VISIBLE EMISSIONS MONITORING INSTRUCTIONS
DRY ABRASIVE BLASTING – OBJECTS GREATER THAN 8 FEET
EPA METHOD 22

This document was developed to assist those area sources subject to National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Nine Metal Fabrication and Finishing Source Categories, 40 CFR Part 63 Subpart XXXXXX (6X) and that conduct dry abrasive blasting of objects greater than eight (8) feet in any one dimension. One requirement for affected sources is to perform visual determinations of fugitive emissions according to the graduated schedule described in this guidance document and using EPA Method 22.

What are fugitive emissions?

- Fugitive emissions are non-stack emissions that escape during material transfer from buildings that contain the process, or directly from process equipment.
- For dry abrasive blasting operations, fugitive emissions are the dust created from blasting.

What is EPA Method 22?

- Method 22 is a simple procedure that uses the human eye to determine total time an industrial activity causes visible emissions (VE).
- Some emission standards require minimizing VE from processes. Method 22 is a procedure used to make sure the process and any emission control equipment are operating properly and are not generating excess emissions.
- Method 22 procedures are straightforward, but every observer must also know and understand the effects that background, weather conditions, ambient lighting, and the observation point can have on VE observations.
- EPA documentation on Method 22 is available at: https://www.epa.gov/emc/method-22-visual-determination-fugitive-emissions.

What equipment do I need?

- Two stopwatches are required and must be the accumulative type that measure to at least one-half of a second.

Where do I stand to look for visible emissions?

- Walk around the facility, building, or structure where dry abrasive blasting of objects greater than eight (8) feet is taking place, and find where potential emissions may occur.
    - For indoor blasting operations, this will be the primary vent, stack, exit, or opening from the building.
    - For outdoor blasting, observe at the fence line or property border nearest to the blasting operation.
- Choose a location with a clear view of the building if blasting occurs indoors, or at the property border if the blasting occurs outdoors. Make sure your location is safe – not in the path of moving equipment – and does not pose any safety hazard.
- The method recommends standing no closer than 15 feet and no farther away than one-quarter mile from the potential emission source.
- Pick a spot where the sunlight is not shining directly into your eyes.

How do I make the observations, and measure and record the time?

- Attached is a form for recording observations made during VE testing for dry abrasive blasting of objects greater than 8 feet. Some of the form could be completed prior to going outdoors.
    - Fill in the company name, its address where the blasting occurs, and the name of the contact person.
    - Fill in the name of the observer, and the company with which he or she is affiliated.
    - Fill in the NAICS and SIC codes.
    - Describe the blasting unit. If more than one exists, identify the one being observed.
    - Circle when in the graduated testing schedule this observation is being conducted.
- At the time of the test, record the estimated wind speed, wind direction, and sky condition (for example, cloudy, sunny, partly cloudy, etc.). Sketch the emission source being observed, and mark the observer's location on the sketch relative to the emission source and the sun. Show actual and potential emission points on the sketch.
- Record the clock time on the form when you begin.
- Use one stopwatch (SW1) to time the entire 15-minute observation period. After 15 minutes (the time this 6X rule requires for testing), stop SW1 and record the accumulated time and the clock time.
- During the observation period, continuously watch the source and if any emissions are seen, start the second stopwatch (SW2) and then stop it when the emissions stop.
    - Restart SW2 without resetting it if emissions occur again, and stop it if the emissions stop.
    - Continue doing this throughout the 15-minute observation period.
- Remember that **steam and other forms of condensed water vapor are not emissions** and are not a reason to start SW2.
- When the observation period is over, record the total time on SW2, which is the total time that emissions were visible in 15 minutes.

How long do I have to observe for fugitive emissions?

- For this rule, observe for a maximum of 15 minutes.
- You may quit after observing six minutes of emissions before the 15 minute elapses; otherwise, continue observing for 15 minutes.
- The observation period must not be less than a total of six minutes.

What is the graduated testing schedule?

- The schedule progresses from daily to weekly to monthly to quarterly testing as follows:
    - Perform VE testing **daily** for two weeks (that the source is in operation).

    If VEs are not observed at any time during those two weeks,
    - perform VE testing **weekly** for four consecutive weeks (that the source is in operation).

    If VEs are not observed at any time during the weekly tests,
    - perform VE testing **monthly** for three consecutive months (that the source is in operation).

    If VEs are not observed during any of the monthly tests,
    - perform VE testing **quarterly** (once per consecutive three months of operation).
- If VEs are not observed, continue VE testing quarterly.
- If VEs are observed during any of these times, the affected sources must resume VE testing on the more frequent schedule just prior to the schedule where VEs were observed.

Recordkeeping and reporting requirements

What if no visible emissions were observed in Tier 1?

Maintain VE testing records on site. Keep them in a readily accessible location for inspector review.

What if visible emissions were observed in Tier 1?
An annual certification and compliance report must be submitted no later than January 31 of each year that an exceedence has occurred and must contain the following information:

- the date of every visual determination of fugitive emissions which resulted in detection of visible emissions
- a description of corrective actions taken subsequent to the test
- date and result of follow-up visual determination of fugitive emissions performed after the corrective actions

General information that must be included in the certification and compliance report includes the following:

- company name and address
- statement by a responsible official with that official's name, title, and signature certifying truth, accuracy, and completeness of the content of the report
- date of report, and beginning and ending dates of the reporting period

If required to submit reports, where do I send them?
In Kansas, reports to be submitted are to be sent to the KDHE Bureau of Air, with a copy sent to USEPA Region 7, at the following addresses:

KDHE Bureau of Air
1000 SW Jackson, Suite 310
Topeka, KS 66612-1366

USEPA Region 7
Air Permitting and Compliance
11201 Renner Blvd.
Lenexa, KS 66219

Emissions monitoring questions and answers

Following is a Q&A from EPA pertaining to emissions monitoring for blasting objects greater than eight feet in any one dimension. Q&As that have been received by EPA on the entire 6X rule have been compiled and are available at:
https://www.epa.gov/stationary-sources-air-pollution/nine-metal-fabrication-and-finishing-area-source-categories-40-cfr

Q: For abrasive blasting of large objects greater than 8 feet always done inside of a blast booth vented through a control device, there is no mention of visual monitoring in 40 CFR 63.11516(a)(2), but it is required in 40 CFR 63.11516(a)(3). Are companies subject to 40 CFR 63.11516(a)(3) when blasting objects over 8 feet? If all blasting occurs in a vented enclosed booth would they only be subject to the requirements in 40 CFR 63.11516(a)(2)?

A: *The criterion for blasting objects over 8 feet (ft) in any one dimension is only with regard to large objects being blasted without a control device. There is no size limit with regard to blasting which is vented to a control device, and would therefore include objects over 8 ft, and no visual monitoring would be required as long as the blasting operation is vented to a control device. The lack of control device is the key factor, not the size.*

VISIBLE EMISSIONS TESTING
DRY ABRASIVE BLASTING – OBJECTS GREATER THAN 8 FEET

Company name: Address: Company rep.:	Observer: Company name:
NAICS/SIC codes:	Date:
Blasting unit description (ID no., indoor or outdoor):	Visible emission testing (circle one): Daily Weekly Monthly Quarterly
Sky conditions: Precipitation:	Wind direction: Wind speed:

Sketch blasting unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points (fence line or property border nearest to the outdoor abrasive blasting operation; or primary vent, stack, exit, or opening from building which houses the unit).

VISIBLE EMISSIONS TESTING	SW1	SW2
Begin observation	Clock time/elapsed time *(minutes:seconds)*	Accumulated emission time *(minutes:seconds)*
Record initial clock time/elapsed time:	_____ / 0:00	
Record total time of continuous emissions:		_____
Record total time of continuous emissions:		_____
Record total time of continuous emissions:		_____
Record total time of continuous emissions:		_____
Record final clock time/elapsed time (at least 15 min. later):	_____/_____	
Total time emissions observed: (If more than 6 min., then immediate corrective action required.)		_____
End observation		