

## TECHNICAL SUPPORT DOCUMENT (TSD)

### GENERAL AIR QUALITY PERMIT FOR NON-METALLIC MATERIAL HANDLING FACILITIES

#### **(Crushing & Screening Plants, Hot Mix Asphalt Plants and Concrete Batch Plants)**

#### **General Comments**

This general air quality permit covers nonmetallic Crushing and Screening (C&S) Plants, Hot Mix Asphalt Plants (HMAP) and Concrete Batch Plants (CBP) operating in Pima County. This will streamline the permitting process for the large number of sources which would otherwise require substantially similar individual source permits. This action will reduce PDEQ's workload and afford decreased permitting timeframes. To obtain coverage under this general permit, the applicant shall complete the general permit application form for Non-metallic Material Handling Facilities.

The General Permit will last for 5 years from the date of its issuance. Facilities covered under this general permit will be required to have an individual "Authorization To Operate" (ATO) that will list each rotary dryer, pug mill, asphalt heater, batch plant, silos, crusher, screen, lime silo, and internal combustion engines (except for those internal combustion engines which are integrated into crushers, screens, or conveyors). The ATO will identify the piece of equipment by having the name of manufacturer, date of manufacture, maximum capacity, and serial number or equipment identification number and if applicable a throughput limitation in tons per year for each plant or combination of plants covered under the ATO. This general permit allows for a portable C&S Plant, HMAP or CBP to move to other locations within Pima County. This general permit allows the Permittee to co-locate a HMAP with crushing and screening (C & S) plant and/or concrete batch plant (CBP).

The Permittee that applies for an ATO under the general permit shall pay to Pima County Department of Environmental Quality (PDEQ) a flat permit processing fee of \$540 with the submittal of the permit application. The Permittee must also pay, for each calendar year, the applicable fees as described in Pima County Code Title 17, Chapter 12, Article III, Section 400 (PCC 17.12.400).

#### **Source Descriptions**

##### **Crushing & Screening Plants (C&S)**

C&S plants typically include stone quarrying, a primary crushing operation, a secondary crushing operation and a wash plant. Emissions from the C&S consist primarily of particulate matter (PM) and particulate matter less than 10 micrometers in aerodynamic diameter (PM<sub>10</sub>), which are emitted by many operations, such as conveying, screening, crushing, material handling and storing operations. Other significant sources of PM and PM<sub>10</sub> emissions are haul roads; these emissions are primarily in the form of fugitive dust.

##### **Hot Mix Asphalt Plants (HMAP)**

HMAP consists of a combination of hoppers, conveyer belts, aggregate dryers, bucket elevators, vibrating screens, bins, heated liquid asphalt cement storage tanks, pug mill and hot storage silos. Some HMAP incorporate reclaimed asphalt pavement (RAP) into their asphalt products. RAP is transported to the HMAP and is typically crushed and screened before further processing in the plant. Asphalt rubber may also be produced at a HMAP.

The primary emission source at the HMAP is the drum dryer which emits PM<sub>10</sub>, NO<sub>x</sub>, CO, SO<sub>2</sub>, VOC, and some HAP.

## Concrete Batch Plants (CBP)

CBP combine water, cement sand, and coarse aggregate to produce concrete. The CBP consists typically two elevated storage silos one containing cement and the other containing a cement supplement, usually flyash. The storage silos are required to be pneumatically filled. The sand and coarse aggregate are stored in elevated bins. The material stored in bins and silos is conveyed to weigh hoppers that combine the proper amounts of these materials. At most CBP the material from the weigh hopper and water is gravity fed into mixer trucks.

Emissions from the CBP consist primarily of PM and PM<sub>10</sub>, which are emitted from the transfer of cement and flyash to silos, loading of storage bins with sand and aggregate and transfer of sand and aggregate by conveyor to the weigh hopper, truck loading and storage piles.

## Controls

Lime, Cement and Flyash Silos are required to be vented to a fabric filter or sock. Baghouses are required to control emissions from the HMAP Drum Dryer and the CBP Weigh hopper and truck loading operation. A combination of water sprays, enclosures, shrouds and central duct collection systems can be employed to reduce fugitive emissions from C&S operations. Good maintenance and wetting of roads are methods used to control PM emissions from the movement of equipment and trucks over unpaved or dusty surfaces around the plants.

## Operating Limits and Associated Emissions:

Sources covered by this general permit shall emit less than major source thresholds on an individual basis for all criteria and hazardous air pollutants either by operational design or via a federally enforceable limitation (i.e. voluntarily accepted limitation on throughput by the applicant) in order to avoid certain federal or other applicable requirements. In addition to the screening questions in the permit application, in order to qualify for coverage under this general air quality permit, the permitted emissions must be below the limits in Table 1, as stated below.

**Table 1: Permit Emission Limits**

Maximum Permitted Emissions / Controlled Potential to Emit, tons/year								
Conventional or Criteria Air Pollutant								HAP(s)
PM <sub>2.5</sub>	PM <sub>10</sub>	PM	NOx	VOC	CO	SO <sub>2</sub>	Lead	Total
< 90	< 90	< 90	< 90	< 90	< 90	< 90	< 0.6	< 10