND RECORDKEEPING REQUIREMENTS**

**A. Concrete Batch Plant**

1. The Permittee is required to maintain records of concrete produced per day.
2. The Permittee is required to show compliance with the opacity standards in the concrete batch plant section of the permit by having a Method 9 certified observer perform a monthly survey of visible emissions. The observer is required to conduct a six minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard. The observations are required on a weekly basis when operating in Maricopa County.

**B. Fugitive Emissions**

1. The Permittee is required to keep record of the dates on which any of the dust control measures contained in the fugitive dust section of the permit are employed.
2. The Permittee is required to show compliance with the opacity standards in the fugitive dust section of the permit by having a Method 9 certified observer perform a monthly survey of visible emission from fugitive dust sources. The observer is required to conduct a six minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard.

3. The Permittee is required to keep records of the name of the observer, the time, date, and location of the observation and the results of all surveys and observations.
4. The Permittee is required to keep records of any corrective action taken to lower the opacity of any emission point and any excess emission reports.
5. When operating in Maricopa County, the Permittee is required to create, submit and follow a dust control plan which contains all the necessary elements of Maricopa County Rule 316.

**C. Mobile Sources**

The Permittee is required to keep records of all emission related maintenance performed on the mobile sources.

**D. Periodic Activities**

1. The Permittee is required to record the date, duration and pollution control measures of any abrasive blasting project.
2. The Permittee is required to record the date, duration, and quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.
3. The Permittee is required to maintain records of all asbestos related demolition or renovation projects. The required records include the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.

**VIII. LIST OF ABBREVIATIONS**

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CBP	Concrete Batch Plant
CO	Carbon Monoxide
EPA	Environmental Protection Agency
M.C.R.	Maricopa County Rule
NO <sub>x</sub>	Nitrogen Oxide
P.C.C.	Pima County Code
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter less than 10 Micrometers
PM <sub>2.5</sub>	Particulate Matter less than 2.5 Micrometers
PTE	Potential-to-Emit
SO <sub>2</sub>	Sulfur Dioxide
TPY	Tons per Year
VOC	Volatile Organic Compound
µg/m <sup>3</sup>	Micrograms per cubic meter