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CleanAirMakeMore.com

Rule 316 Handbook

Nonmetallic Mineral Processing and Related Operations

Maricopa County Air Quality Department

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Introduction

In March 2010, the Maricopa County Air Quality Department (MCAQD) issued its award-winning Dust Abatement Handbook for Compliance with Rule 310—Fugitive Dust from Dust-Generating Operations and associated Field Guide. Response from the public and the regulated community was very positive.

Given the popularity and success of the Dust Abatement Handbook, the MCAQD, working with the Arizona Rock Products Association (ARPA), developed this guidance document to assist compliance with one of the other principal dust control rules in Maricopa County, Rule 316-Nonmetallic Mineral Processing.

Rule 316 is a critical element in Maricopa County's strategy to achieve improved air quality. The MCAQD has instituted a comprehensive program to monitor compliance with Rule 316 and strict enforcement is leading to reduced dust emissions.

Every approach to improving air quality comes with a learning curve. In developing this handbook, the MCAQD has reached out to those most affected and asked for and received their input. The intent of this handbook is to provide a practical guide and a comprehensive overview of how Rule 316 is applied that will be useful and used—a document that will become dog-eared and tattered (virtually) through frequent reference.

CLEAN AIR MAKE MORE

PM-10 Nonattainment Area

PM-10 (particulate matter 10 microns, or smaller, in diameter) includes dust, soot, and other tiny bits of solid material that are released into and move around in the air. PM-10 is produced by many sources, including fugitive dust sources like construction, mining, agricultural activities, and paved and unpaved roads, as well as from fuel combustion sources such as diesel engines, fireplaces and wood stoves. A substantial portion of Maricopa County has been deemed a "nonattainment" area for PM-10 by the United States Environmental Protection Agency (EPA). PM-10 nonattainment areas are designated when an exceedance of the national air quality standard occurs.

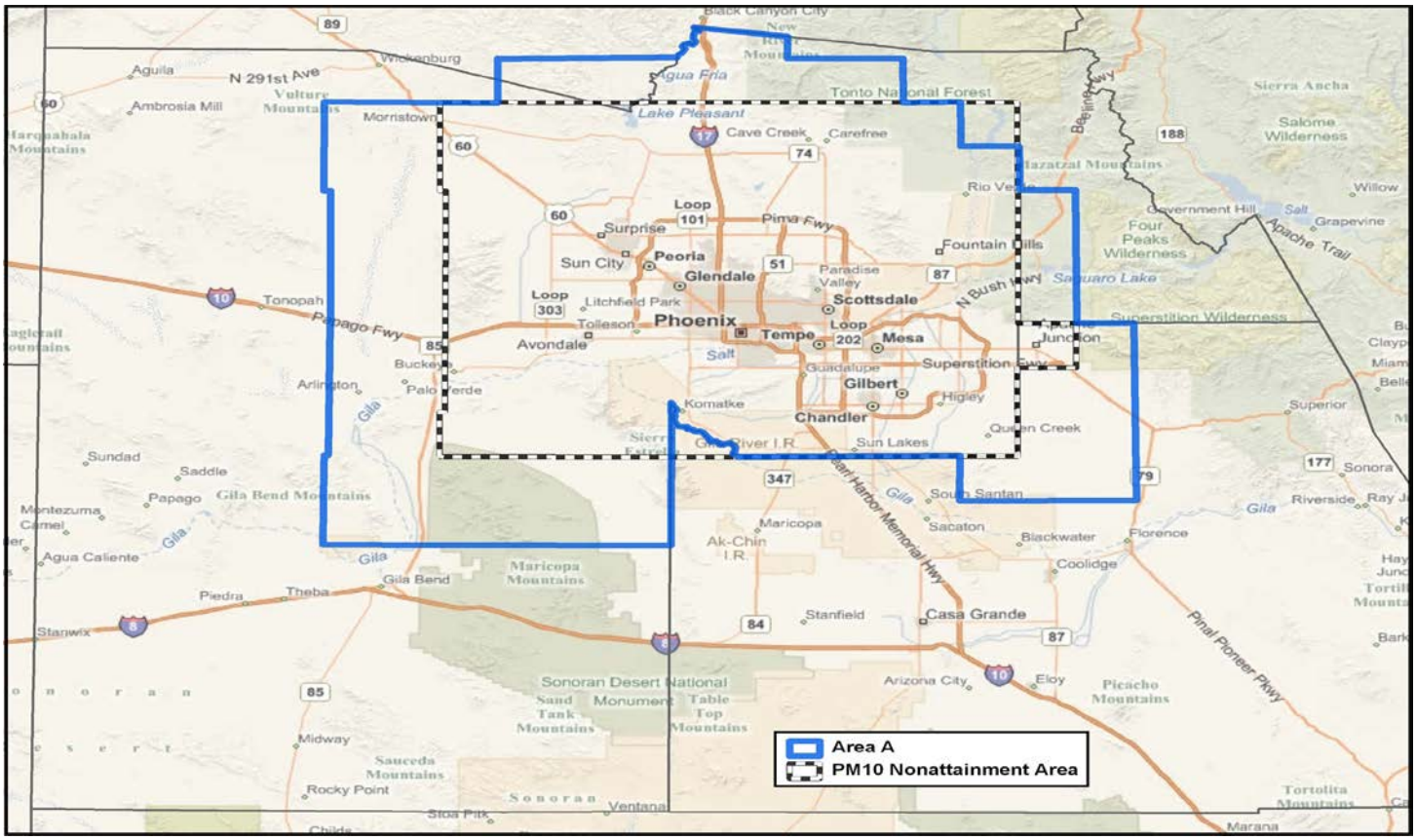
Non-metallic mineral processing and related operations are a significant potential source of PM-10 emissions. Haul roads, loading operations, crushing and screening, asphalt plants and concrete plants all contribute to PM-10 from these sources. Rule 316 is designed to require effective, yet reasonable controls to limit emissions from the non-metallic mineral industry.

Rule 316 Jurisdiction

Rule 316 applies to all of Maricopa County regardless of whether a site is located within the PM-10 nonattainment area. Although Tribal communities are found within the borders of Maricopa County, the MCAQD has no jurisdiction over them, because they are sovereign nations. This handbook does not apply to operations outside Maricopa County which may be regulated under different rules adopted by other regulatory agencies

Rule 316 Exemptions

Rule 316 does not apply to water treatment facilities or dry material transfer facilities. A dry material transfer facility is a facility that exclusively receives, stores, and distributes dry materials that remain within enclosed systems (such as hoses and silos) at all times. Dry materials are defined as cement, fly ash, lime, and other pozzolan materials to which water or other liquids have not been added.



Map of Maricopa County showing the PM-10 Nonattainment Area and Area A

About this Handbook

The purpose of this handbook is to provide a practical guide offering a comprehensive overview of the MCAQD's policies and interpretations of Rule 316. The intent is that this guide will be useful and used. The handbook is organized to respond to topical questions and it is structured to provide answers to the most commonly encountered compliance challenges.

Disclaimer

This *Rule 316 Handbook* is provided to assist in better understanding the provisions of Maricopa County Air Quality Department's Rule 316—Nonmetallic Mineral Processing. The contents of this handbook should not be viewed as the definitive statement of Rule 316 and how to achieve compliance. ***Where the clear language of Rule 316 and any formally issued policy related to Rule 316 conflict with this handbook, Rule 316 and the policy will prevail.***

The user of this handbook should clearly understand that the information contained in this document is not binding. The rule itself should be relied upon for a final determination of compliance. This handbook is not intended to serve as an alternative to Rule 316 which is, by itself, the definitive statement of dust control requirements applicable to nonmetallic mineral processing and related operations that occur within Maricopa County.

Updates

This document is expected to be updated from time to time. If you identify any area that requires clarification, please let us know. Send your comments to the attention of the Business Assistance Coordinator at the Maricopa County Air Quality Department. Also, you may wish to check the MCAQD's website from time to time to see if any revisions are posted.

Where to Find the Full Text of Rule 316

Rule 316 is available online at:

http://www.maricopa.gov/DocumentCenter/View/5378

Acknowledgements

This handbook and the related field guide were developed in 2012 in a collaborative effort between the regulated community and the Maricopa County Air Quality Department. The basic document was developed by an internal working group within the MCAQD and an external working group, which was comprised of members of the regulated community who will rely on the contents of this handbook to improve compliance with Rule 316.

This handbook was updated in 2018 after the MCAQD worked with stakeholders to revise, update, and clarify the requirements of Rule 316.

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Document Conventions

When a reference to a period of days is mentioned, it will mean calendar days unless otherwise specified.

It is recommended that this document be printed in color to allow all graphical features to be seen.

Within the handbook, the Maricopa County Air Quality Department will be commonly referred to as the MCAQD.

The “Control Officer” refers to the Director of the MCAQD.

The “Administrator” refers to the head of the United States Environmental Protection Agency.

Acronyms

Commonly Used Rule 316-Related Acronyms

ABC	Aggregate Base Course
AAP	Area Accessible to the Public
ADEQ	Arizona Department of Environmental Quality
ASTM	American Society for Testing and Materials
ATI	At the Time of the Inspection
CFR	Code of Federal Regulations
CCM	Contingency Control Measure
DCP	Dust Control Plan
DSCF	Dry Standard Cubic Foot
ECS	Emission Control Systems
EPA	Environmental Protection Agency
FRV	Federally Reportable Violation
GR	Grains
HPA	High Pollution Advisory
HPV	High Priority Violation
HT	Haul Truck
NOV	Notice of Violation
OAC	Order of Abatement by Consent
O&M	Operations and Maintenance
OTC	Opportunity to Correct
PCM	Primary Control Measures
PM	Particulate Matter
PM-10	Particulate matter whose size is 10 micrometers or smaller (One inch is equal to 25,400 micrometers)
TOCD	Trackout Control Device
TFV	Threshold Friction Velocity
TO	Trackout
VE	Visible Emissions
VEE	Visible Emissions Evaluation

Section 1 - Before Starting Work

Rule 316 Applicability

Why Rule 316?

Because air quality in the greater metropolitan Phoenix area is classified as in serious nonattainment for PM-10, it is necessary to have a comprehensive program to control PM-10 air pollution. Maricopa County's Rule 316 – Nonmetallic Mineral Processing was developed as part of this comprehensive program.

Coverage of Rule 316

Rule 316 applies to any nonmetallic mineral processing plant within Maricopa County (excluding tribal lands). Maricopa County's definition of a "nonmetallic mineral" includes crushed and broken stone, sand gravel and quarried rocks, clay, rock salt, gypsum, sodium compounds, pumice, gilsonite, talc and pyrophyllite, boron, barite, fluorspar, feldspar, diatomite, perlite, vermiculite, mica, kyanite, and coal.

A "nonmetallic mineral processing plant" is any facility utilizing any combination of equipment or machinery to mine, excavate, separate, combine, crush or grind any nonmetallic mineral wherever located, including, but not limited to, lime plants, steel mills, asphalt plants, concrete plants, and sand and gravel plants.

Rule 316 also applies to related operations, including concrete plants, asphalt plants, bagging operations, handling and disposal of returned products, blasting operations, and other dust generating operations.

The following activities are covered in this handbook: crushing and screening of nonmetallic minerals, concrete batch plants, and hot mix asphalt plants.

Note: Additional activities not listed here are covered in Rule 316.

What Portions of Maricopa County are Not Covered by Rule 316?

Although tribal lands are found within the borders of Maricopa County, the MCAQD has no jurisdiction over them because they are legally sovereign nations. When operating on tribal lands, check with tribal governments as some have their own dust control requirements. For example, the Gila River Indian Community has adopted requirements for nonmetallic mineral processing facilities that are similar to Rule 316.

Permits are Required

Every nonmetallic mineral processing operation located in Maricopa County must have and comply with an operating permit issued by the MCAQD (or ADEQ for portable plants that do not operate exclusively in Maricopa County) before startup of the facility. Permit requirements are described in more detail in sections 2 and 10 of this handbook.

New Source Equipment Startup and "Shakedown"

When a new source begins operation, the equipment generating and controlling emissions may be subject to a performance test to determine that the equipment is operating in compliance with all applicable emission limits. County Rule 270 § 401 requires completion of a performance test within 60 days after a source achieves the capability to operate at its maximum production rate on a sustained basis and, in no event, longer than 180 days after initial startup of the source. This requirement closely follows the federal regulation found at 40 CFR 60.8 which addresses this topic. Each individual piece of equipment at a facility subject to Rule 316 must be in compliance when it starts up and the performance test is the verification that the equipment is operating in compliance. EPA explained the concept of a "shakedown" period in a letter dated 26 April 1976. EPA explained that a "short

period" of time for "shakedown" is allowed to provide time to "adjust and fine tune" control equipment before a performance test. This should not be considered as the entire time between initial startup and the date of the performance test (which could be a considerable period of time), rather, it is understood that the "shakedown period" is intended to initially adjust the equipment to establish optimal (compliant) operating conditions prior to a performance test being conducted. EPA clearly states, "Section 60.8 was never meant to imply that, prior to a performance test, a grace period exists." The MCAQD's expectation is that a facility is operating its equipment in compliance with permit conditions at all times prior to a performance test being performed. Factors associated with "shakedown" of the equipment would be elements to consider in any enforcement proceeding that results from a determination of non-compliance.

A Few Essentials

What do you need to do to ensure that a project is in compliance? The following list is intended to provide a snapshot of some of the most significant provisions of Rule 316. This handbook provides more expansive discussions on each of these provisions in later sections.

Before Starting Work

- ✓ Obtain an operating permit before starting operations. It is advised that an application for a new facility be submitted six months prior to beginning operations.
- ✓ Review the draft permit for accuracy and limits you can work with.
- ✓ Understand all rules and regulations in your permit. Some operations that occur at non-metallic mineral processing plants are regulated under different County or Federal regulations (e.g. abrasive blasting, solvent cleaning, gasoline storage, etc.).
- ✓ As part of the permit application process, you will be required to fill out an application which includes a Dust Control Plan (DCP) and an Operations and Maintenance (O&M) Plan.
- ✓ Read and understand your approved DCP and O&M Plan.
- ✓ Familiarize yourself with Rule 316 and this handbook. The Rule contains important details and requirements that may not be addressed in the handbook. Develop a working knowledge of the dust control requirements and related challenges.
- ✓ Understand your operations—facility boundaries, emission sources, areas where soil will be disturbed, locations of exits and entrances, storage areas, haul roads, equipment paths—consider everything that could potentially create dust.
- ✓ If your facility has a rated or permitted capacity of 25 tons or more of material per hour or has more than five acres of disturbed area, a Fugitive Dust Control Technician is required. The Fugitive Dust Control Technician must complete a comprehensive dust control training class and possess a valid visible emission certification before starting work.
- ✓ Ensure that you are prepared to control dust prior to starting operations. For example, permanently mount water systems at required points on crushers, screens, and conveyors.
- ✓ Develop a traffic flow pattern and immediately establish a controlled exit with a trackout control device.
- ✓ Contact the MCAQD's Business Assistance Coordinator to request a courtesy visit or to ask questions.

> **Helpful Hint**
>
> The Dust Control Plan (DCP) and the Operations and Maintenance Plan (O&M Plan) should be filled out by someone familiar with controlling emissions and specific facility operations.

While Your Permit is Active

- ✓ Never allow on-site emissions to exceed specific opacity limits.
- ✓ Actively monitor trackout during the course of the workday.
- ✓ Do not allow any visible dust to cross your property line.
- ✓ Apply water or other control measures to limit emissions before, during, and after operations. (Note: additional control options are available in lieu of water).
- ✓ If the primary dust control measure is ineffective, immediately implement the contingency measure from your approved Dust Control Plan. While the contingency measure can be applied along with the primary control measure, the use of both, concurrently, is not required.
- ✓ Document the use of the contingency measure in your daily log.

- ✓ Be aware that changes to the process and/or equipment could require modifications to the permit.
- ✓ Maintain thorough records to ensure compliance with record keeping requirements and to ensure throughput and emission limits are not exceeded.
- ✓ Educate employees on where and how to conduct soil moisture testing.
- ✓ Conduct detailed self-inspections daily when operations are active.
- ✓ If dust emissions cannot be controlled, stop work.
- ✓ Understand and meet stabilization standards.
- ✓ Know when your permit expires and place the expiration date on your calendar along with the date by which the permit renewal application must be submitted (be sure to allow enough time for processing and postal delivery).
- ✓ Permit renewal applications must be submitted no later than six months before the permit expiration date. Note: If the application is not complete or errors are present it may take longer for the MCAQD to issue the permit.

Operation Shut Down

- ✓ When work is completed, ensure that disturbed areas are stabilized and meet stabilization standards. When a permit is closed, the property will revert to being regulated under rule 310.01 (vacant lots) or Rule 310 if appropriate.

Responsibilities as a Permit Holder

- ✓ The applicant's signature on the permit application represents a binding agreement and obligates the applicant to implement sufficient control measures in order to achieve applicable standards.
- ✓ The permit holder is ultimately responsible for ensuring the permitted facility is in compliance at all times to prevent risks to the environment and the public. The permit holder is responsible for any non-compliance, even if it is the result of an action by a visitor, an independent contractor, or a trespasser.
- ✓ The provisions of an approved Dust Control Plan and Operations and Maintenance Plan are binding and enforceable. It is important that control measures and maintenance procedures chosen in these plans are functional for your facility and able to meet compliance standards. Measures and procedures chosen need to be implemented, so if you don't intend to implement a provision of the plans, don't include it.
- ✓ The approved Dust Control Plan is effective 24/7, including holidays, therefore, dust must be controlled 24/7.

Helpful Hint

An easy way to ensure the permit, DCP, and O&M plan are on-site at all times is to place the documents in a designated "Air Quality" binder. This binder should contain the Air Quality permit the DCP and O&M Plan, recent dust control logs, throughput and emission records, soil moisture test results, and any other applicable records or documents related to the permit.

Section 2 - Operating Permit, Dust Control Plan, and Operations and Maintenance Plan

The Operating Permit

Applying for a Permit

Most sources subject to Rule 316, such as hot mix asphalt plants, concrete batch plants, and crushing and screening plants, can obtain permit coverage under what is referred to as a Non-Title V Permit. In contrast, major sources, determined by the amount of expected emissions, must obtain a Title V permit – a far more complex and detailed application process). Information on permit types and applications are located on the MCAQD's website.

Types of Air Quality Permits:
www.maricopa.gov/2292

Permit Applications:
www.maricopa.gov/1818

Completed applications should be submitted, along with payment of the fee, to:

Walk-in and Mail:
Air Quality Department
3800 N Central Ave, Suite 1400
Phoenix, Arizona 85012

Or

Walk-in only:
MCAQD One Stop Shop
501 North 44th Street, Suite 200
Phoenix, Arizona 85008

Non-fee related renewals or plan updates can be sent by email to:
AQPermits@mail.maricopa.gov

When submitting an application, an initial fee needs to be submitted in order to begin the permit engineering process. This fee will be noted on the first page of the Non-Title V application. If the permit application is mailed to One Stop Shop, the payment must be by check or money order. If the application is hand delivered, you can also pay by cash or credit card. Make checks payable to "Maricopa County Air Quality Department" or "MCAQD".

Before a permit can be issued, the MCAQD will issue an invoice to the permit applicant for all permit processing time – staff time is charged on an hourly basis at a pre-determined hourly rate. This invoice must be paid in full prior to the MCAQD issuing a permit. It is important to have a clear understanding of the potential charges that may be incurred anytime a permit application is submitted – including applications for minor permit modifications.

> **Helpful Hint**
>
> Portable sources that operate exclusively in Maricopa County must obtain a Non-Title V portable permit from the MCAQD. Portable sources that do not operate exclusively in Maricopa County must obtain permit authorization from ADEQ. See Section 9 for additional information concerning portable sources.

Public Notice and Public Hearings

The permitting process includes public notice and, in certain circumstances, a public hearing. Should a public hearing be required, the applicant and members of the public have an opportunity to provide comments related to the draft permit. The MCAQD will not respond to comments made at the time of the hearing. Instead, the MCAQD receives comments and provides responses, as appropriate, in writing when the permitting action is complete.

> **Helpful Hint**
>
> Be a good neighbor. Provide information about your plans and solicit public input long before the formal public notice period and public hearing. For a permit renewal, it may be desirable to conduct an open house to allow members of the community to better understand a facility's operations and to know what you do to control emissions.

Permit Renewal: What to Do When Your Permit is about to Expire

An operating permit issued under Rule 316 is valid for a five year period. Start to plan for a permit renewal well before your current permit is about to expire. Renewal applications must be submitted at least six months prior to the expiration of the existing permit

Permit Revisions: What to Do When Your Operations Change

A permit revision may be necessary for a number of reasons, for example:

- ✓ Adding new equipment (if the addition will trigger new applicable requirements)
- ✓ Modifying existing equipment (if the modification will trigger a new applicable requirement).

- ✓ Increasing operating hours or production rates above permitted levels
- ✓ Establishing or changing an emissions cap
- ✓ Making any change that triggers New Source Review (NSR)

The permit revision procedure depends on whether it is an administrative, minor or non-minor permit revision. Permit revision forms are located on the MCAQD's website at:

www.maricopa.gov/1818

Helpful Hint

If contact people, phone numbers, mailing addresses or email addresses associated with the permit, dust control plan, or the designated facility representative change, submit a Contact Information Update form.

When Nonmetallic Mineral Processing and Related Operations are Completed

A facility remains subject to Rule 316 while non-metallic mineral processing and related operations continue. Once the facility is no longer engaged in those operations the facility may do one of the following:

- ✓ Request a permit revision to remove requirements that no longer apply
- ✓ Apply for another type of permit (such as a Dust Control Permit or a authority to operate under the General Permit for Stationary Dust Generating Operations)
- ✓ Submit an Air Permit Cancellation/Closeout Request

Helpful Hint

The MCAQD's permit engineer can be a resource to you when reviewing your draft conditions or modifying your permit.

Dust Control Permits

In Maricopa County, Dust Control permits are required for any dust-generating operation that disturbs more than one-tenth of an acre (0.1 acres). If a facility has obtained a permit from the MCAQD for nonmetallic mineral processing and/or related operations, and the permit contains fugitive dust control requirements from Rule 316, the facility does not need to obtain a Dust Control Permit before commencing construction, demolition, grading, overburden removal, and other dust-generating operations. Instead, the facility must submit a revised Dust Control Plan and comply with the requirements of Rule 316. The permit holder is ultimately responsible for ensuring that all operations and activities conducted under the permit are in compliance with applicable requirements.

If a contractor will be hired to complete a demolition or construction project, the project contractor should obtain a Dust Control Permit before any dust-generating operations associated with the project commence. The area that is covered by the Dust Control Permit will be subject to Rule 310 and the Dust Control Permit holder will be responsible for compliance.

Where there is overlap between nonmetallic mineral processing, related operations, and other dust-generating operations, all parties involved in the operations are responsible for achieving compliance.

The Dust Control Plan (§311)

A Dust Control Plan describes all fugitive dust control measures to be implemented at a facility. The Dust Control Plan will also describe equipment associated with fugitive dust emissions and fugitive dust control measures (e.g. gravel pads, wheel washers, truck washers, rumble grates, watering systems, and street sweepers. The Dust Control Plan is completed by the applicant and submitted as part of the permit application. The form is located online on the MCAQD's website at:

www.maricopa.gov/DocumentCenter/View/24934

The Dust Control Plan is an integral part of the permit. Given its importance, consider having the Dust Control Plan completed by someone familiar with dust-generating operations. The MCAQD reviews and approves each Dust Control Plan for completeness and technical accuracy.

The Dust Control Plan must include the following information:

- ✓ Names and contact information for persons responsible for implementing the Dust Control Plan.
- ✓ Equipment (e.g. water sprays, baghouses, and overflow warning systems) that will be used to comply with Sections 301, 302, and 303 of Rule 316.
- ✓ Appropriate fugitive dust control measures for every actual and potential source of fugitive dust.

- ✓ The installation date of each trackout control device.
- ✓ Information on any dust suppressants that will be applied.
- ✓ Operation and maintenance procedures for fugitive dust control measures (e.g. watering systems, trackout control devices, and street sweepers).
- ✓ A map that clearly shows property boundaries, locations where control measures will be utilized, exits, nearest public roads, unpaved parking lots, and a north arrow.
- ✓ The method that will be used for soil moisture testing.
- ✓ A process diagram showing:
  - ✓ All screen outlets, crusher outlets, and stacker points containing aggregate material less than 0.25 inches in diameter.
  - ✓ Locations where soil moisture samples will be collected.
  - ✓ The applicable minimum soil moisture content for each sample location.

Helpful Hint

Those members of your team who are most familiar with the operations at the facility should be consulted when developing the DCP and the O&M Plan.

Updating the Dust Control Plan

The approved Dust Control Plan can be revised at the initiative of the permit holder ***or*** as directed by the MCAQD.

Revisions to the Dust Control Plan are not effective at time of submittal—they must be approved by the MCAQD before becoming effective. Changes to the Dust Control Plan required by the Control Officer must be submitted within 5 working days after receipt of the Control Officer's written notice.

Changes Made at the Initiative of the Permit Holder
The permit holder may request changes to the Dust Control Plan for:

- ✓ Changes in dust control personnel and/or their contact information.
- ✓ Substantive changes in operations.
- ✓ Any change requested by the Fugitive Dust Control Technician or designated site representative.
- ✓ Changes to primary or contingency control measures.
- ✓ Alternative plan for soil moisture testing.

Helpful Hint

The Dust Control Plan does not need to be revised to reduce the frequency of moisture tests in accordance with Rule 316, Section 312.3.

Changes Required by the Control Officer
At times, dust emissions may continue to occur even if the control measures contained in the Dust Control Plan are followed. When this occurs, the MCAQD will issue a notice to the permit holder requiring revisions to the Dust Control Plan. The permit holder must submit required revisions within 5 working days of receipt of the notice. If more than 5 working days are needed, the permit holder can request an extension for good cause. Even if the extension is granted, compliance with Rule 316 is expected immediately.

Helpful Hint

OPEN YOUR MAIL – often documents will have a deadline or action date included. Don't miss critical deadlines by failing to open mail from the MCAQD immediately.

How is the Approved Dust Control Plan Used?

From the MCAQD's perspective, the approved Dust Control Plan is a contract between the permit holder and the MCAQD—its terms are enforceable. The dust control measures included in the Dust Control Plan are the measures that inspectors will expect you to apply to your facility. The Dust Control Plan does not supersede Rule 316.

Generally, primary controls listed in the plan should be used first. Contingency measures are to be used when the primary controls are not effectively controlling dust emissions. If the contingency measures are not effective you should shut down operations until emissions can be effectively controlled.

If primary controls or contingency measures don't result in effective control, the approved Dust Control Plan must be revised. The obligation is clearly on the permit holder to control dust emissions. If emissions cannot be adequately controlled using all available measures, the facility will be in violation of Rule 316 and subject to enforcement by the MCAQD.

The Operations and Maintenance (O&M) Plan (§305)

In addition to the Dust Control Plan, sources subject to Rule 316 must also develop an O&M Plan for all Emission Control Systems (ECS). The O&M Plan is completed by the applicant and must be submitted prior to startup of the equipment subject to the plan. The form is located online on the MCAQD's website at:

www.maricopa.gov/DocumentCenter/View/6888

The O&M Plan should be completed by someone familiar with emission control systems. The MCAQD reviews each O&M Plan for completeness and technical accuracy.

Updating the Operations and Maintenance Plan

Changes to an existing O&M Plan can be made for a variety of reasons, including:

- ✓ Equipment changes;
- ✓ Substantive changes in operations;
- ✓ Changes in monitoring parameters; or
- ✓ Changes in maintenance procedures.

Changes should be made by submitting a complete, revised O&M Plan with a cover letter identifying all changes and the reason for such changes.

The MCAQD's approval is not required before implementing the changes in a submitted O&M Plan. If the O&M Plan is subsequently found to be deficient, the MCAQD will notify the source in writing that the O&M Plan must be revised. If requested by the Control Officer, the revised O&M Plan must be submitted within 5 working days.

Section 3- Approved Training

What Training is Required? (§309 and §310)

Rule 316 requires certain personnel at a permitted site to receive training on regulatory requirement and dust control strategies. The level of required training and which personnel must be trained depends on the amount of acreage disturbed within the permitted facility and the rated or permitted capacity of the facility.

All water truck and water pull drivers must complete a Rule 316 Basic Dust Control Training Class. The plant manager or foreman (or other designated representatives) at sites that have more than one acre of disturbed surface area but less than 5 acres of disturbed surface area, must also complete the Rule 316 Basic Dust Training Class. Facilities with a rated or permitted capacity of 25 tons per hour or more, and facilities that have five acres or more of disturbed surface area must have a Fugitive Dust Control Technician, who must complete the Rule 316 Comprehensive Dust Control Training Class and be certified to determine opacity using EPA Method 9.

Where and When is Training Offered?

Information on Rule 316 Dust Control Training, including class schedules and registration information, is available on the MCAQD website:

www.maricopa.gov/1874

Certification

There are two levels of certification: basic and comprehensive

Basic Certification

To earn basic certification, individuals must complete a three-hour training course. Water truck and water pull drivers are required to earn the "basic" level of certification.

Facilities that have more than 1 acre disturbed, but less than 5 acres disturbed and a rated capacity less than 25 tons per hour are required to designate an on-site representative who has earned basic certification. Employees required to have the basic dust training must renew their training certification once every three years.

Comprehensive Certification for Fugitive Dust Control Technicians

Comprehensive training is a six-hour training that covers dust control measures in detail. Individuals who complete this training earn comprehensive certification and may be designated as a Fugitive Dust Control Technician.

A certified Fugitive Dust Control Technician must *be identified and be present at all times during primary dust-generating activities* at facilities that have a rated or permitted capacity of 25 tons or more (of material per hour) or more than 5 acres of disturbed surface area.

Helpful Hint

If a site's sole Fugitive Dust Control Technician misses work or must leave early, primary dust generating activities must be shut down. Train several employees to avoid this scenario.

A Fugitive Dust Control Technician must complete the comprehensive training program once every three years.

Fugitive Dust Control Technicians:

- Are required at facilities that have a rated or permitted capacity of 25 tons per hour or at facilities with more than 5 or more acres of disturbed area.
- Must have earned the comprehensive certification.
- Must be on-site during primary dust-generating activities related to the purposes for which the permit was obtained.
- Must be certified to determine opacity.
- Must be authorized to ensure that fugitive dust control measures are implemented on-site.

Helpful Hint

The need for the Fugitive Dust Control Technician to be on-site during primary dust-generating activities cannot be over emphasized. Experience has shown that violations often occur when the Fugitive Dust Control Technician is not available to oversee operations.

Helpful Hint

"Primary dust generating operations" are those related to the purposes for which the permit was obtained (e.g. crushing and screening or concrete batching). If the only activity on-site is not related to "primary dust generating operations" the Fugitive Dust Control Technician need not be on-site.

For example, delivery of mail or office supplies, security patrols and other incidental activities would not constitute "primary dust generating operations."

Helpful Hint

Maintain a legible photocopy of the certification card for each trained employee in a file or binder located at the facility so that it is accessible during an inspection.

Visible Emission Certification

Fugitive Dust Control Technicians must be certified to determine opacity of visible emissions in accordance with the provisions of EPA Method 9. Certification can be obtained through "smoke school." The MCAQD does not have a certification or approval program for smoke school providers and cannot make any recommendations for or against any providers.

Additional information on smoke school is available at www.maricopa.gov/1884.

Smoke school providers can be identified by searching for "EPA Method 9 Smoke School in Arizona" online.

Fugitive Dust Control Technicians:

The MCAQD's Director has the authority to suspend or revoke an individual's Basic or Comprehensive Dust Control certification for cause. For cause means:

- Inappropriate ethical activities or conduct associated with the dust control program; or
- Repeated failure to follow training requirements.

Section 4 - Permit Signage and Recordkeeping

Facility Information Signs (§308)

Information to Include

The facility information sign must use black text at least four inches high on a white background and be placed at the main entrance to the facility where it can be clearly viewed by the public. The sign must contain the information shown below:

- ✓ Facility name
- ✓ Permit holder's name
- ✓ Current permit number or number of authority to operate under a general permit
- ✓ Name and local phone number of person(s) responsible for dust control
- ✓ The following text:

  Dust Complaints?
  Call the Maricopa County Air Quality Department
  (602) 372-2703 or
  (602) 506-6010

Note: Should the MCAQD's official complaint phone number ever change, the MCAQD will send a notice to all permit holders providing the new number.

When to Update the Sign

You must change your project information sign to reflect changes such as:

- ✓ A new contact name or phone number
- ✓ A change in the facility name
- ✓ A new permit number

Where to Post the Sign

The facility information sign must be posted at the main entrance to the facility.

One purpose of the signage requirement is to provide the public with information about the permit. The sign should be posted where that information is most prominently observed by members of the public.

> **Helpful Hint**
>
> To avoid uncertainty when multiple entrances are used, a permit holder is encouraged to place signs at each facility access point, especially where another project entrance is more visible to the public. However, only one sign is required by Rule 316.
>
> If only one sign is posted, it should be placed at the location that would be viewed by members of the public as the main entrance to the facility.
>
> For operations that are located within another facility (e.g. a concrete batch plant located in a pit), the sign should be posted so that it visible to the general public (e.g. at the entrance to the facility where the pit is located).

Recordkeeping (§501)

What Records are Required?

- ✓ A complete copy of the current permit and previous permits (must be on-site).
- ✓ The Dust Control Plan and all updates (must be on-site).
- ✓ The Operations and Maintenance Plan and all updates (must be on-site).
- ✓ Records of process and operational information for each day of operation, including:
  - o Hours of operation
  - o Type of batch operation
  - o Daily throughput of materials
  - o Volume of concrete and amount of asphaltic concrete produced
  - o Amount of aggregate mined
  - o Amount of each non-metallic mineral and dry material delivered
  - o Number of aggregate trucks, mixer trucks, delivery trucks or batch trucks exiting facility per day (*only for facilities that seek reduced compliance obligations available to facilities with less than 60 trucks exiting the facility per day*)
  - o Operating condition of watering systems
- ✓ Records of soil moisture testing
  - o Date, time, and location for each soil sample collected
  - o Results of each soil moisture test
  - o Corrective actions taken when results are below the minimum soil moisture content

- ✓ O&M Plan records for any ECS, and any ECS monitoring devices that are used pursuant to this Rule or under an Air Pollution Control Permit:
  - Periods of time that an approved ECS is operating to comply with this rule
  - Periods of time that an approved ECS is not operating
  - Flow rates
  - Pressure drops
  - Other conditions and operating parameters necessary to determine if the approved ECS is functioning properly
  - Results of visual inspections
  - Corrective action taken, if necessary
  - Dates of all service or maintenance related activities for each approved ECS
- ✓ Dust Control Plan records
  - Observations for damp and crusted soil
  - Trackout conditions and actions taken to clean up trackout
  - Daily water usage (note how water is applied, how often, and the amount – a rough approximation is acceptable)
  - Dust suppressant application
  - When street sweeping occurred
  - Maintenance of trackout controls (what kind and when they were installed)
  - When and what kind of contingency control measures were used
  - What subcontractors were on-site (include registration numbers)
  - A list of employees who have completed dust control training and the date of the class
  - Types and results of all test methods conducted

Records are required for each working day. A day is defined as a period of 24 consecutive hours beginning at midnight.

Helpful Hint

- ✓ While no exact format is prescribed for recordkeeping, a three-ring binder is recommended for paper records.
- ✓ Electronic recordkeeping is a valid form of recordkeeping.
- ✓ A copy of the Air Quality Permit, Dust Control Plan, and/or O&M Plan accessible on a computer is an acceptable way to maintain an on-site copy.
- ✓ While records maintained in the normal course of business may be used, those records should provide specific information required by this rule.
- ✓ Dust Control Plan records and O&M Plan records are important documents and can be used to show that site conditions and emissions from process equipment have been carefully controlled.

Document Retention and Availability

Records must be maintained on-site (in paper or electronic form) and made available immediately upon request. However, the MCAQD may use its discretion to provide additional time to submit records when deemed appropriate.

All records must be retained for five years.

Helpful Hint

Other rules and regulations may impose additional monitoring and recordkeeping requirements. The operating permit for the facility identifies all applicable requirements.

This example of a completed daily record keeping form and blank daily record keeping forms can be found online at: www.maricopa.gov/4151

DUST CONTROL RECORD KEEPING FORMS

SELF INSPECTION AND CONTROL MEASURE APPLICATION **MCAQD PERMIT #: 180999**

DATE		Trackout Control Device	Trackout	STABILIZATION				Water Application	Water Supply
				Parking/staging	Unpaved Roads	Open Areas	Storage Piles		
1-May-17	Self-Inspection	0700: 1/4 mile paved road (clean) and rumble grate (clean)	1200: Trackout measured 20 ft. 1315: Trackout measured 50 ft.	0845: Continuous gravel cover and visibly moist, no visible emissions.	0630: No visible emissions observed. 1200: No visible emissions.	0845: Soil crust. 1315: Visibly moist	0845: Visibly moist, no visible emissions. 1415: Visibly moist, no visible emissions.	Total daily application – 45,000 gallons.	1 million gallon water pond
	Control Measure Application - Method, Frequency, Intensity	P / C	P / C	P / C	P / C	P / C	P / C	P / C	P / C
		Maintenance	Cleaning	Moisture / Crust	Moisture / Crust	Moisture / Crust	Moisture / Crust	App. Equipment	Source
		1600: Cleaned with street sweeper	1200 Cleaned with street sweeper 1315: Cleaned with street sweeper	0830: Applied 1000 gallons of water. 1430: Applied 1K gallons of water.	Stabilizer applied on 21 March 17 (Gorilla Snot).	Applied 30K gals. Water	0800: 5K gals. water applied.	One water truck operated continuously throughout the work day.	1 million gallon water pond and 2 water pumps

DATE		Trackout Control Device	Trackout	STABILIZATION					
				Parking/staging	Unpaved Roads	Open Areas	Storage Piles		
2-May-17	Self-Inspection	0700: 1/4 mile paved road (clean) and rumble grate (clean)	1200: No trackout 1700: No trackout	0800: Continuous gravel cover and visibly moist, no visible emissions.	0800: No visible emissions observed. 1245: No visible emissions.	1100: Soil Crust	0800: Visibly moist, no visible emissions. 1100: Visibly moist, no visible emissions.	Total daily application – 25,000 gallons.	1 million gallon water pond
	Control Measure Application - Method, Frequency, Intensity	P / C	P / C	P / C	P / C	P / C	P / C	P / C	P / C
		Maintenance	Cleaning	Moisture / Crust	Moisture / Crust	Moisture / Crust	Moisture / Crust	App. Equipment	Source
		1630: Cleaned with street sweeper	N/A	0730: Applied 1000 gallons of water. 1530: Applied 1000 gallons of water.	Stabilizer applied on 21 March 17 (Gorilla Snot).	N/A	0700: 2K gals. water applied.	One water truck operated continuously throughout the work day.	1 million gallon water pond and 2 water pumps

Section 5 - Trackout

Trackout is one of the most frequently cited violations by the MCAQD's inspectors and **controlling trackout should be a priority at any facility.** In Rule 316, trackout is defined as:

"Any materials that have the potential to produce fugitive dust and to adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen or been deposited onto an area accessible to the public."

The existence of trackout should be closely monitored at any facility – especially when weather conditions make the possibility of trackout more likely. Trackout is easily observed on paved surfaces and the emissions generated by passing vehicles often generate complaints to the MCAQD.

Note: Material that has been deposited on internal paved roads is not trackout and will be addressed in the section on spillage (page 9-3).

Trackout Clean-up Requirements

There are two principal trackout requirements:

> *Trackout must be removed immediately when the cumulative distance of the trackout reaches 25 feet.*
>
> *Trackout less than 25 feet in cumulative length must be cleaned up at the end of the workday.*

Cumulative Distance

If there is a clear and continuous trail of trackout exiting a facility, and the measured distance of the trackout is 25 feet or more, then the obligation of the facility from which the trackout emerges is to remove the trackout immediately.

Any trackout from a facility regulated under Rule 316 must be addressed by the facility regardless of whomever may have caused the trackout.

The moment an inspector arrives at a facility and sees trackout 25 feet or greater, a violation can be issued. As a practical matter, an inspector may wait a short time to observe if any effort is underway to clean the trackout before issuing a violation. While that practice may occur, there is no obligation on the part of the inspector to allow any additional time if no active cleanup is observed when the inspector arrives at the facility.

If an inspector is at a facility and observes a truck exiting the facility and leaving 100' of trackout, no violation would occur provided the facility is observing the trackout and initiates the cleanup process. The key issue for the inspector is the responsiveness of the facility and whether trackout is being removed immediately after placement should the trackout equal or exceed 25' in length.

Trackout does not need to be observed as a continuous trail. If the trackout is not continuous, then the distinct areas of trackout can be measured to determine if, in total, 25 feet or more of trackout is present. If the facility has more than one exit, the trackout from each exit will be aggregated to determine if more than 25 cumulative linear feet of trackout is present. For example, if Exit 1 has 10 feet of trackout and Exit 2 has 20 feet of trackout, then there is 30 feet of trackout and trackout at both exits must be removed immediately.

At the end of the business day, all trackout must be removed. If an inspector visits a site after working hours, the presence of any remaining trackout is a violation and will be cited.

Note: Under the right circumstances, even a small amount of trackout (less than 25 feet) could potentially result in an opacity violation if it is driven over or otherwise disturbed.

Helpful Hint

As a practical matter, it may be easier to clean up trackout immediately rather than measure it to ensure there is less than 25 feet of trackout present. The presence of trackout, however limited in extent, can trigger an inspection for other aspects of Rule 316 compliance.

Remember: Erosion is considered the same as trackout and must be managed and cleaned accordingly.

"Trackout is an obvious indicator of potential non-compliance. Taking the time to assess the presence and scope of trackout and whether immediate attention is required is an essential practice to maintain compliance."

—Air Quality Inspector

Helpful Hint

Plan ahead and anticipate that trackout will occur.

Trackout vs. Staining

Trackout is the presence of material deposited on a road surface. Trackout can become airborne particulate matter when vehicles pass over and entrain the material into the air. In contrast, staining on a road surface is not considered to be trackout (if it is not deposited on top but in the crevices of the road). While staining may indicate that trackout may have been present at some time in the past, staining itself is not considered trackout under Rule 316, nor is it a violation.

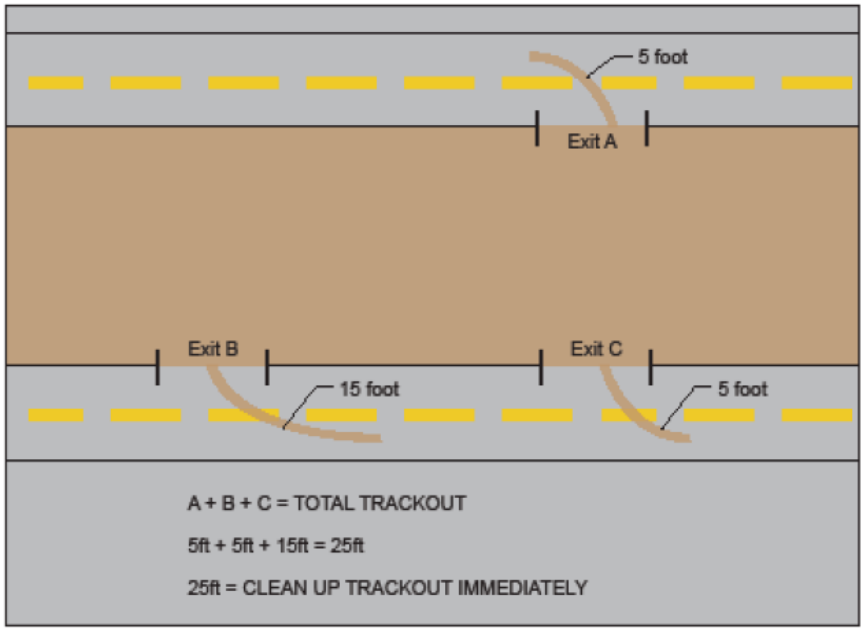
Street Sweepers

Sweepers purchased after June 8, 2005 must meet standards established in Rule 316. South Coast Air Quality Management Rule 1186 certified street sweepers must be used if purchased after this date. If the facility purchased sweepers prior to June 2005, those sweepers may continue to be used. Any new facility (permitted after June 8, 2005) must use South Coast Air Quality Management Rule 1186 certified street sweepers.

Trackout

Trackout

Staining



Calculating cumulative distance

Measuring Trackout

The distance of individual trackout paths originating from a permitted facility are combined to determine compliance. In the diagram on the left, the three trackout paths cumulatively total 25 feet.

When trackout reaches a cumulative distance of 25 feet it must be cleaned up immediately.

Trackout is measured from an exit onto a paved surface and along the path of trackout to the point where it ends. This may follow the actual curved path of trackout or the horizontal distance may be used instead (especially where traffic/safety is a concern). Line C on the diagram below is an example.

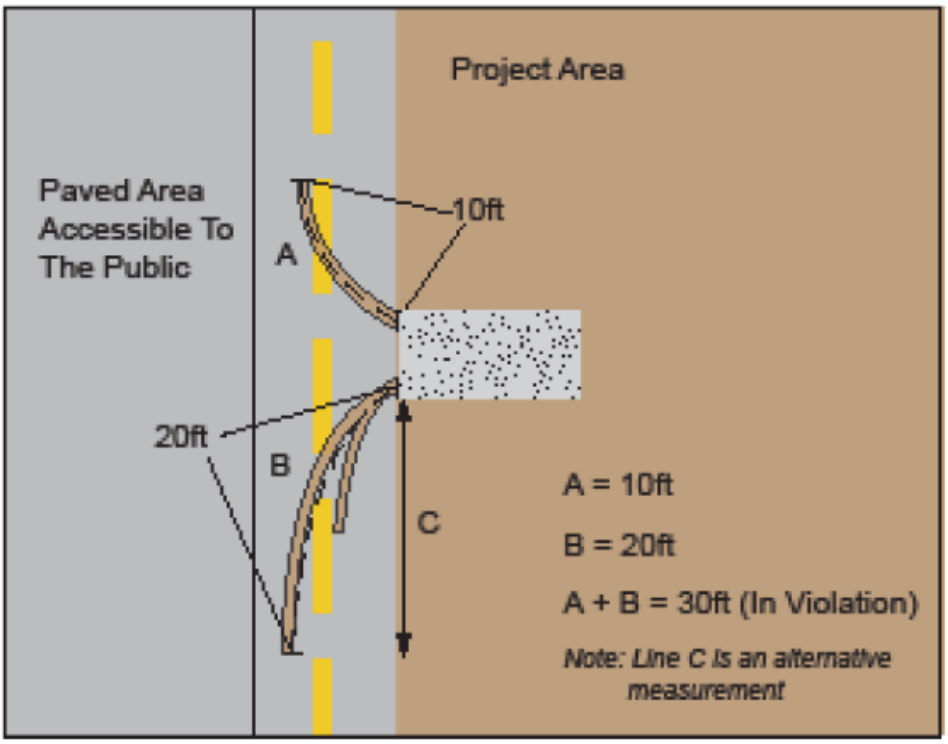
Trackout on sidewalks and gutters are included in determining the total amount of trackout present.

The diagram on the right shows trackout extending from the exit of a permitted facility. The gray rectangle represents a gravel pad.

Trackout can be measured using a surveyor's wheel or a range finder, or by pacing.

On busy streets, the inspector may measure the distance along a line adjacent to the road (represented by line C) to determine trackout length.

In both examples on this page, trackout has reached or exceeded 25 feet in cumulative distance and must be cleaned immediately.



Measuring trackout

Trackout Controls

The trackout control requirements vary depending on whether the facility is temporary or permanent, and whether a minimum of 60 aggregate trucks, mixer trucks, delivery trucks or batch trucks exit the facility on any given day.

A permanent facility is *any facility that remains in-place for 180 days or more in 12 consecutive months.*

Trackout Control Devices

Permanent Facilities with 60 or More Trucks Exiting On Any Day

Any permanent facility that has 60 or more trucks exiting onto paved areas accessible to the public on any given day is required to install a rumble grate and wheel washer at all facility exits:

- ✓ The rumble grate must be located within 10 feet of the wheel washer.
- ✓ The ruble grate and the wheel washer shall be at least 30 feet from the facility exit (if there is not adequate space to do this, describe the alternative location and placement in the Dust Control Plan).
- ✓ Aggregate trucks, mixer trucks, delivery trucks, and batch trucks shall exit the facility via the rumble grate first and then the wheel washer.
- ✓ A 5 mph sign must be posted by the rumble grate.
- ✓ Trucks must remain on paved roads between the rumble grate and wheel washer and the facility exit.

Helpful Hint

When exits are changed at the facility, you must update your Dust Control Plan and ensure your rumble grate complies with the size requirements of the rule.

Rumble Grate:

- A system that produces a vibration such that mud, dirt, and debris are shaken off the tires and the exterior surfaces of the vehicle.
- Minimum length = 20 feet in the direction of vehicle travel (or as long as the circumference of the largest tire exiting the facility).
- Minimum width = the full width of the exit
- Must consist of raised dividers (e.g. rails or pipes) that are at least 3 inches high and 4 inches wide.
- The distance between each divider shall measure at least 6 inches.
- Rumble grates installed before June 12, 2008 are grandfathered and do not have to meet the specified dimensions, unless they are moved or modified.
- If a facility with a grandfathered rumble grate receives two or more violations for trackout during any consecutive 24-month period, then the rumble grate shall be modified to meet these requirements.

Wheel Washer:

- A system that is capable of washing the entire circumference of each wheel of the vehicle.
- A vehicle wash and/or a cosmetic was may be substituted for a wheel washer, provided that the washer has at least 40 pounds per square inch water spray from the nozzle.
- The system must be operated such that visible deposits are removed from the entire circumference of each wheel.
- If a vehicle wash or a cosmetic wash is substituted for a wheel washer, there must be a water pressure gauge on-site to measure nozzle pressure.

Rumble Grate and Wheel Washer

Wheel Washer Exemptions

An exemption for a wheel washer may be obtained if the facility complies with any one of the following:

- The facility has all paved roads and meters aggregate or related materials directly to a ready-mix or hot mix asphalt truck (excepting returned products).
- The facility is less than 5 acres of land size and handles recycled asphalt and recycled concrete exclusively. In this case, a rumble grate *and* gravel pad must be used on all unpaved roads leading to exits onto a paved area accessible to the public.
- The facility has a minimum of ¼ mile of paved road from the rumble grate to an exit onto a paved road accessible to the public.
- The facility operates infrequently (no more than 52 days each year averaged over the past three years). In this case, a rumble grate *and* a gravel pad must be used. The gravel pad must be no more than 100 feet from the exit onto a paved area accessible to the public. Records indicating the days the facility operated must be maintained to qualify for this exemption.

Trackout Control Device Exemption

Trackout control devices (e.g. wheel washers, gravel pads, and rumble grates) are not required at a facility where the only possible fugitive dust release is generated from a process that is vented or controlled through an approved emission control system if all of the following controls are in place:

- A paved surface is installed and maintained on all internal travel, parking, and vehicle maneuvering areas.
- All emissions from processes that create dust are captured by an approved emission control system.
- All dry material storage silos are equipped with an overflow warning system/device and a pressure control system which prevents spillage during silo loading.
- All material from rail car bottom dumping is contained in areas where no vehicle use or maneuvering is permitted.
- All material transfer operations are conducted in a manner that prevents spillage of the material to the ground.

Gravel Pad:

- A layer of washed gravel, rock, or crushed rock which is at least one inch or larger in diameter and at least six inches deep.
- At least 30 feet wide and 50 feet long (or the length of the longest haul truck, whichever is greater).
- With a stabilizing mechanism (e.g. curbs) on the perimeter.
- That dislodges mud, dirt, and/or debris from the tires of motor vehicles and or haul trucks.

Portable Facilities and Facilities with Less Than 60 Trucks Exiting per Day

Permanent facilities with less than 60 trucks exiting every day and portable facilities that have traffic exiting onto paved areas accessible to the public are required to install a rumble grate or wheel washer or truck washer (or an alternative wash system) at all facility exits.

The rumble grate or wheel washer must be located at least 30 feet from the facility exit.

If there are unpaved surfaces between the rumble grates or wheel washers and the facility exit, a gravel pad must be installed and maintained. The gravel pad must cover the entire unpaved area starting from the rumble grate or wheel washer and ending at the facility exit.

Helpful Hint

Questions to ask yourself:

- ✓ Is a trackout control device in place and effective?
- ✓ Is the trackout control device properly maintained?
- ✓ Is trackout adequately monitored?
- ✓ Is trackout cleaned immediately if it equals or exceeds 25’ cumulative linear feet?
- ✓ Is all trackout cleaned at the end of the day?

Section 6 - Process Standards

The purpose of Rule 316 is to minimize emissions from nonmetallic mineral processing and related operations. Most opacity and emission control standards are organized in Rule 316 by process type; e.g. crushing and screening, asphalt production, and raw material storage. Others standards are specific to fugitive dust generated within the facility itself.

Definitions:

Stack Emissions – Emissions that are released to the atmosphere from capture system through a building vent, stack or other point source discharge, including particulate matter or other emissions which have the potential to become particulate matter when released into the atmosphere and combined with other emissions from the same source.

Fugitive Dust Emission – Particulate matter not collected by a capture system that is entrained in the ambient air and is caused from human and/or natural activities.

Wet Material Processing Operation – Wet screening operations and subsequent screening operations that process saturated material up to the next crusher, grinding mill, or storage bin in the production line.

Emission Limits for Crushing and Screening Operations

EMISSION SOURCE	OPACITY LIMITS: At a facility that commenced construction, modification, or reconstruction	
	Before April 22, 2008	On or after April 22, 2008
(1) Any transfer point on a conveying system	7%	7%
(2) Any crusher	15%	12%
(3) Truck dumping directly into any screening operation, feed hopper, or crusher	20%	20%
(4) Any other affected operation or process source	10%	7%

In addition to the opacity limits, stack emissions from crushing and screening operations cannot exceed 0.014 gr/dscf.

Controls for Crushing and Screening Operations

Wet Material Processing

Moisture from water that is applied early in processing (e.g., at a wash plant) or already present in saturated materials at the initial point in the process can be an effective compliance tool for transfer points downstream in the process:

> "Carryover of water sprayed at affected facilities upstream in the process line is often sufficient to control fugitive emissions from affected facilities downstream in the process" (EPA, Preamble to Standards of Performance for Nonmetallic Mineral Processing Plants, 74 FR 19298).

This "water carryover" can prevent visible emissions and meet the soil moisture content requirements established in Rule 316. When water carryover is present, additional water application may not be necessary. If the material remains in a storage pile before entering the process line, additional water application is required.

Watering systems are not required to be installed on wet material processing operations, including wash plants and operations that process saturated material from below the water table. It is important to note that wet material processing operations end when crushing or grinding of the material occurs. The control and testing requirements will apply once the material has been processed through a crusher.

Definition:

Saturated Material – Mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators, and belt conveyors. Material that is wetted solely by wet suppression systems is not considered "saturated" for the purpose of this rule.

Material Processing

The following controls are required for all crushing and screening operations (excluding wet material processing operations):

- Enclose the sides of all shaker screens
  - The areas of the shaker screen where belt conveyors enter and exit do not need to be enclosed (and often cannot be due to MSHA requirements or the configuration of the conveyors). Emissions from these locations are instead controlled by water sprays.
- Permanently mount watering systems on:
  - The inlet and outlet of all crushers
  - The outlet of all shaker screens
  - The outlet of all material transfer points

Helpful Hint

When a transfer point is located within a surge tunnel, the watering system can either be mounted at the material transfer point or at the exit of the surge tunnel.

Watering system

- Operate watering systems to maintain the required minimum moisture content:
  - All points in a process line directly feeding a hot mix asphalt plant
    - Washed products – 2%
    - Unwashed products – 2.5%
  - All other points in a process line – 4%
- Conduct soil moisture testing to show that required moisture is being met
- Maintain watering systems in good operating condition
  - Inspect daily when process equipment is operating
  - Investigate and correct any problems before resuming operations

Watering system

Helpful Hint

If the regulated process is enclosed and emissions from the process are vented to a properly sized fabric filter baghouse, then watering systems and soil moisture testing are not required.

A facility can request a reduced minimum moisture content by submitting an explanation with its permit application. Prior approval from the MCAQD and EPA is required before the reduced moisture content standard can be implemented. The explanation needs to include an update to the Dust Control Plan that shows where the alternative moisture content is requested. Justification of why the lowered soil moisture content is being requested is required; reasons could include economics, emissions, water availability, technical feasibility, etc. Even though a request for reduced minimum moisture content has been submitted, a facility may not operate at the lower moisture level until specifically approved by the Control Officer.

It is important that the watering systems are able to function at any time. Check the watering systems every day that the crushing and screening operation is active to ensure the systems are functioning and note the observations in the Dust Control Plan records. If the watering systems are not functioning, or if the moisture content is lower than the applicable standard, immediately correct any problems before continuing and/or resuming operations.

Soil Moisture Testing

When properly applied, water serves as an excellent control method to minimize visible emissions. However, if not appropriately controlled, crushers, screens, and associated material transfer points can be a significant source of emissions.

To show that the material running through the process is at the applicable minimum moisture content, soil moisture testing is required. To complete soil moisture testing, first determine

how often and where samples will be collected, then collect and analyze the samples, and lastly record the results. The testing requirement is equipment specific. Accordingly, if a facility has three process lines, and only two operate on a given day, testing is required for only those process lines that are actually operating. Soil moisture testing is not required for the portions of a processing operation that meet the definition of a wet material processing operation.

Helpful Hint

Round soil moisture test results so that the final result contains the same number of significant figures as the applicable standard.

If the standard is 2% or 4%, round the result to the nearest whole number. If the standard is 2.5%, round the result to the nearest 0.1%.

If the digit to be rounded is greater than or equal to 5, round up.

If the digit to be rounded is less than 5, round down.

Examples:
- 1.4% ≈ 1%
- 1.5% ≈ 2%
- 3.4% ≈ 3%
- 3.5% ≈ 4%
- 2.44% ≈ 2.4%
- 2.45% ≈ 2.5%

Frequency

- Moisture testing is required twice daily if the facility is required to have a Fugitive Dust Control Technician (i.e. has a rated capacity of 25 tons or more of material per hour or has five acres or more disturbed land)
  - The first sample needs be collected within one hour of startup.
  - The second sample needs to be collected at 3:00 p.m. or within one hour prior to daily shutdown.
  - If crushing and screening operations continue for more than 16 hours, a third sample needs to be collected (such that samples are collected at least once in every 8-hour period).

Helpful Hint

When a facility is operated for less than two hours, a single test can be used to meet the requirement to test within one hour of startup and shutdown.

- Moisture testing is required once daily if the facility is not required to have a Fugitive Dust Control Technician (has a rated capacity of less than 25 tons of material per hour or has less than five acres disturbed land)
  - The sample needs to be collected within one hour of startup.

Reducing Testing Frequency
In order to ease the burden of soil moisture testing, the MCAQD has created ways to reduce the frequency at which soil moisture testing must occur. The testing frequency can be reduced once a facility demonstrates compliance with the applicable soil moisture standards for a minimum of 20 consecutive samples. Once this occurs, testing is only required weekly. If the facility is required to perform testing twice daily, when the frequency is reduced, a test will be required twice on a single day, once a week. However, in the event the facility does not meet opacity limitations or has two consecutive soil moisture tests below the applicable soil moisture standard, then sampling and testing of material must be conducted daily or twice daily.

Helpful Hint

Neither notice to nor prior approval from the MCAQD is required to switch to weekly sampling, however it is important to maintain records that demonstrate the facility was eligible to make the switch.

Required Sampling Locations
Soil moisture testing is only required on material that is less than 0.25 inch in diameter (¼-inch minus), including sand.

Samples must be collected from the following points:

- At the beginning of the process line from feed entering the line.
- At a point between the initial shaker screen and the final stack point.
- From each stacker point or stacker conveyor.

A facility may submit a written request to conduct soil moisture sampling at points other than those listed above. If samples cannot be collected because of safety or other issues, an alternative location must be proposed. Prior approval is required before implementing any such change.

Reducing the Number of Sampling Points
A facility can request to reduce the number of sampling locations by submitting a Dust Control Plan

revision. The revised Dust Control Plan must demonstrate that the proposed alternative soil moisture testing plan will be equivalent in determining compliance with the soil moisture content requirements. Prior approval is required before implementing any such change.

Testing Methods
Moisture testing must be conducted in accordance with ASTM C566-97, except that smaller samples may be used.

As an alternative to ASTM C566-97, a facility may submit a written request to use a Speedy Moisture Meter. The request shall include:

- A description of the testing equipment, including the display range, maintenance requirements, and any limitations.
- A correlation analysis conducted by analyzing 20 samples using the Speedy Moisture Meter and ASTM C566-97. A separate analysis is required for each Speedy Moisture Meter and the serial number of the unit shall be specified.
- A description of calibration procedures that will be used on at least a biweekly basis (using at least 3 sampling points) to compare results from the Speedy Moisture Meter with results from ASTM C566-97.
- An agreement to revert to ASTM C566-97 if the results from the Speedy Moisture Meter do not correlate with ASTM C566-97.

A facility may request other alternative testing methods, however, prior approval by the MCAQD and EPA is required before alternative methods can be used.

Speedy Moisture Testing Equipment

Visible Emissions Testing for Crushing and Screening Operations

Performance testing requirements were added to the federal New Source Performance Standard for nonmetallic mineral processing plants in 2009. This is a visible emission test.

- Stationary plants are required to test if they have the capacity to process more than 25 tons of material per hour.
- Portable plants are required to test if they have the capacity to process more than 150 tons of material per hour.

Common clay plants and pumice plants with capacities of 10 tons per hour or less, and wet material processing operations are exempt from this standard.

Testing needs to be performed within 60 days of the permit issuance date or within 60 days after the new applicable equipment has achieved the capability to operate at its maximum production rate. An extension to test (up to 180 days) can be requested through the MCAQD, but it must be for good cause. If the initial performance test date falls during a seasonal shut down, then with approval from the MCAQD, the owner/operator may postpone the initial performance test until no later than 60 calendar days after resuming operation. Seasonal shut down is defined as a shutdown of an affected facility for a period of at least 45 consecutive days due to weather or seasonal market conditions.

To conduct the test, EPA Method 9 certification is required and notification of testing needs to be submitted to the MCAQD at least seven days prior to testing. The notification must include a process diagram indicating numbered test locations. Visible emission evaluations are required at all screens, crushers, transfer points, and if applicable all bucket elevators, bagging operations, and enclosed truck or railcar loading stations. Each point will need to be evaluated for five 6-minute periods (30 minutes total). The visible emission evaluation must be conducted from a minimum of 15 feet away from the emission point. Up to three emission points can be evaluated at one time if emission points are within a 70° viewing sector. If one of the three points equals or exceeds the applicable standard (see page 6-1), the observer must continue reading from just that single point.

Once the performance test is complete, the facility needs to submit written reports of the results, including points that were tested and opacity observations.

Asphaltic Concrete Plants

Emission Limits

Emissions from asphaltic concrete plants may not exceed the following limits:

- Stack emissions – when producing non-rubberized asphalt (comply with both limits):
  - o 5% opacity
  - o 0.04 gr/dscf
- Stack emissions – when producing rubberized asphalt (comply with both limits):
  - o 20% opacity
  - o 0.04 gr/dscf
- Fugitive emissions of blue smoke – 20% opacity
- Truck dumping directly into any feed hopper – 20% opacity
- Any other affected operation or process source – 10% opacity

Controls

Asphalt plant drum dryers must be controlled and vented to a fabric filter baghouse.

Helpful Hint

Crushers, shaker screens, and associated conveyors that are part of the asphaltic concrete plant must comply with the requirements for crushing and screening operations.

Performance Testing

Asphalt plants will be required to conduct performance testing to show that control devices (e.g. drum dryer baghouses) and combustion equipment (e.g. drum dryers) are operating correctly, so that emissions of particulate matter, nitrogen oxides, and carbon monoxide are below the applicable standards. Performance tests are conducted by a third party testing company and observed by Maricopa County Air Quality Department engineering staff. Helpful information regarding performance testing can be found on the MCAQD website:

www.maricopa.gov/2446

Testing must be conducted within 60 days of the permit issuance or within 60 days after startup of new applicable equipment (whichever occurs last). The deadline may be extended up to 180 days if a request is approved by the MCAQD.

Open Baghouse

Material Storage, Silo Loading, Concrete Plants, and Bagging Operations

Emission Limits

Emissions from material storage and silo loading operations, concrete plants, and bagging operations may not exceed the following limits:

- Stack emissions – 5% opacity
- Truck dumping directly into a feed hopper – 20% opacity
- Any other affected operation or process source – 10% opacity

Definitions:

Material Storage and Silo Loading Operations – Any combination of processes or equipment used for storing dry materials and/or loading dry materials into silos.

Dry material – Cement, fly ash, lime, and other pozzolan materials to which water or other liquids have not been added.

Overflow Warning System/Device – A properly functioning system or device that sends a signal indicating that the level of material in a silo is approaching or at maximum capacity. The system/device shall be designed to automatically stop silo filling operations, or alert the operator(s) to stop the loading operation, when the level of material in a silo is approaching or at maximum capacity.

Blue Smoke – A combination of hydrocarbons and particulate matter that is produced when asphalt is heated.

Controls

All dry material storage silos must have an operational overflow warning system/device.

Overflow Warning System

Cement silos must also have a pressure control system designed to shut-off cement silo filling processes and loading operations when pressures exceed the levels specified in the approved O&M Plan.

Dry material storage silos installed after June 8, 2005 must be equipped with a baghouse or equivalent device to meet a maximum outlet grain loading of 0.01 gr/dscf.

Fabric Filter Baghouse

Dry material storage silos installed after November 7, 2018 must also have a pressure control system designed to shut-off filling processes and loading operations when pressures exceed the levels specified in the approved O&M Plan.

Pressure Control System

Helpful Hint

Accumulated dry material on the exterior of a silo is an indicator that the required controls may not be properly installed, operated, and maintained.

Accumulated Dry Material on a Silo

Owners or operators of concrete plant loading stations must install and use a rubber fill tube, install and operate a water spray, or install and operate a baghouse, or enclose mixer loading stations so that no visible emissions occur.

Helpful Hint

Include all process emission control systems in your O&M Plan and update the O&M Plan whenever changes are made to ECS monitoring parameters or the ECS.

Keep records to document that the ECS is operated and maintained in accordance with the O&M Plan.

Section 7 – Fugitive Dust Emission Limitations

Opacity Limits

Fugitive dust emissions that are not associated with process equipment can never exceed 20% opacity. If visible emissions are observed coming from operations and areas located within the facility, the emissions must be evaluated and controls must be implemented. A facility should cease operations if emissions cannot be controlled.

Visible emissions can be observed and evaluated by the inspector from any vantage point, either from within the facility or from outside. Depending on the location of the emissions and the time of day, the inspector may conduct a Visible Emission Evaluation (VEE) to determine if the opacity is exceeding specified limits and to determine if controls are being effectively implemented.

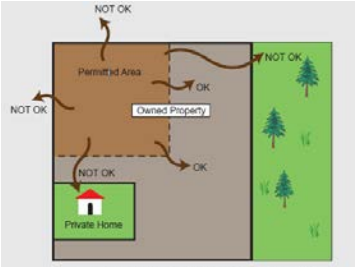
If at any time, 12 consecutive opacity readings averaged together exceed the applicable opacity limit, a violation could be issued. Steps to conducting VEE depend on the operation occurring and where the emissions are generated.

Definition:

Fugitive Dust Emission – Particulate matter not collected by a capture system that is entrained in the ambient air and is caused from human and/or natural activities.

Visible Emissions Beyond the Property Line

- ✓ Fugitive dust emissions originating from a facility must not be visible beyond the property line.
- ✓ The standard for visible emissions beyond the property line of an area covered by a permit is simple – none are allowed.



Keeping Opacity on Property

In the figure above, the brown area is the property on which the permitted facility is located. Surrounding this area is an area in gray that is owned by the permit holder. Visible emissions from the facility are allowed onto this adjacent area (gray) because the property is owned (or legally occupied) by the permit holder - the emissions do not cross a property line. Should the visible emissions extend onto the property designated as a private home or onto the forested area, the visible emissions are crossing a property line and are not allowed.

In the photo above, dust emissions are being generated but emissions are not visible beyond the property line (beyond the photo frame). Although the on-site emissions may not exceed the 20% opacity standard, no visible emissions are allowed to cross the property line.

In the photo above, dust emissions are clearly visible crossing the property line.

Helpful Hint

Submitting a clear and accurate map, including property boundaries, in your Dust Control Plan can help differentiate your property from others.

Emission Type	Examples	Reading Intervals
Fugitive Dust Emissions: Non-Continuous Plumes	Bulk Material Loading & Unloading	Two readings per activity: • First reading at 0 seconds • Second reading at 5 seconds
Fugitive Dust Emissions: Continuous Plumes	Grading or Trenching	Readings taken every 10 seconds
Stack Emissions	Baghouse or Scrubber	Readings taken every 15 seconds

Wind-Blown Dust (§ 306.3)

High wind conditions have the potential to dramatically degrade air quality and can lead to emissions even when appropriate controls are implemented.

The property line emission requirement and the 20% fugitive dust opacity standard do not apply to wind-blown dust if the emissions cannot be prevented by better application, operation, or maintenance of control measures. To demonstrate that the emission limits do not apply, the following actions must be taken:

- ✓ Implement fugitive dust control measures.
- ✓ Keep records of all dust control measures that are implemented.
- ✓ For active operations, apply water or dust suppressant to keep soil visibly moist or cease operations.
- ✓ For inactive storage piles, maintain a soil crust or cover.
- ✓ For inactive disturbed surface areas, apply gravel or dust suppressant, or maintain a soil crust.

Visible Emissions Originating from Adjacent Lands

Conditions may arise where winds will drive dust from one property (e.g., a vacant field) across another. Normally, visible emissions seen crossing the property line will constitute a violation. If visible emissions are created from a location outside of the permitted facility, it is important to document the occurrence in the facility's records and even photograph or record the occurrence. This way, if an opacity violation is issued or discussed by an inspector, the facility will have proper documentation to show the inspector and/or the Business Assistance Coordinator. If visible dust emissions are seen transiting a permitted area and no additional dust emissions were contributed from the permitted area, the permitted facility is not in violation of the property line opacity standard.

Helpful Hint

Sign up to receive alerts from the MCAQD's Rapid Response Notification System at:

www.maricopa.gov/1628

Weekly dust control forecasts are available on ADEQ's website at:

http://static.azdeq.gov/aqd/forecast/phoenix.htm

Wind driven dust crossing a road

Section 8 – Stabilization Standards

Fugitive dust emissions from unpaved areas are a significant source of particulate matter in Maricopa County. As a result, all permitted facilities are required to implement control measures to stabilize unpaved areas. The stabilization standards that apply to an unpaved area vary, depending on whether or not vehicle use occurs on the unpaved area.

Helpful Hint

Control measures must be applied in quantities that enable the facility to comply with both opacity and stabilization standards.

The MCAQD uses the test methods in Appendix C-Fugitive Dust Test Methods to determine if unpaved areas meet the stabilization standards. Test methods can also be used by the facility to determine if unpaved areas are in compliance with Rule 316. Each representative surface area will be assessed separately for stability.

Definitions:

Unpaved Road – Any road or equipment path that is not paved.

Unpaved Parking Lot – Any area that is not paved and that is designated for parking or storing motor vehicles and equipment in the Dust Control Plan or that is used for parking or storing motor vehicles and equipment.

Unpaved Roads, Parking Lots, and Staging Areas (§306.4 and §307.2)

For unpaved areas where there is evidence of vehicle or equipment use, stabilization is assessed using the Silt Loading/Silt Content Test Method. This test determines how much dust (particulate matter) could be entrained into the air because of vehicle use on an unpaved area (e.g. unpaved road, parking lot, or storage area). If the area is not visibly moist or if there is no visible soil crust, the inspector may collect soil samples and run them through a set of sieves to determine whether the unpaved surface is unstable.

For unpaved areas where vehicles or equipment operate, apply water or dust suppressant, or a layer of gravel that is at least 6 inches deep, to comply with the visible emission standard (20% opacity limit) and to comply with the following stabilization standards.

- ✓ Limit silt loading to less than 0.33 ounces/square foot.
- ✓ If silt loading is equal to or more than 0.33 ounces/square foot, limit silt content to no more than:
  - ✓ 6% on unpaved roads
  - ✓ 8% on unpaved parking lots and staging areas

Unstable unpaved road

All Other Areas (§306.5)

For areas where there is no evidence of vehicle use, stabilization is assessed using a series of tests that determine how much dust (particulate matter) will be entrained into the ambient air by wind.

- Soil Crust Determination (Drop Ball Test): This is test is used on disturbed surface areas to determine if a soil crust is present. If there is no soil moisture, the inspector may drop a small steel ball onto the surface. If the steel ball sinks into the surface or if the ball pulverizes the crust, the surface is unstable.
- Threshold Friction Velocity (TFV): This test is used on disturbed surface areas where there is no evidence of vehicle use. It determines how much dust (particulate matter) may get entrained into the air by wind action alone. If the area is not visibly moist and there is no visible soil crust, the inspector may collect soil samples and run them through a set of sieves to determine whether the area is unstable.

- Flat and Standing Vegetative Cover: These tests are rarely used at non-metallic mineral processing plants because vegetation is rarely present at these facilities. If vegetation were present, it could be used as a factor to determine stability. Vegetation can act as a shield when the wind blows, helping to reduce emissions.
- Rock Test Method: This test is used to determine what percentage of an unpaved area is covered by rocks and the wind-resistance effects of the rocks. When rocks, greater than 1 cm in size are present on an unpaved area they act as a shield when the wind blows. Rocks alone can be used as a stabilization method or they may be combined with other controls in order to meet stabilization standards.

For unpaved areas where no activities are occurring apply water or another control measure to comply with the visible emission standard (20% opacity limit) and comply with one of the following stabilization standards:

- ✓ Maintain a soil crust.
- ✓ Maintain a threshold friction velocity (TFV) of 100 cm/second or higher.
- ✓ Maintain a flat vegetative cover equal to at least 50%.
- ✓ Maintain a standing vegetative cover equal to or greater than 30%.
- ✓ Maintain a standing vegetative cover that is equal to or greater than 10% when the TFV is equal to or greater than 43 cm/second.
- ✓ Maintain a percent cover that is equal to or greater than 10% for non-erodible elements.
- ✓ Comply with an alternative test method approved by the Control Officer and the Administrator.

Unstable unpaved area

Section 9 - Fugitive Dust Control Measures

Open Storage Piles and Material Handling

Bulk materials encompass a wide array of materials including earth, rock, sand, gravel, soil, aggregate less than two inches in length or diameter, and demolition debris among many others. When handled, bulk materials are capable of producing fugitive dust emissions.

Prior to and while conducting loading, unloading, and excavating operations, spray material with water or other dust suppressant as necessary to comply with the 20% opacity standard.

Definitions:

Open Storage Pile – Any pile of bulk material with silt content of 5% or more, with a surface area greater than or equal to 150 square feet, and reaching a height of three feet (at any point). An open storage pile is presumed to have a silt content of 5% or more, however, a permit holder has the option to show that the silt content is less than 5% using ASTM C136-06.

Permanent Areas of a Facility – Areas that remain in place for 180 days or more in 12 consecutive months (e.g. exits, office areas, warehouses, etc.).

Managing Open Storage Piles

After an open storage pile has been created, when material is not being added or removed, use one of the following control measures:

- ✓ Apply sufficient water to maintain 1.5% soil moisture or to maintain a soil crust.
- ✓ Locate the storage pile in pit.
- ✓ Arrange storage piles so that larger diameter products are on the perimeter and act as barriers for piles that could create fugitive dust emissions.
- ✓ Construct and maintain wind barriers, storage silos, or a three-sided enclosure.
- ✓ Cover the storage pile with a tarp or similar material and ensure that the tarp or other material is sufficiently affixed to prevent its being dislodged by wind.

Helpful Hint

Control measures need to be implemented to meet stabilization and opacity standards. If storage piles are located in a pit and the wind causes the storage pile to create fugitive dust emissions greater than 20%, it would be necessary to implement a secondary control measure.

New Storage Pile Size and Location

New storage piles must be at least 25 feet from property line and no more than 45 feet tall.

If there is not adequate space to install the storage pile at least 25 feet from the property line, submit a Dust Control Plan revision showing where the new pile will be located and demonstrating the lack of adequate space. Following approval by the MCAQD, the storage pile can be located as described in the DCP.

Helpful Hint

Open storage piles are challenging to manage. Extra care needs to be taken to ensure that they are in compliance.

Unpaved Parking Lots, Staging Areas, and Areas Where Support Equipment and Vehicles Operate

In unpaved parking lots, staging areas, and areas where loaders, support equipment and vehicles operate, implement one of the following control measures:

- ✓ Apply and maintain water.
- ✓ Apply and maintain a dust suppressant.
- ✓ Apply and maintain a layer of washed gravel that is at least 6 inches deep.

Unpaved Haul and Access Roads

Whether marked or unmarked, an unpaved haul or access road is a road within a permitted facility that is used to move material, equipment, or people from one point to another.

The required control measures for unpaved haul/access roads vary, depending on whether or not the road is located in a permanent area of the facility.

Unpaved Roads - Not in Permanent Areas

If the road is not located in a permanent area of the facility, one

of the following control measures *must* be implemented:

- ✓ Limit vehicle speed (e.g., install speed control devices) and apply water.
- ✓ Install and maintain a paved surface.
- ✓ Apply and maintain a layer of washed gravel that is 6 inches deep.
- ✓ Apply and maintain a suitable dust suppressant other than water.
- ✓ Install and maintain a cohesive hard surface.

For new facilities, if none of the above measures can be technically or feasibly implemented, maintain a minimum distance of 25 feet between the property line and the unpaved haul/access road.

Helpful Hint

Things to watch for on haul and access roads:

- ✓ While signage is not required, it is helpful.
- ✓ The silt loading and silt content are within acceptable limits.
- ✓ The road is adequately stabilized.
- ✓ Visible emissions do not exceed 20% opacity.

Vehicle use in Permanent Areas

One of the following control measures must be implemented on permanent areas of the facility on which vehicles drive:

- ✓ Pave.
- ✓ Install a cohesive hard surface.

Definition:

Cohesive Hard Surface – One of the following materials applied and maintained as a roadway surface:

- Asphalt or concrete pavement
- Recycled asphalt mixed with a binder
- Continuous gravel cover which is at least 6 inches deep to which water is applied during the workday
- A dust suppressant other than water
- Another material applied and maintained in accordance with the DCP such that visible emissions are not produced by wind or motor vehicles.

On-Site Traffic

All on-site traffic must comply with the following requirements:

- ✓ All permanent areas of a facility where vehicles drive must be paved or a cohesive hard surface must be installed.
- ✓ All batch trucks and delivery trucks must remain on roads with paved or cohesive hard surfaces.
- ✓ All aggregate trucks must remain on roads with paved or cohesive hard surfaces, except when driving on roads leading to and from aggregate loading areas, as identified in the approved Dust Control Plan.
- ✓ All batch trucks and delivery trucks must use a trackout control device when exiting the facility.

Hauling and Transporting Bulk Materials

When hauling or transporting bulk materials off-site, all of the following controls must be implemented:

- ✓ The truck's load must be covered by a tarp.
- ✓ There must be at least 3 inches of freeboard.
- ✓ There can be no spillage of material through holes or seams in the container area.

When hauling or transporting bulk material within the facility, one of the following controls must be implemented:

- ✓ Limit the speed of the haul truck to less than 15 miles per hour.
- ✓ Apply water to the top of the load.
- ✓ Cover the load with a tarp.

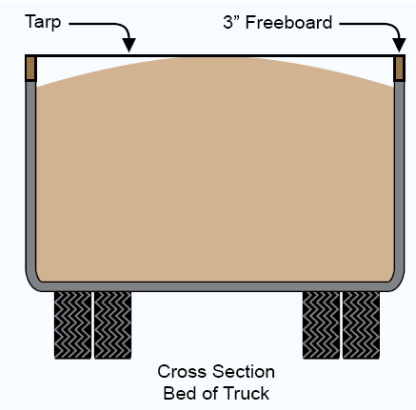
Helpful Hint

Sweep truck fenders, bumpers, aprons, etc., before leaving the facility to reduce the potential for spillage.

When hauling or transporting bulk materials within a facility and crossing or accessing an area accessible to the public, all of the following controls must be implemented:

- ✓ The truck's load must be covered by a tarp.
- ✓ There must be at least 3 inches of freeboard.
- ✓ There can be no spillage of material through holes or seams in the container area.

Haul Truck Load Cross Section: Proper Loading



Internal Paved Roads

Paved roads within a facility must be cleaned on a regular basis to minimize fugitive dust emissions. The frequency at which paved roads must be cleaned is based on the number of aggregate trucks, mixer trucks, delivery trucks or batch trucks exiting the facility on any given day.

Facilities with less than 60 aggregate, mixer, delivery or batch trucks exiting daily must sweep internal paved roads *at the end of every other work day* if dirt or bulk material extends a cumulative distance of 12 linear feet or more on any paved road.

On days that the roads are not swept, if bulk material extends more than 12 linear feet on any paved road, the bulk material must be removed by the end of the work day.

Facilities with more than 60 aggregate, mixer, delivery or batch trucks exiting on any day must sweep internal paved roads *at the end of every production work shift*, whenever there is evidence of dirt or bulk material extending a cumulative distance of 12 linear feet on any paved road. Sweeping is required every eight hours (if there is more than 12 cumulative linear feet of bulk material present on paved roads at the end of the 8 hour work shift).

Spillage

Spillage is any material that spills or falls from vehicles or process equipment. This includes material from loaders and haul trucks, material spilled from process equipment (e.g. crushing and screening operations), and any material spilled during material transfer operations.

Once spillage is observed, apply water or another dust suppressant to stabilize the material. All spillage must be cleaned at the end of each work day.

Helpful Hint

Use your Dust Control Plan to develop and implement best practices to manage spillage.

Weed Abatement by Discing or Blading

Sometimes it may be necessary to remove weeds from portions of a permitted facility. If mechanized equipment is used to remove weeds by digging into or scraping the ground, all of the following control measures must be implemented:

- ✓ Apply water before weed abatement occurs.
- ✓ Apply water while weed abatement is occurring.
- ✓ After weed abatement, stabilize the area by using water, dust suppressant, gravel, vegetation, or by paving.

Demolition

Demolition of equipment and structures can cause emissions of dust (particulate matter). To control fugitive dust emissions:

- ✓ Apply water to demolition debris immediately following demolition activity.
- ✓ After demolition activity, apply water to all soil surfaces to establish a soil crust.

Helpful Hint

Demolition operations may also cause emissions of asbestos, a hazardous air pollutant which is known to cause cancer. Facilities must take care to comply with Rule 370 and 40 CFR 63 Subpart M, the National Emission Standard for Hazardous Air Pollutants (NESHAP). Additional information on the asbestos regulations is available by contacting Business Assistance at (602) 506-5102.

Other Dust-Generating Operations

Other dust generating operations, such as overburden removal, grading, or trenching may be conducted at facilities subject to Rule 316. The following control measures should be used to minimize fugitive dust emissions from any dust-generating operation that is not specifically regulated by another section in Rule 316.

Before disturbed surface areas are created, implement one of the following:

- ✓ Pre-water and allow time for the water to penetrate.
- ✓ Phase work to reduce the amount of disturbed area.

While disturbed surface areas are created, implement one of the following:

- ✓ Apply water or dust suppressant to keep the soil visibly moist.
- ✓ Apply water to maintain 12% soil moisture.
- ✓ Apply water and construct fences or wind barriers adjacent to roadways and urban areas.

When a dust-generating operation is finished for 30 days (or longer), one of the following controls must be implemented within 10 days after completion of the dust-generating operation:

- ✓ Pave, apply gravel, or a dust suppressant.
- ✓ Establish vegetative ground cover.
- ✓ Apply water and prevent access by fences, ditches, vegetation, berms, or other suitable barrier to prevent vehicle access.
- ✓ Restore the area so that vegetation and soil characteristics are similar to native conditions.

Helpful Hint

A perimeter fence may effectively prevent vehicle access when a dust-generating operation is finished for 30 days or longer.

Soil Moisture

If water is chosen as a control measure in an approved dust control plan, the facility must operate a water application system while conducting operations that have the potential to generate fugitive dust.

Helpful Hint

If controls listed in Rule 316 are not feasible for a facility, they may request the ability to implement alternative control measures. The request must include what the alternative measure is, what it is replacing, and a statement/report demonstrating that measures would result in equivalent or better emission control than the measure stated in the rule.

Alternative control measures have to be approved by the Control Officer and the Administrator and cannot be implemented until they are approved. Once approved, updates to the Dust Control Plan must occur.

Section 10- Portable Sources

A source that is capable of being transported and operated in more than one county of this state is considered a portable source. Many facilities subject to Rule 316 are portable sources that can move from location to location.

Permitting Authority: ADEQ or MCAQD?

Portable sources that operate exclusively in Maricopa County must obtain a permit from the MCAQD. Portable sources that operate in Maricopa County and other counties must obtain permit coverage from ADEQ. When a source operating under an ADEQ permit remains in Maricopa County for five years or longer, a MCAQD permit will be required.

Information on ADEQ's permitting process, including its general permits, is available at:

http://azdeq.gov/environ/air/permits/class.html#general

Helpful Hint

A portable source operating under a permit from ADEQ must comply with Rule 316 and the requirements of their ADEQ permit, while operating in Maricopa County.

Portable Source Requirements

Before a portable source begins operations at a new location, the following requirements must be met:

- ✓ Submit move notice and Dust Control Plan.
- ✓ Update Dust Control Plan. NOTE: Requests for approvals of alternative moisture content or reduced sampling points must be resubmitted.
- ✓ Post a facility information sign.
- ✓ Install any required trackout control device(s).
- ✓ Install all required emission control systems and fugitive dust controls, including water sprays.

In addition, scheduling a courtesy visit is recommended to ensure that operations at the new location comply fully with Rule 316.

Helpful Hint

When a portable crushing and screening operation is moved, the facility must resume daily or twice daily soil moisture testing (depending on the rated capacity of the processing equipment). The facility must document compliance with the applicable soil moisture standards by conducting 20 consecutive soil moisture tests at the new location before soil moisture testing frequency can be reduced.

Section 11 - Inspections

Routine Inspections

The MCAQD conducts five routine inspections (one full compliance inspection and four partial inspections) per year at facilities that are regulated under Rule 316.

Additional, non-routine inspections will occur if the MCAQD receives a complaint about a facility.

Routine inspections are conducted during facility business hours. If the inspector arrives after business hours or when the site is shutting down for the day, the facility representative may request that the inspection be postponed. Normally, this request will be honored unless the inspector has reason to believe that the inspection must be completed immediately.

"Tell-tales"

All nonmetallic mineral processing plants and related operations are expected to be fully compliant with Rule 316 at all times. While inspectors are assigned to conduct specific inspections, they may, in the course of their duties, drive by and observe facilities that exhibit "tell-tale" signs of potential non-compliance (e.g., the presence of trackout or dust emissions). These signs suggest to the inspector that his or her normal schedule should be modified to more closely investigate the possible non-compliance. Paying attention to these indicators of potential non-compliance is important. Identifying problems early and correcting them is "key" to avoiding violations and the penalties associated with them.

Specific "Tell-tale" Warning Signs

- ✓ Trackout on paved areas or roads accessible to the public.
- ✓ Visible emissions of dust.
- ✓ A messy jobsite.
- ✓ Disorganized traffic patterns.
- ✓ Lack of an obvious source of water.
- ✓ Ongoing hauling operations.
- ✓ Untarped trucks exiting a site.
- ✓ Lack of a facility information sign or a sign that is missing required information.

Poorly maintained gravel pad

Helpful Hint

Stay and wait until the inspector has completed the inspection to receive a verbal report of their observations. You may be able to clarify the inspector's observations and gain useful information.

Inadequate trackout control

Tarping violation

Helpful Hint

Conducting self-inspections is a great way to ensure your facility will be in compliance when the inspector visits.

Inspection Rights

As a prelude to an inspection, the Inspector will present a copy of the Notice of Inspection Rights and ask that the facility representative sign the document acknowledging that they were informed of their rights. The Notice of Inspection Rights form includes a statement noting that the MCAQD's Business Assistance Coordinator can be contacted to dispute the inspection findings. To dispute an Opportunity to Correct (OTC) or a Notice of Violation (NOV), a request for an Enforcement Case Review must be made within ten days following receipt of the Inspection Report - Violation.

The inspection rights are:

1) The Maricopa County Air Quality Department (hereinafter "department") representative(s) identified above was/ were present at the above regulated site at the above listed date and time. Upon entry to the premises, the department representative(s) met with me, presented photo identification indicating that they are a department employee(s) and explained that:

   *The purpose of this inspection is:

   - ☐ To determine compliance with Arizona Revised Statutes (A.R.S. Title 49, Chapter 3, Article 3) and/or Maricopa County Air Pollution Control Regulations.
   - ☐ To determine compliance with an Air Quality Permit issued pursuant to A.R.S. § 49-480, and Maricopa County Regulations Rule 100, Section 105.
   - ☐ To determine compliance with an administrative or judicial order issued pursuant A.R.S. § 49-491, § 49-511, § 49-512.

   *This inspection is being conducted pursuant to A.R.S. § 49-473, § 49-474, § 49-488, and/or the inspection and entry provisions in an Air Quality Permit or conditional order. There are no direct fees for this inspection.

2) I understand that I can accompany the department representative(s) on the premises, except during confidential interviews.

3) I understand that each person interviewed during the inspection will be informed that their statements may be included in the inspection report.

   - ☐ Participation in an interview is voluntary, unless the person is legally compelled to participate.
   - ☐ A person is allowed 24 hours to review and revise a written statement that is drafted by the inspector and requires the person's signature.
   - ☐ An agency inspector may not prohibit the regulated person from having an attorney or other experts in their field present during the interview to represent or advise the regulated person.

4) The inspector may not take any adverse action, treat a person less favorably or draw any inference based on the regulated person's decision to be represented by an attorney or be advised by any other experts in the field.

5) Any trade secrets and proprietary or confidential information, identified by the regulated source as such (must be submitted to the department in writing), contained in the documents provided to the inspector may be redacted before becoming public information.

6) I understand that each person whose conversation will be tape-recorded during the inspection will be informed that the conversation is being tape-recorded.

7) I understand that I have the right to copies of any original document(s) taken during the inspection, and that the department will provide copies of those documents at the department's expense.

8) Potential civil actions for violations cited as a result of this inspection are not subject to an applicable statute of limitation.

9) I understand that I have the right to request copies of any documents that will be relied upon to determine compliance with licensure or regulatory requirements, if the agency is permitted by law to release such documents. Instructions for requesting records are available at www.maricopa.gov/1590.

10) I understand that I have a right to a split of any sample(s) taken during the inspection, if the split of the sample(s) would not prohibit an analysis from being conducted or render an analysis inconclusive.

11) I understand that I have the right to copies of any analysis performed on sample(s) taken during the inspection and that the department would provide copies of this analysis at the department's expense.

12) I understand that if an administrative order is issued or a permit decision is made based on the results of the inspection, I have the right to appeal that administrative order or permit decision. I understand that my administrative hearing rights are set forth in A.R.S. § 49-482, § 49-498 et seq. and Maricopa County Air Pollution Control Regulation IV, Rule 400. If I have any questions concerning my rights to appeal an administrative order or permit decision, I may contact the department Business Assistance Coordinator at 602-506-5102.

13) I understand that the issuance of an Opportunity to Correct or a Notice of Violation is not appealable. I understand that if I have any questions or concerns about this inspection, or I wish to dispute the inspection findings, I may contact the department Business Assistance Coordinator at 602-506-5102.

14) If a Notice of Violation is issued, I understand that I may check its status at www.maricopa.gov/2188.

15) I understand that audit reports may be subject to privilege under A.R.S. § 49-1402. The department may refuse to accept reports for which privilege is claimed.

16) Your feedback is essential in helping us achieve outstanding customer service, so please tell us what we do well and what needs improvement by completing a Feedback Form located at www.maricopa.gov/aq under "Customer Service Feedback."

17) While I have the right to decline to sign this form, the department representative(s) may still proceed with the inspection/investigation.

Helpful Hint

To check the status of a Notice of Violation, go to www.maricopa.gov/2188.

An Inspection Begins

Helpful Hint

While inspectors may offer constructive operational suggestions, you should confer with your technical staff or consultant to determine your actions. An inspector cannot order you to take action or direct your operations in any way.

What Do Inspectors Look For?

An inspection can be a nerve-wracking experience or a validation of the good on-site control practices being employed. When an inspector arrives, you can be reasonably sure several areas will be asked about. The brief list below highlights key points that an inspector will be reviewing.

The Permit

Is the permit on-site and accessible? Has it expired? Does it cover all equipment in use at the facility?

Completed Records

Records should be clear and meet the basic requirements.

Are copies of moisture test records on-site?

The Approved Dust Control Plan

Is the Dust Control Plan on-site? Are the selected control measures being used?

The Operations and Maintenance Plan

Is the O&M Plan on-site? Is it being followed?

Impacts on Sensitive Groups

Is a hospital, school, or senior residential area nearby? Is there the potential for sensitive groups to be exposed to dust from disturbed areas?

Water Sprays

For all applicable process equipment that are in operation, are water sprays installed and in use?

Helpful Hint

Make someone in your organization accountable for the environmental program. One person being responsible ensures accountability, provides focus, creates consistency, helps compliance, and reduces costs. This person should be able to give direction, arrange and track required training.

Site Conditions

A quick visual survey of your facility each day can tell you a lot about whether you are in compliance.

- Is there any visible trackout?
- Does trackout extend beyond 25 feet in cumulative distance?
- Is someone engaged in cleaning up trackout?
- Have disturbed areas been adequately stabilized?
- Does signage contain the required elements?

The Dust Control Plan is an enforceable document. If control measures selected in the Dust Control Plan are not being used, a Notice of Violation can be issued.

- Are contingency control measures listed in the Dust Control Plan being used when the primary control measures are ineffective?

Inactive Operations

Facilities may become inactive for a wide variety of reasons. Before conducting any routine inspection, the inspector will conduct a file review (examples of relevant records include written correspondence from the permit holder, prior inspection records, and annual emission inventories) to determine whether the facility might be inactive. If the inspector believes the site may be inactive, the inspector will call the facility representative to determine whether operations have restarted. If records indicate that operations have not restarted, the inspector and the facility representative will schedule a mutually-acceptable time for the inspection. If operations have restarted, the date and time of the inspection will be unannounced.

Courtesy Visits

The MCAQD's Business Assistance Coordinator is available to provide guidance to help facilities better understand their regulatory obligations. Courtesy visits may be scheduled through the business assistance office. A

courtesy visit's focus is educational and is encouraged to be scheduled soon after a permit is issued or modified.

- ✓ By taking advantage of a courtesy visit, it is easier to plan ahead to ensure that activities will be in compliance.
- ✓ A request for a courtesy visit should be scheduled well in advance.

Helpful Hint

To arrange a courtesy visit, call the business assistance office at (602) 506-5102.

Section 12 - Enforcement

Enforcement

When an inspector finds a condition that is non-compliant, the inspector has a duty to issue either an Opportunity to Correct (OTC) or a Notice of Violation (NOV). Both the OTC and NOV represent documentation of a violation – the difference is that an OTC will not result in the MCAQD seeking a monetary penalty. Additionally, with one exception, an Opportunity to Correct is not considered in subsequent enforcement matters as a factor in determining a penalty. However, when the specific violation for which an OTC was issued is repeated, the earlier OTC will be considered.

The Opportunity to Correct is issued for only certain types of non-compliance and under certain conditions. The Opportunity to Correct Policy describes this in detail and can be reviewed at www.maricopa.gov/DocumentCenter/View/7522.

An inspector has only a limited amount of discretion to issue an Opportunity to Correct. To be eligible for an OTC, the violation observed must meet the criteria established in the policy to classify the violation as being "minor."

Helpful Hint

After an Opportunity to Correct or Notice of Violation is issued, the inspector will conduct a "disposition inspection" to ensure that the violation has been corrected. This will often take place the day after the initial observation of the violation.

If the violation for which an OTC was issued is not corrected within a short window of time (identified by the inspector) a Notice of Violation will be issued.

Each recipient of an OTC or NOV has the opportunity to request an enforcement case review. If the recipient does not request a review within 10 days after receipt of the inspection report, or if the Business Assistance Coordinator has affirmed the NOV, the NOV will be referred to the MCAQD's enforcement unit. The enforcement officer will review the case and calculate the penalty. The inspector is not involved in determining the penalty offer. Penalties are calculated using the MCAQD's Violation Penalty Policy which can be reviewed on the MCAQD website at www.maricopa.gov/DocumentCenter/View/7531.

Once a penalty amount is determined, the NOV recipient is presented with an Order of Abatement by Consent (OAC). The NOV recipient has the option of engaging in a discussion with the MCAQD's enforcement unit to reach an agreed-upon penalty. If no agreement can be reached, the case is referred to the Maricopa County Attorney's Office where a penalty will be pursued through court action. A permit holder has the right to legal representation at any point during the enforcement process.

Most of the enforcement actions taken by the MCAQD result in an Order of Abatement by Consent, a document that outlines the alleged violations and the penalty that is agreed upon between the MCAQD and the respondent. The Order of Abatement by Consent may also contain additional provisions necessary to achieving compliance, such as obtaining a permit or paying outstanding fees.

In the event the recipient of the enforcement action declines to accept a penalty offer, the MCAQD will refer the matter to the County Attorney's office with a request to file a civil action in Maricopa County Superior Court. The MCAQD may also consider filing a case in Maricopa County Justice Court.

In some cases, the MCAQD may issue an Order of Abatement. This is a unilateral order requiring compliance with the terms contained in the order. When an Order of Abatement is issued, the respondent has the opportunity to request a hearing before the Air Pollution Control Hearing Board. This appeal must be filed in writing within 30 days of receipt of the Order. An appeal to the Air Pollution Control Hearing Board is also available following the issuance of a permit, a permit revision, or a conditional order.

Enforcement Case Review

The Business Assistance Coordinator is available to provide an independent review of an Opportunity to Correct, a Notice of Violation, or a penalty calculation. Generally, a request for an enforcement case review must be submitted within 10 days of receipt of an OTC or an NOV, or within 10 days after receipt of the MCAQD's final penalty offer letter.

Business Assistance Coordinator

(602) 506-5102
BusinessAssistance@mail.maricopa.gov

Administrative Hearings

In addition to an enforcement case review, any person receiving a final letter from the MCAQD offering to settle an enforcement action may request a hearing before an Air Pollution Hearing Officer. The Hearing Officer will take evidence and make findings of fact and conclusions of law that are then presented to the MCAQD's director as a recommendation for a final decision on a penalty offer.

A request for an enforcement case review of a final offer letter will not be considered a request for an administrative hearing. A separate request for an administrative hearing must be made to the attention of the Hearing Officer.

Public Record Requests

Requests for public records can be made by contacting the MCAQD's records management staff. All requests must be in writing and clearly state the records sought. If the records request is vague or broad in nature, records management may ask for further clarification or for the requester to be more specific about the records that are being requested.

Records can be requested online at www.maricopa.gov/1590.

Records may be requested using the Air Quality Public Records Request Form or by providing a written request with the following information:

- *Requester's first and last name*
- *Requester's business or company name if applicable*
- *Requester's address or business address*
- *Requester's phone number and fax number*
- *Record being requested (list business name, business address, and permit number if known)*
- *Purpose for the requested records*
- *Indicate if the records will be used for commercial or non-commercial purposes*
- *Indicate whether copies are being requested or if you wish to inspect the record in person. If printed copies are requested, the cost is $0.25/page.*

To Submit a Public Records Request:

By Fax
(602) 372-0997

By Email
requestrecords@mail.maricopa.gov

By Mail
Maricopa Air Quality Department
Attention: Records Management
3800 N Central Ave, Suite 1400
Phoenix, AZ 85012

In Person*
3800 N Central Ave, Suite 1400
Phoenix, AZ 85012

*Submitting a request in person does not guarantee that the MCAQD will have the resources immediately available to fulfill the request.

Section 13 - Test Methods

The MCAQD uses the test methods in this section to determine compliance with emission limits and stabilization standards.

Test Methods for Emissions

Grain Loading

EPA Reference Method 5 (40 CFR part 60, Appendix A) is used to determine compliance with the process emission limitations applicable to stack emissions from crushing and screening operations, asphalt plants, and dry material storage silos (installed after June 8, 2005).

Gaseous Emissions from Hot Mix Asphalt Plants

Once every five years, unless otherwise specified in the operating permit, hot mix asphalt plants must conduct tests to measure emissions of nitrogen oxides, sulfur oxides, carbon monoxide and volatile organic compounds using EPA Reference Methods. These tests must be conducted under representative operating conditions. The MCAQD has reviewed numerous tests conducted for rubberized asphalt and recycled asphalt and has determined that use of these materials does not have a significant effect on emissions. Therefore, separate tests for each operating scenario are not required.

Helpful Hint

In practice, the best way to minimize emissions is to optimize burner combustion and maintain equipment in good operating condition. In addition, follow your O&M Plan for any emission control systems.

Process Emissions

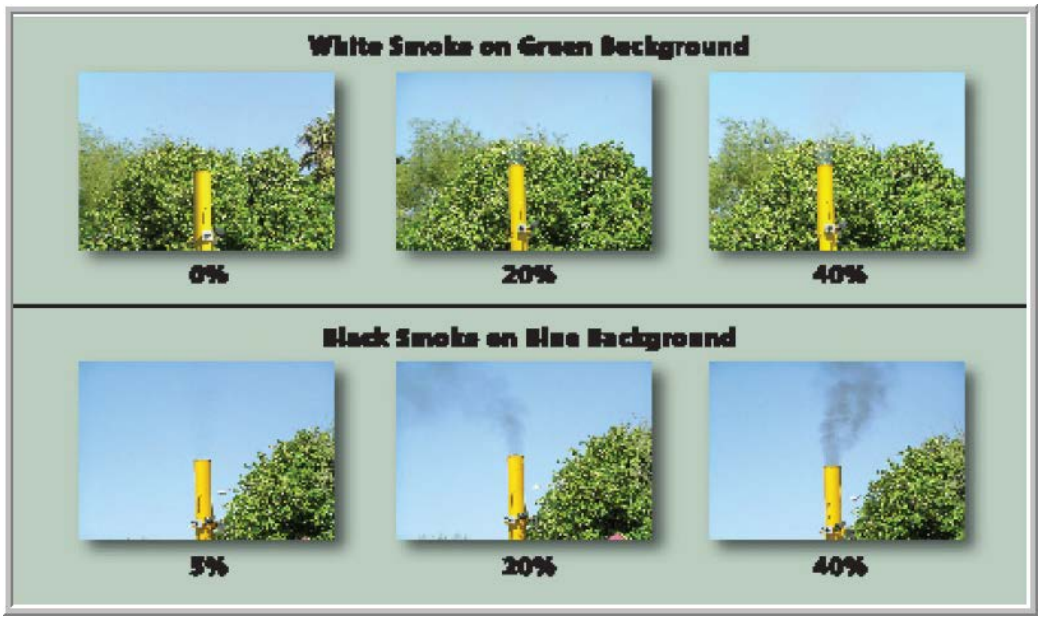
EPA Reference Method 203B must be used to determine compliance with the opacity standards for hot mix asphalt plants, crushing and screening operations, and concrete batch plants.

Fugitive Dust Emissions

The methods in Appendix C, Part 3 of the Maricopa County Air Pollution Control Regulations should be used to determine compliance with opacity standards for truck dumping and all non-process related fugitive dust emissions.

Method 9 certification is required to conduct these test methods. Information concerning "smoke school" is provided in Section 3 of this handbook.

There are several distinct protocols for determining opacity based on the type of operation or activity causing the emissions.



The above photos were taken during an ADEQ/ASU Smoke School held in Mesa, Arizona on March 26, 2008. The plumes of smoke were generated by a smoke machine that was calibrated on March 26, 2008 to meet EPA Method 9 standards for smoke generator machines used to certify candidates for EPA Method 9 Visible Emissions Evaluator.

Please note that the EPA Method 9 does not recognize these photographs as a substitute for determination of opacity by human vision. Photographs may vary from picture to picture and camera to camera due to a variety of physical conditions and camera operator variability. The photos should be used as guidance to assist student learning.

1. Non-continuous dust plumes (e.g. generated by bulk material loading/unloading, screening without conveyors, or trenching with backhoes) – This method averages 12 observations taken at 0 and 5 seconds for each event over a period not longer than one hour. As a practical matter, the 12 observations will most likely be completed within a few minutes.
2. Continuous dust plumes (e.g. plumes resulting from grading, trenching, blading, clearing, leveling and raking) – This method averages 12 consecutive observations made at 10 second intervals.
3. Visible emissions caused by vehicles or equipment on unpaved roads and unpaved parking lots – This method averages 12 consecutive observations taken at 0 and 5 seconds over a period not longer than one hour.

Test Methods for Soil Stabilization

Soil Crust Determination (The Drop Ball Test)

A simple test to determine if a soil crust is present is known as the drop ball test. A relatively small (15.9 mm) steel ball weighing between 0.56 and 0.6 ounces is dropped onto a 1-foot square area from a distance of 1 foot above the surface. The ball is dropped three times within this 1-foot square area.

If the observation of the dropped ball passes the test criteria two out of the three times the ball is dropped, the area is considered to have passed the test. The criteria for passing is for 1) the dropped ball not to have sunk into the surface such that it is partially or fully surrounded by loose grains of soil and, 2) when the ball is removed, the surface upon which it fell has not been pulverized so that loose grains of soil are visible.

Determination of Vegetative Cover

Appendix C, Sections 2.5 and 2.6 of Maricopa County's rules are used to determine flat and standing vegetative cover.

The details of these procedures are available for review at www.maricopa.gov/DocumentCenter/View/5306.

Does a failed drop ball test apply to the whole facility?

No. The existence of a sufficient crust (or the lack of a sufficient crust) covering one portion of a facility may not represent the existence of a crust on another portion of the facility. A failed drop ball test indicates that there was not sufficient soil crust in the area where the test was conducted. If the inspector determines that a portion of the facility is unstable, the inspector will measure the acreage of the unstable area and describe the location of the unstable area in their report.

Helpful Hint

The best test method is no test method! If a facility is visibly moist throughout, then an inspector knows immediately that any test method will pass, and therefore a test method is not needed.

As a practical matter, the first test is a common sense visual (eyeball) test.

Threshold Friction Velocity

Threshold Friction Velocity (TFV) estimates the wind velocity necessary to initiate soil erosion. A test can be readily performed in the field by an inspector to determine whether soil conditions are susceptible to dust entrainment. The TFV value is specified in Rule 316 and soils that do not meet this value are not stable and a condition of non-compliance exists.

By sorting a soil sample through a set of sieves, which allow soil particles of different sizes to pass through, a distribution of particle sizes in a soil sample can be determined. This distribution is then compared to a table contained in the test method that allows the determination of a TFV value. The standard contained in Rule 316 is to maintain soil conditions such that the TFV value is 100 cm/sec or greater.

For details on this test visit www.maricopa.gov/DocumentCenter/View/5306.

Rock Test Method

This test method examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than one cm in diameter that remain firmly in place, even on windy days. Typically, this includes rocks, stones, glass fragments, and hard-packed clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test is to estimate the percent cover of non-erodible elements on a given surface to see whether they take up enough space to offer protection to diminish the wind's ability to entrain dust (EPA Region 9 website).

The rock test method can be used independently to demonstrate stabilization, if the test indicates that more than 10% of the surface is protected by non-erodible elements. If the test indicates that more than 1%, but less than 10% of the surface is protected by non-erodible elements, the rock test method provides a correction factor that is used to increase the result of a Threshold Friction Velocity test.

For details on this test visit www.maricopa.gov/DocumentCenter/View/5306.

Silt Content/Silt Loading

This test method measures the amount of silt present on the surface of unpaved roads, parking lots, and other areas where vehicles and equipment operate.

This test is conducted by collecting and weighing a soil sample which is separated using a set of sieves. The material that passes through the sieves and into the collector pan is silt. At the end of the test, the amount of silt in the collector pan is weighed. Silt loading represents the amount of silt that can be entrained into the ambient air by vehicles driving on the surface. Silt content represents the portion of the total sample that is silt.

For details on this test visit www.maricopa.gov/DocumentCenter/View/5306.

Test Methods for Soil Compaction and Moisture

Determining soil moisture requires the use of a specific test procedure (ASTM D2216-05) that is done using an oven under laboratory conditions. This method requires several hours for proper drying of the sample.

Compaction is determined using ASTM D1557-02e1. Descriptions of the test methods are provided on the ASTM website and the full test methods are available through ASTM at www.astm.org.

Soil Testing

Section 14 - Other Applicable Requirements

New Source Performance Standards

EPA develops performance standards for new, modified, and reconstructed sources under its New Source Performance Standards (NSPS) program. Affected facilities at nonmetallic mineral processing plants and hot mix asphalt plants are subject to the NSPS in addition to Rule 316.

NSPS for Nonmetallic Mineral Processing

In 2018, the MCAQD updated the emission limits in Rule 316 to align with the emission limits from the New Source Performance Standards for Nonmetallic Mineral Processing (40 CFR 60 Subpart OOO).

In addition to emission limits, the NSPS requires affected facilities to comply with numerous testing, monitoring, recordkeeping, and reporting requirements. The NSPS is available online at:

https://www.gpo.gov/fdsys/pkg/CFR-2015-title40-vol7/pdf/CFR-2015-title40-vol7-part60-subpartOOO.pdf

NSPS for Hot Mix Asphalt Plants

The NSPS for hot mix asphalt plants imposes two emission standards:

1. PM limit of 0.04 gr/dscf
2. 20% opacity limit

The rule is available online at:
https://www.ecfr.gov/cgi-bin/text-idx?SID=6821c4f123c08d3bb2eaf3dab631b15d&mc=true&node=sp40.7.60.i&rgn=div6

NSPS and MACT for Generators

Generators in use at facilities subject to Rule 316 are also subject to Rule 324. In addition, many of these generators are also subject to NSPS or MACT (Maximum Achievable Control Technology) requirements. Diesel generators manufactured in model year 2007 or later, and diesel generators modified or reconstructed after July 11, 2005 must comply with NSPS Subpart IIII.

New spark ignition engines are subject to NSPS Subpart JJJJ. The applicability of this standard is based on the size and type of engine and the date of manufacture or construction.

Any engine that is not subject to one of the NSPS for engines is most likely subject to the MACT standard for stationary engines.

The requirements for engines are numerous and complex. For additional information, consult EPA's website at:

https://www.epa.gov/stationary-engines/compliance-requirements-stationary-engines

New Source Review

One of the Clean Air Act's significant tools to reduce emissions is the New Source Review (NSR) program. Under NSR, EPA prescribes stringent requirements for new or modified major sources of pollution.

Most sources subject to Rule 316 will not be considered major sources under the NSR rules. However, it is important to remember that minor sources are also subject to certain NSR requirements. Specifically, each state must ensure that its state implementation plan has procedures to determine whether construction or modification of a minor source or will interfere with attainment of National Ambient Air Quality Standards.

The MCAQD revised several permitting rules in November of 2016 to implement NSR.

> **Helpful Hint**
>
> Whenever more than one rule, regulation, or emission limit applies, the more stringent standard applies.

Section 15 - More Helpful Hints

More Helpful Hints

- ✓ Have any and all on-site personnel and subcontractors read and initial the approved Dust Control Plan and O&M Plan.
- ✓ Establish expectations for contractors, visitors, and other people entering the facility.
- ✓ Keep the facility organized and presentable.
- ✓ Prominently post rules for dust control.
- ✓ Restrict access to the facility.
- ✓ Conduct frequent dust control meetings.
- ✓ To better control trackout, one successful practice is to monitor exits at least every 30 minutes.
- ✓ Maintain records that provide a clear understanding of site operations—recordkeeping should be conducted in tandem with site operations and be used to help trigger corrective action. For example, an observation of trackout greater than 25 feet should be accompanied by notations of immediate action taken to control trackout.
- ✓ Be aware of sensitive areas that surround your facility—anticipate complaints and respond to all complaints.
- ✓ Restrict exits with fencing.
- ✓ Contact the Business Assistance office to request a courtesy visit.

Fenced Exits

Maintaining moist soil

Watered Haul Road

Section 16 – Resources

AP-42, Compilation of Air Pollutant Emission Factors

https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors#5thed

Arizona Air Quality State Implementation Plan

http://legacy.azdeq.gov/environ/air/plan/notmeet.html

Courtesy Visits

Call (602) 506-5102 or email BusinessAssistance@mail.maricopa.gov to request a courtesy visit.

Compliance Division Desk Duty Supervisor

(602) 506-6734

Enforcement

https://www.maricopa.gov/2137

Enhanced Regulatory Outreach Program

https://www.maricopa.gov/3536

Maricopa County Air Quality Department Website

- ✓ Permit Intake Locations
- ✓ Public Records Request
- ✓ AQmail@mail.maricopa.gov

Ombudsman

https://www.maricopa.gov/2764

Non-attainment Areas, Area A, and Other Planning Maps

https://www.maricopa.gov/2686

Report a Violation

Call (602) 372-2703 or visit https://www.maricopa.gov/2132

Rule 316 and Other Applicable Rules

- ✓ Rule 310—Fugitive Dust from Dust-Generating Operations
- ✓ Rule 316—Nonmetallic Mineral Processing
- ✓ Rule 200—Permit Requirements
- ✓ Appendix C—Test Methods
- ✓ Appendix F—Soil Designations

Subcontractor Registration Information

https://www.maricopa.gov/1823

Training

https://www.maricopa.gov/1822

Other Manuals on Dust Control

- ✓ Dust Abatement Field Guide for the Construction Industry
- ✓ Clark County, Nevada – Construction Activities Dust Control Handbook
- ✓ Field Manual on PM-10 and Fugitive Dust Control, Best Management Practices for Maricopa County, Arizona (Zbigniew D. Czupak and Dr. Edward Kavazanjian, P.E., Arizona State University, Ira A. Fulton School of Engineering)

Section 17 – Appendices

Policies and Guidance Documents

Hot Mix Asphalt Compliance Assurance Policy

https://www.maricopa.gov/DocumentCenter/View/7515

Opportunity to Correct Policy

https://www.maricopa.gov/DocumentCenter/View/7522

Asbestos Regulations Brochure

https://www.maricopa.gov/DocumentCenter/View/5064

Forms

Non-Title V Permit Application

https://www.maricopa.gov/DocumentCenter/View/6913

Non-Title V Permit Modification (Minor)

https://www.maricopa.gov/DocumentCenter/View/6911

Non-Title V Permit Modification (Non-Minor)

https://www.maricopa.gov/DocumentCenter/View/6912

Rule 316 Dust Control Plan

https://www.maricopa.gov/DocumentCenter/View/24934

Rule 316 Operations & Maintenance Plan

https://www.maricopa.gov/DocumentCenter/View/6888

Permit Contact Update Form

https://www.maricopa.gov/DocumentCenter/View/5581

Permit Closeout Request Form

https://www.maricopa.gov/DocumentCenter/View/6794

Permit Transfer

https://www.maricopa.gov/DocumentCenter/View/6796

Dust Control Recordkeeping Form

https://www.maricopa.gov/DocumentCenter/View/7567

Dust Control Training Records

https://www.maricopa.gov/DocumentCenter/View/7570

Enforcement Case Review Request

https://www.maricopa.gov/DocumentCenter/View/5133

Factsheets

Facility Information Signs

https://www.maricopa.gov/DocumentCenter/View/7562

Gravel Pads

https://www.maricopa.gov/DocumentCenter/View/7572