

**CPC SouthWest Materials, Inc.
Air Quality Permit # 1002**

**Technical Support Document
January, 2008**

I. General Comments:

A. Company Information

1. CPC SouthWest Materials, Inc.
2. 6601 N Casa Grande Hwy, Tucson, AZ 85743

B. Background

This permit is issued to CPC SouthWest Materials, Inc., for the facility located at 6601 North Casa Grande Highway, Tucson Arizona. The source previously operated under the name Tucson Ready Mix, Inc.

During review of the 2005 permit renewal, it was discovered that the source would be subject to NSPS Subpart OOO - Nonmetallic Mineral Processing; this regulation continues to be applicable to the facility primarily because the wet plant is supported by a 375tph Vertical Shaft Impactor (VSI) crusher.

C. Attainment Classification

This source is located in a region that is in attainment for all criteria pollutants.

II. Source Description

CPC SouthWest Materials, Inc., is a large facility with operations of various SIC Codes, some of which do not constitute support facilities of another. This permit covers two concrete batch plants, a wash plant, and generators. The generators (specifically limited to 4000 hours of operation at 1340 hp aggregate) provide power to the plants in the event of loss of commercial power. The wash plant is subject to NSPS Subpart OOO. The NSPS affected equipment is not enclosed nor are the emissions captured or routed through a stack.

A. Process Description

The process is a standard concrete and aggregate wash plant operation. Aggregate is washed free of clay and dust particles. The aggregate is mixed with concrete, flyash and water then loaded into trucks. The concrete and flyash are produced off-site and pneumatically loaded into silos whose emissions are controlled by baghouses.

B. Air Pollution Control Equipment

Baghouses control emissions from silos; spray-bars control dust elsewhere along the process. The Baghouses are required by a synthetic minor limitation because the potential to emit of PM-10 from the silos without controls would exceed major source levels.

III. Regulatory History

A. Testing & Inspections

CPC SouthWest Materials has had regular inspections. The source is currently in compliance.

B. Excess Emissions

On November 16, 2001 the source submitted an excess emissions report. The excess emissions occurred on November 15, 2001 when the boot blew off the cement discharge auger. Approximately 150 pounds of cement dust was released.

IV. Emissions Estimates

Potential to emit calculations for the facility have been prepared using AP-42 emissions factors 3.3-1 & 3.4-1 for the generator and 11.12-7 & ADEQ Annual Air Emission Inventory Questionnaire for Facilities Operating a Concrete Batch Plant (see Potential to Emit Document).

Pollutant	Un-controlled Tons per Year	Controlled Tons per Year
Nitrogen Oxides (NO _x)	181.9	83.1
Carbon Monoxide (CO)	39.2	17.9
Volatile Organic Compounds (VOC)	14.5	6.6
Particulate Matter (as PM ₁₀)	578.5	24.9
Sulfur Oxides (SO _x)	42.7	19.5
Hazardous Air Pollutants (HAPs)	<1	<1

V. Applicable Requirements

40 CFR 60 Subpart OOO – Non-Metallic Mineral Processing Plants

17.16.050	Visibility Limiting Standard
17.16.060	Fugitive Dust Producing Activities
17.16.080	Vacant lots and open spaces
17.16.090	Roads and streets
17.16.100	Particulate Materials
17.16.110	Storage Piles
17.16.130	Applicability
17.16.340	Standards of performance for stationary rotating machinery
17.16.370	Standards of performance for gravel or crushed stone processing plants
17.16.380	Standards of performance for concrete batch plants

VI. Permit Contents - Part B

A. Applicability:

Diesel-fired stationary rotating machinery; concrete batch plants, and wash plant.

B. Emission Limits & Standards:

NSPS Affected Facilities: Wash Plant, VSI Crusher

II.A.1: NSPS Opacity and Visible emissions standards for applicable equipment.

II.A.2: NSPS requirement to operate source in a manner consistent with good modern air pollution control practices.

Non-NSPS Affected Facilities:

Concrete Batch Plant

II.B.1: Requirement to operate baghouses according to manufacture's recommendations and specifications.

Diesel Fired Stationary Rotating Equipment

II.B.2.a: Operational Hour Limitation*

II.B.2.b: Operational Horsepower Limitation*

II.B.2.c: Opacity Standard

II.B.2.d: Fuel Limitation

* The operational hour and operational horsepower limitations effectively represent the PTE stated in the permit. The controlled PTE values are calculated by multiplying the two limitation values by the appropriate emission factor, including a standard conversion. This allows the Permittee to operate various size units at the facility ≤ 1340 hp. Note: the higher emission factor is taken into consideration for units > 600 hp and < 600 hp and their respective emission rates per AP-42.

Facility-Wide Operations (Including Concrete Batch and Wash Plants)

II.C.1-6: Standard requirements for crushed stone/rock processing, concrete batch plants and diesel fired stationary rotating machinery:

C. Monitoring Requirements:

Wash Plant

III.A.1: Daily checks of fugitive emissions from the VSI crusher.

III.A.2: Daily opacity checks of transfer points.

III.A.3: Daily emissions check from wet screening operations, subsequent screening operations, bucket elevators and belt conveyors that process saturated material.

Concrete Batch Plants

III.B.1: Dust Control Check: Weekly air pollution control compliance checks on batch plant conveyors, stockpiles and haul roads.

Diesel-Fired Stationary Rotating Machinery

III.B.2.a: Demonstration to show compliance with the operational hour limitation.

III.B.2.b: Demonstration to show compliance with the operational horsepower limitation.

III.B.2.c: Visible emissions check at least once during each quarter when the units are firing.

III.B.2.d: Fuel Limitation.

Facility-Wide Operations

III.C.1: Weekly fugitive emissions check from all non-point sources.

III.C.2: Daily opacity check from emission points.

III.C.3: Daily fugitive dust emissions check.

D. Recordkeeping Requirements:

Wash Plant

IV.A.1: Recordkeeping of all opacity/visibility limitation monitoring observations.

IV.A.2: Excess emission and permit deviation recordkeeping when necessary.

Concrete Batch Plants

IV.B.1: Recordkeeping of weekly baghouse examinations.

Diesel-Fired Stationary Rotating Machinery

IV.B.2.a&b Recordkeeping requirement to demonstrate compliance with operational hour/horsepower and opacity restriction.

IV.B.2.c: Recordkeeping requirement to demonstrate compliance with fuel limitation.

Facility-Wide Operations

IV.D.1: Recordkeeping of daily opacity checks by certified EPA Method 9 observer.

IV.D.2: Retention of all records relating to the air quality permit.

E. Reporting Requirements:

Wash Plant

V.A: NSPS reporting related to initial performance testing.

Concrete Batch Plants

V.B.1: Reporting requirements as identified in facility-wide operations.

Diesel-Fired Stationary Rotating Machinery

V.B.2: Reporting requirements as identified in facility-wide operations.

Facility-wide Operations

V.C: Excess emissions and permit deviation reporting.

F. Testing Requirements:

Wash Plant

VI.A: NSPS Standards related to performance testing.

Concrete Batch Plants

VI.B.1: Requirement to seek Director approval to use alternate and equivalent test method(s) to demonstrate compliance with the emissions limitations and standards.

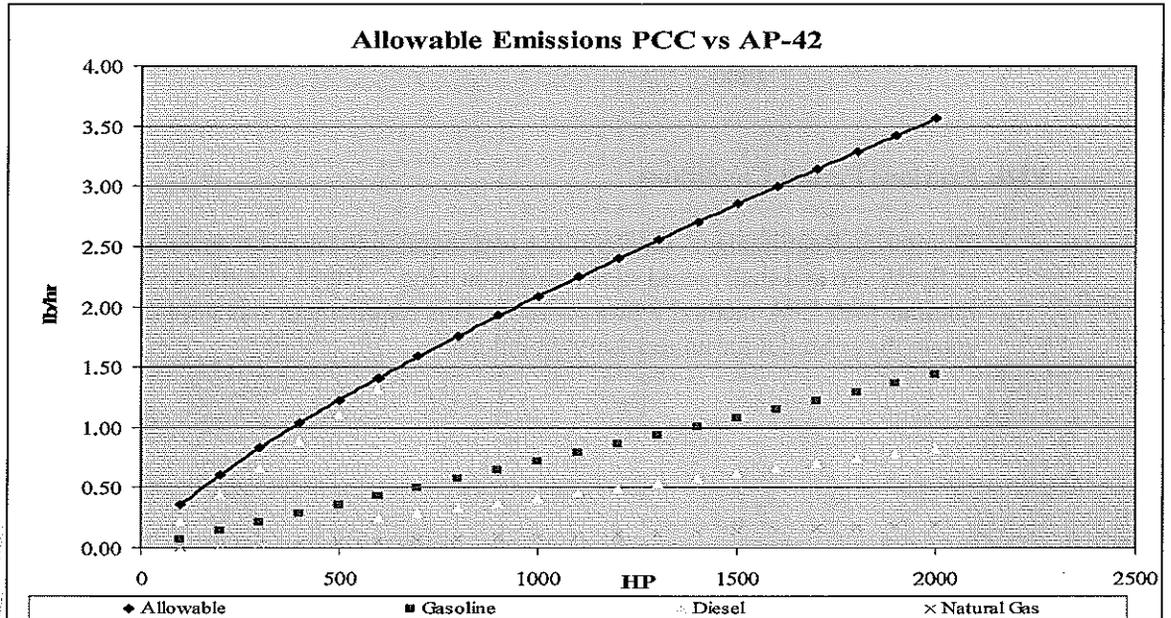
Diesel-Fired Stationary Rotating Machinery and Facility-Wide Operations

VI.B.2: Requirement to use general Bomb Method or equivalent to demonstrate compliance with the fuel limitation requirement.

G. Miscellaneous comments:

1. Particulate Matter:

PCC 17.16.340.C.1 limits the emissions of particulate matter from stationary rotating machinery. This rule has not been included in the permit as allowable emissions are well above potential emissions. The following Chart illustrates the fact:



AP-42 estimated emissions are demonstrably less than allowable emissions, and with the exception of small diesel engines, AP-42 estimated emissions are significantly less than the allowable emissions.¹ Therefore, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.

2. Sulfur Dioxide:

- a. Compliance with the fuel limitation requirement of PCC 17.16.340.H (II.B.2.d of the Specific Conditions) shall ensure compliance with the Sulfur Dioxide Standard of PCC 17.16.165.E and PCC 17.16.340.F which limits the emission of SO₂ to 1.0 pound per million BTU heat input, when burning low sulfur fuel. The definition of low sulfur fuel (PCC 17.04.340.A. "Low Sulfur Fuel") is fuel oil containing less than 0.9 percent sulfur by weight. AP-42 Appendix A, page A-5 states the heating value of diesel fuel is 137,000 BTU per gallon. Thus, 1 million BTU of heat input is equivalent to 7.3 gallons of diesel. At 7.05 lbs per gallon, 51.47 lbs of diesel will produce 1 million BTU. At 0.9% 51.47 lbs of diesel contains 0.46 lbs of sulfur. Combined with Oxygen to form SO₂ and assuming 100% of the sulfur in the fuel forms SO₂ this would yield 0.92 lb SO₂ per 1MMBtu.² Thus, low sulfur fuel oil will produce 0.92 lbs of SO₂ per million BTU of heat input. This is roughly 8% less than the prescribed 1.0 pound SO₂ per million BTU (PCC 17.16.340.F). Likewise, distillate, residual, and other such fuel oils range from 0.84 to 0.94 lbs of SO₂ per million BTU. Thus, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.

¹ At 599 hp the allowable emissions rate is 1.41 lb/hr while AP-42 estimates 1.32 lb/hr.

² The atomic weight of SO₂ = 64; the atomic weight of S = 32. SO₂ = (S) x (SO₂/S); (0.46 lb/MMBtu) x (64/32) = 0.92 lb SO₂.

- b. The requirement in PCC 17.16.340.J to report daily periods when the fuel sulfur content of the fuel being fired exceeds 0.8% by weight has not been included in the permit as all fuel that is delivered to Pima County has an enforceable limit of 0.9% by weight. Any fuel over 0.8% but below 0.9% would not be an exceedance of any standard or limitation and so it would be burdensome for sources to report every time the fuel had a sulfur content above 0.8%. An excess emissions report would be submitted should the fuel exceed the 0.9% sulfur content standard. This general permit will not allow the use of high sulfur diesel. Moreover, even though the sulfur content limit is 0.9% by weight, jet fuel, natural gas, gasoline and low sulfur diesel #2 delivered to Pima County consistently shows sulfur levels below this limit as shown in past records of fuel supplier specifications which verify sulfur content of the fuel fired.

VIII. Previous Permit Conditions

Monitoring Requirement - the Permittee was required to "monitor each load of cement transferred to any cement or flyash silo and shall record such transfer on a log." The observations were to "be made by an observer who is familiar with EPA method 9 procedures." This requirement was not taken from a specific rule and seems to create the potential for unnecessary violations.

