

**CEMEX Southeast, LLC**  
**Operations and Maintenance Plan**  
**Cement Loading/Unloading System**  
**Sources: Loading/Unloading**  
**Port of Pensacola**

**1.0 Source Description**

The Cement Loading/Unloading System is used to unload cement products from rail car, place the cement in a storage warehouse and load the products into truck and railcars for Shipping. Its main system component is:

- A cement storage and bulk loading system that stores finished cement products and loads them for shipping, including the rail car unloading, warehouse storage, cement truck distribution, and railcar distribution.

**2.0 System Emission Points and Air Pollution Control Equipment**

During Cement Loading/Unloading System operations, particulate matter may be emitted at six emission points. The system includes five different dust collector baghouses to control particulate matter emissions at the rail car unloading, warehouse storage, and at the truck and rail load out devices. The following table summarizes system emission points and applicable air pollution control devices (APCDs), as well as the visual inspection interval (see Section 6.0)

<b>Emission Point #</b>	<b>Description</b>	<b>Air Pollution Control Device</b>	<b>VE Inspection Interval</b>	<b>Appropriate Operating Procedure Range</b>
001FUG	Rail Car Unloading Fugitives	N/A	Daily	2-10" (w.g.)
001BHA	Flat Storage Compartment A and Rail Car Unloading	West Wheelabrator Filter 813 model 36WCC	Daily	2-10" (w.g.)
001BHB	Flat Storage Compartment B and Rail Car Unloading	East Wheelabrator Filter 813 model 36WCC	Daily	2-10" (w.g.)
001BHA1	Truck Loadout A	DCL CFM 270 filter and UN800 loading spout	Daily	2-10" (w.g.)
001BHA2	Railcar Loadout A	DCL CFM 270 filter and UN800 loading spout	Daily	2-10" (w.g.)
001BHB1	Truck Loadout B (currently inactive)	DCL CFM 270 filter and UN800 loading spout	Daily	2-10" (w.g.)

**3.0 Applicable Emission Limit**

The emission limit applicable to the Cement Loading/Unloading System is visible emissions must not exceed 5 percent opacity.

#### 4.0 Operator Procedures for Minimizing Visible Emissions From the Cement Loading/Unloading System During Normal Cement Processing Operations

Cement Loading/Unloading System operations are performed in accordance with the POP Standard Operating Procedures (SOP) documents for POP (Cement Storage and Bulk Loading System). Applicable SOPs include the following:

- AIR-SOP-15 Fugitive Dust Assessment – Normal Operation
- AIR-SOP-17 Railcar Loading – Normal Operation
- AIR-SOP-18 Barge Unloading – Normal Operation (inactive)
- AIR-SOP-19 Barge Loading – Normal Operation (inactive)
- AIR-SOP-20 Bulk Truck Loading – Normal Operation
- AIR-SOP-21 Railcar Unloading – Normal Operation

These procedures are part of the facility's operating procedures system, which is maintained and kept current as part of the plant policies. The SOPs discuss how the plant shall be operated, and are used for job-specific training. The tasks necessary to ensure proper operation of the Cement Loading/Unloading System with minimum emissions are also included within the SOPs for POP

#### 5.0 Preventive Maintenance

Preventive maintenance work orders are maintained on the facility's maintenance management system. Maintenance Department technicians perform preventive maintenance (PM) tasks on the Cement Loading/Unloading System equipment including:

Equipment #	Equipment Name
TBD	All Baghouses (Pressure Drop to replace cartridges)
	Warehouse (Flat Storage) Sealed openings (examined for integrity)

The PM schedules and the PM task lists for equipment in the Cement Loading/Unloading System are based upon past experience with similar equipment and upon the manufacturer's documentation. All PM tasks will be performed in accordance with manufacturer's recommendations.

When conducting PM activities, maintenance technicians use checklists that list PM tasks, steps, and instructions. The technician completes the PM checklist and returns the form to the Maintenance Manager, who verifies completion of the checklist.

#### 6.0 Monitoring Requirements

##### 6.1 Periodic Method 22 Visible Emissions Monitoring Requirements

As referenced in the table in Section 2.0, the Cement Loading/Unloading System must be tested for visible emissions once each month using the procedures described in USEPA Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares. Trained observers will conduct the Method 22 tests while the Cement Loading/Unloading System is in operation. The Terminal Manager (or a designated representative) will schedule the Method 22 testing. Copies of the Method 22 procedures, Field Data Worksheets, and equipment needed to conduct the tests (stopwatch, etc.) will be maintained in the Terminal Office.

As noted in the Method 22 procedures, observers will take care to perform the proper location relative to the source and the sun, as well as to avoid degraded visibility of emissions caused by improper background contrasts, ambient lighting, and observer position relative to lighting and wind.

During the Method 22 test, the observer should determine the presence or absence of visible emissions at points above or beyond the baghouse exhaust vents and stacks. The duration of the Method 22 tests will be 1 minute. Upon completion of the test, the observer will record the results on the Method 22 Field Data Worksheet and submit the worksheet to the Terminal Manager (or a designated representative) so that a Method 9 test can be started within one hour.

#### **6.2 Periodic Method 9 Opacity Tests**

Whenever visible emissions are observed during a Method 22 test of the Cement Loading/Unloading System, an opacity test using the procedures described in USEPA Method 9 – Visible Determination of the Opacity of Emissions from Stationary Sources must be performed to determine if the 5 percent opacity limit is being exceeded. If visible emissions were observed during 1-minute Method 22 test, the Method 9 test must be conducted within 1 hour.

The Terminal Manager (or a designated representative) will ensure that trained and certified Method 9 observers are available each day the Method 22 testing is conducted on the Cement Loading/Unloading System. Copies of the Method 9 procedures, Field Data Worksheets, and equipment needed to conduct the tests will be maintained in the Terminal Office.

As noted in the Method 9 procedures, observers will take care to perform the test from the proper location relative to the source and the sun, as well as to avoid degraded visibility of emissions caused by improper background contrast, ambient lighting, and observer position relative to lighting and wind.

During the Method 9 test, the observer should determine the opacity of the visible emissions plume at points above and beyond the baghouse exhaust vents and stacks. The duration of the Method 9 test will be only 6 minutes. Upon completion of the test, the observer will record results on the Method 9 Field Data Worksheet, and submit the worksheet to the Terminal Office. The Terminal Manager (or a designated representative) will maintain the Method 9 records for a period of 5 years.

The observer will notify the Terminal Manager (or a designated representative) and initiate corrective action immediately if the Method 9 test indicates opacity exceeding 5 percent.

#### **7.0 Periodic Review and Update of this Operations and Maintenance Plan**

The Terminal Manager (or a designated representative) will review the Cement Loading/Unloading System Operations and Maintenance Plan once per year for adequacy and currency. Documentation of the annual review or update will be retained in Environmental Department files for five years. Document that review is made.

#### **8.0 Operations and Maintenance Plan Revision History**

<u>Revision</u>	<u>Date</u>	<u>Purpose</u>
1.0	February 2003	Initial plan generation
2.0	July 2005	Updated
3.0	March 2010	Updated for air operating permit renewal

<b>Fugitive Dust Assessment</b>		<b>Environmental Standard Operating Procedure</b>
Doc.# AIR-SOP-15	Rev:	
Date:	Page 1 of 4	
Approved by:		

## 1. Purpose

The purpose of this procedure is to provide a best management practice method to assess fugitive dust emissions using internal resources

## 2. Applicability

This procedure applies to the Port of Pensacola (POP) facility as a Best Management Practice.

## 3. References

POP Best Practice for Fugitive Dust

## 4. Introduction

This procedure provides an accurate, repeatable, and credible method of assessing fugitive dust emissions. As part of the assessment plant specific emission factors and calculation methods are developed and applied. The assessment provides a prioritized listing of fugitive dust emission sources. The prioritized listing allows the plant to implement practical control measures on a planned basis that will result in noticeable improvements.

## 5. Procedure

### 5.1 Preparation Phase

#### 5.1.1 Equipment List

- (a) Forms must be used for collecting data by team members. The POP Best Practice for Fugitive Dust Assessment provides electronic forms for PM10 Emission Calculation Estimates, Paved Roads and Road Use, and Transfer Point (Conveying, Unloading, Loading, and Reclaiming).
- (b) The team should decide on changes needed to the forms and make the necessary changes
- (c) Other equipment required is:
  - Stop Watch or equipment
  - Distance measuring wheel
  - Carpenters level and protractor
  - Measuring Tape
  - Dust scoop

Standard Operating Procedures

<b>Fugitive Dust Assessment</b>		<b>Environmental Standard Operating Procedure</b>
Doc.# AIR-SOP-15	Rev:	
Date:	Page 2 of 4	
Approved by:		

- Small broom

### 5.1.2 Prerequisite Data

#### (a) External Meteorological Data

- Meteorological data can be obtained from the airport, air quality agency or industrial owned monitoring stations
- Values are assumed to be valid over a minimum 12 month period
- Values for the following meteorological parameters are required:
  - P Number of days/year when precipitation is 0.01" per day
  - Percent of time/year when wind speed is 12 mph @ h
  - U Mean Wind Speed

#### (b) Internal and Plant Data

- A facility drawing that includes building, storage facilities, mobile routes and conveyors
- For each material (inc. raw materials, solid or liquid fuels, products and chemicals) the on-site team leader should request the following information from the production supervisor or manager:
  - Material and its moisture content (M) as a percentage by weight. If possible verify this if the laboratory has a desiccator.
  - Annual volumes between transfer points.
  - Method of transporting (e.g. truck, rail, enclosed conveyor, etc)
  - Mean number of wheels (dimensionless)
  - Empty and load of weight of each mobile unit.
  - Mean vehicle speeds of mobile equipment. The speed can be verified during assessment process.
  - Volume rates of enclosed conveying systems.

### 5.13 Data Assimilation

- (a) Using the electronic forms PM10EST.doc and FDDATA1.xls, the following information should be entered:

- Sv Mean vehicle speed (mph)
- Wtons Mean vehicle weight (tons)
- Wwheels Mean number of wheels (dimensionless)

Standard Operating Procedures

<b>Fugitive Dust Assessment</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-15	Rev:	
Date:	Page 3 of 4	
Approved by:		

- VMT                      Vehicle miles Traveled
- VKT                     Vehicle Kilometers Traveled
- M                        Material Moisture (%)

## 5.2 Fugitive Dust Assessment Phase

### 5.2.1 On-Site Measurements and Methodologies

- (a) Designate a scribe to enter all data into the spreadsheets. Bar or pie charts are also effective to communicate the results of the assessment.
- (b) Silt content
  - The determination of silt content of road surface material is a key determinant of the propensity of there being a fugitive dust problem. The recommended methods to determine silt content are ASTM C 184-94, Standard Test Method for Fineness of Hydraulic Cement by 75M (No. 200 Sieve). The actual sieve test procedure should be carried out by the on-site laboratory staff or a local laboratory.
  - A team member should properly collect and mark the samples.
  - For roads or flat surfaces, the silt sample is collected from a specified area (yd<sup>2</sup> or m<sup>2</sup>). Recognition of the actual size of the sample and unit consistency must be determined to obtain meaningful results.

### 5.3 FD Estimation Methodology

Emission rate is calculated by multiplying the source size by an empirically derived or otherwise determined emission factor. To account for the effectiveness of an in-place fugitive control system, the resulting product is multiplied by an appropriate control efficiency factor.

Emission rate = (Source Extent)(Emission Factor)(Control Efficiency) where

Emission Rate = Mass per unit of time

Source Extent = Magnitude of area/activity from which FD emissions are measured

Emission Factor = Mass of uncontrolled emissions per unit of time

Control Efficiency = 1 – (efficiency of dust control system)

## 6. Training

The fugitive dust assessment team will be trained on this procedure.

Standard Operating Procedures

Fugitive Dust Assessment		Environmental Standard Operating Procedure
Doc.# AIR-SOP-15	Rev:	
Date:	Page 4 of 4	
Approved by:		

## 7. Record Keeping

Copies of determinations and records will be kept for a period of 5 years.

## 8. Definitions

**Fine Particulate** is particulate matter less than or equal to 2.5 M in aerodynamic diameter.

**Fugitive Dust** is particulate matter generated by the storage facility or a related activity that is out of containment, uncontrolled or is spilled.

**Inhalable Particulate** is particulate matter less than or equal to 15 M aerodynamic diameter.

**Particulate Matter** is tiny solid or liquid particles that come in many shapes and sizes and from many different sources. The primary sources at the flat storage terminal, related activities and attrition during transfer, spills from trucks and conveyors and tracking from transport to property.

**PM10** is particulate matter less than or equal to about 3.5 M aerodynamic diameter as measured with a 10 MM Dorr-Oliver cyclone pre-collector.

**Silt Particulate** are particulates that pass through a 200-mesh sieve or a maximum diameter of 75m.

**Spill** are particulate matter generated at a flat storage terminal operations that are “out of containment” and there is exists a pathway to the environment.

**Total Particulate** is particulate matter of all sizes as collected by isokinetic sampling.

**Total Suspended Particulate** is particulate matter measured by a high volume sampler with an inlet 50% cutoff 30-50 M in aerodynamic diameter

## 9. Responsibilities

**Team Coordinator** serves as scribe, coordinates activities, and interacts with other plant personnel. Provides drawings of the facility.

**Fugitive Dust Assessment Experienced Member** supports team leader and provides guidance. Must be able to translate empirically derived emission factor equations into meaningful mental constructs.

**Plant Member(s)** is/are assigned specific information gathering tasks such as physical measurements or traffic information.

Standard Operating Procedures

<b>Rail Car Loading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-17	Rev:	
Date:	Page 1 of 2	
Approved by:		

## 1. Purpose

The purpose of this procedure is to provide a method for rail car loading to minimize dust emissions.

## 2. Applicability

This procedure applies to all railcar loading at the Port of Pensacola facility.

## 3. Applicable Law

N/A

## 4. Introduction

This procedure describes how to load rail cars at the facility to reduce dust emissions.

## 5. Procedure

5.1 Upon arrival at the loading booth, put your body harness on

5.2 Check the scale zero and place the bill in printer

5.3 Spot car for the Loadout spout you will be using

### 5.3.1 Loadout "A"

5.4 Attach body harness lanyard to safety wire. Open the top car hatch, inspect interior for holes in car, product left in car amount and what it is. If lumps are found, remove them prior to loading

5.4.1 Do not enter car

5.4.2 Compare the LTWT on the side of the car to the tare on your scale

5.4.3 Do not load any car that has a heavy amount of return in it, unless ok'd by the Terminal Manager

5.4.4 Do not load cars where the doors cannot be closed all the way.

5.4.5 These conditions have to be brought to distributions attention so car can be scheduled for repair.

5.5 Inspect bottom of car, make sure hopper doors are closed completely, put rail seals on hopper doors, record numbers on bill of lading.

5.6 Lower spout you will be using on to opened hatch.

5.6.1 Ensure dust collector is operating.

Standard Operating Procedures



<b>Rail Car Loading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-17	Rev:	
Date:	Page 2 of 2	
Approved by:		

5.7 Initiate loading car, stop and inspect for leakage, restart car loading, if car is tight. If leakage exists seal car prior to any further loading

- 5.7.1 Vacuum, cleanup any spillage.
- 5.7.2 Load the car to a maximum gross weight of 263,000 lbs on cement hoppers.
- 5.7.3
- 5.7.4 With safety harness attached close car hatch and seal. Record seal number on Bill of Lading.

5.8 NOTE:

- 5.8.1 263,000 maximum---cars cannot be overloaded---They will be side tracked and cement removed at our expense
- 5.8.2 Any time you are on the top of a car, harness has to be clipped onto safety wire

5.9 **REMEMBER TO WORK SAFELY**

5.10 At anytime visible emissions are noticed, the cause of the emissions will be determined and corrected immediately. If the source of the emissions cannot be corrected immediately, the source will be shut down.

## 6. Training

See the Supervisor for training requirements.

## 7. Record Keeping

N/A

## 8. Definitions

N/A

## 9. Responsibilities

Terminal Manager will approve loading cars with a heavy amount of return in the car

**No Loading of cars with any leakage!**

Standard Operating Procedures

<b>Barge Unloading - Inactive</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-18	Rev:	
Date:	Page 1 of 2	
Approved by:		

## 1. Purpose

The purpose of this procedure is to provide a method for vessel/barge unloading to minimize dust emissions

## 2. Applicability

This procedure applies to all vessel/barge discharging at the Port of Pensacola facility

## 3. References

N/A

## 4. Introduction

This procedure describes how to discharge a vessel/barge at the facility to reduce dust emissions.

## 5. Procedure

- 5.1 Upon arrival of the vessel, make fast connections of the unloading unit and shore piping
- 5.2 Warm-up the loader, checking the unit for vacuum level, proper dust collection suction and nay damage to piping or hoses
- 5.3 Check wind speed conditions
- 5.4 Upon direction of terminal manager, and in compliance with discharge plan, discuss between the vessels chief mate and the Terminal Manager request the vessel to open one hatch for discharge availability.

Activate vacuum unloader, place nozzle 1 ½ to 2 feet in cement. Move nozzle slowly, maintaining a nozzle penetration into the material. Move nozzle slowly in a level pattern moving horizontally to make a cut over length of hatch or reach. Move nozzle to next path, keeping nozzle submerged in the material through the next cut. Do not create vertical walls over four feet in height to prevent avalanche of material and dust creation.

When the cargo is approximately four feet above the tank top, a wheel loader will be placed in the hold to assist pushing material to the nozzle. Do not allow the wheel loader operator to lift material, rather it should be pushed along the floor of the vessel. Complete the discharge to tank top to achieve a machine clean completion.

**At anytime visible emissions are noticed, the cause of the emissions will be determined and corrected immediately. If the source of the emissions cannot be corrected immediately, the source will be shut down.**

Standard Operating Procedures

Barge Unloading - Inactive		Environmental Standard Operating Procedure
Doc.# AIR-SOP-18	Rev:	
Date:	Page 2 of 2	
Approved by:		

5.5 To avoid over-stressing a multi-hatch vessel, it will be a standard procedure to perform partial discharges of a hold with movement to subsequent hatches following normal above noted procedures. Hatch covers will be closed whenever cargo in that hold is not being worked.

5.6 To minimize or avoid the generation of fugitive emissions from ship-to-shore loading of the flat storage building. The following safeguards will be utilized

- The flexible connection between the “Leslie” and the shore piping will be a bolted flange with seal gasket
- During the unloading/loading process, the connection will be monitored to ensure no leakage.
- Leakage will be checked by pressurizing the system, and physically examining the coupling for leakage.
- Once unloading is completed, the “Leslie” will force air through the line for approximately five minutes to ensure the removal of all material in the line prior to line disconnect.

## **6. For Help**

6.1 Barge unloading sequence changes should be made through the Terminal Manager. He should also be made aware of any lengthy delays in the barge unloading as soon as you are aware of them ---DON'T WAIT.

## **7. Training**

See the Terminal Manager for training requirements.

## **8. Record Keeping**

The unloader operator shall maintain a log of all evolutions and times.

## **9. Definitions**

N/A

## **10. Responsibilities**

Unloader Operator will be responsible for minimizing fugitive dust emissions from unloading operations. Will communicate with the Terminal Manager if any condition arises that result in an increase of fugitive dust emissions.

**Terminal Manager or Representative will monitor dust emissions.**

Standard Operating Procedures

<b>Bulk Truck Loading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-20	Rev:	
Date:	Page 1 of 2	
Approved by:		

## 1. Purpose

The purpose of this procedure is to provide a method for bulk truck loading to minimize dust emissions.

## 2. Applicability

This procedure applies to all bulk truck loading at the Port of Pensacola facility

## 3. References

N/A

## 4. Introduction

This procedure describes how to load bulk trucks at the facility to reduce dust emissions.

## 5. Procedure

- 5.1 Zero scale
- 5.2 Spot the truck---lower spout into truck---open air slide feed valve.
- 5.3 Tare truck in---27k to 30k normal for most trucks. Question if above 31k, contact sales for last known product truck was loaded with.
- 5.4 Determine through truck driver what customer and destination he is in for.
- 5.5 Pass proper bill down to driver, driver puts trailer number on bill and also signs it. He also puts on "load to" or PO# if required.
- 5.6 Bill is retrieved from driver and put into printer
- 5.7 Load until you hit specified gross or net based on the tare or specific orders on the BOL.
- 5.8 After loading is complete, hit print, then pull spout
- 5.9 After spout is pulled **and not before** give drivers all copies of the BOL
- 5.10 Remember to work safely,
- 5.11 **At anytime visible emissions are noticed, the cause of the emissions will be determined and corrected immediately. If source of the emissions cannot be corrected immediately, the source will be shut down.**

## 6. Training

See the Supervisor for training requirements.

## 7. Record Keeping

Bills of lading will be used for bulk truckloads.

Standard Operating Procedures

<b>Bulk Truck Loading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-20	Rev:	
Date:	Page 2 of 2	
Approved by:		

#### 8. Definitions

N/A

#### 9. Responsibilities

Operators are responsible for checking condition of truck drivers hatch access steps. Operators are responsible for vacuum cleanup of any spills.

Standard Operating Procedures

<b>Rail Car Unloading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-21	Rev:	
Date:	Page 1 of 2	
Approved by:		

### 1. Purpose

The purpose of this procedure is to provide a method for rail car unloading to minimize dust emissions.

### 2. Applicability

This procedure applies to all railcar unloading activities at the Port of Pensacola facility.

### 3. Applicable Law

N/A

### 4. Introduction

This procedure describes how to unload a railcar at the facility to reduce dust emissions.

### 5. Procedure for Railcar Unloading

1. Center rail car door over the boot lift and inspect bottom of car
2. Ensure the dust collector is operating
3. Raise the boot lift according to the door type so as not to have a spill.
4. Open the door of the rail car so the material can drop.
5. Chose the fill point and start the Rail pump.
6. Pump begins to run, keep eye on the door to see if it has any bad seals or if completely sealed.
7. Run vibrators to shake down any loose material.
8. Once rail car is empty, shut down the vibrators and shut down the pump
9. Close the rail car door into the locked position.
10. Lower the boot lift. Move the rail car to the next position.
11. REMEMBER TO WORK SAFELY
12. At anytime visible emissions are noticed, the cause of the emissions will be determined and corrected immediately. If the source of the emissions cannot be corrected immediately, the source will be shut down.

**To minimize or avoid the generation of fugitive emissions from railcar unloading to the flat storage building, the following safeguards will be utilized.**

- During the unloading process, the connection will be monitored to ensure no leakage
- Leakage will be checked by pressurizing the system and physically examining the connection for leakage
- Vacuum or sweep to cleanup any spillage immediately

<b>Rail Car Unloading – Normal Operations</b>		Environmental Standard Operating Procedure
Doc.# AIR-SOP-21	Rev:	
Date:	Page 2 of 2	
Approved by:		

#### 6. For Help

Any railcar unloading sequence changes should be made through the Terminal Manager. He should also be made aware of any lengthy delays in the railcar unloading as soon as you are aware of them – DON'T WAIT!

#### 7. Training

See the Terminal Manager or Supervisor for training requirements.

#### 8. Record Keeping

The Unloader Operator will maintain a log of all events and times.

#### 9. Definitions

N/A

#### 10. Responsibilities

Unloader Operator will be responsible for minimizing fugitive dust emissions from unloading operations. Unloader Operator will communicate with the Terminal Manager if any condition arises that results in an increase in fugitive dust emissions.