ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Patrick J. Cunningham
Acting Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 27, 2009

David N. Bittel, Plant Manager
Arizona Portland Cement Company
PO Box 338
Rillito, AZ 85654-0338

Dear Mr. Bittel:

Subject: Air Quality Control Permit No. 38592
Cement Plant - Place ID: 2869

Upon receipt of an email from Bert Acken of Lewis and Roca LLP on January 22, 2009, the Arizona Department of Environmental Quality was made aware that an incorrect version of Air Quality Permit Revision Number 38592 was sent to you as the issued permit. As you know, on August 7, 2008, Arizona Portland Cement Company (APCC) submitted comments on the permit during the public comment period. The Department addressed these comments prior to forwarding the permit documents to the Environmental Protection Agency and made the appropriate changes to the permit. A clerical error resulted in a previous draft, which did not include the approved changes, being mailed out as the final version.

Attached please find the final approved permit. Please discard the previous permit that was mailed to you as it does not represent the final issued permit.

If you have any questions please contact Trevor Baggiore, Manager of the Air Quality Permits Section, at (602) 771-2321.

Sincerely,

Nancy C. Wrona, Director
Air Quality Division

NCW:tb4

cc: Shirley Rivera, EPA Region IX

Enclosures (2): Issued Permit Revision No. 38592
Final Technical Support Document for Permit Revision No. 38592

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 W. Washington Street • Phoenix, AZ 85007 • Phone: (602) 771-2338

SIGNIFICANT PERMIT REVISION TO AIR QUALITY CONTROL PERMIT

(As required by Title 49, Chapter 3, Article 2, Section 49-426, Arizona Revised Statutes)

This air quality control permit does not relieve applicant of responsibility for meeting all air pollution regulations

1. PERMIT TO BE ISSUED TO (Business license name of organization that is to receive permit)

Arizona Portland Cement Company

2. NAME (OR NAMES) OF OWNER OR PRINCIPALS DOING BUSINESS AS THE ABOVE ORGANIZATION

Division of California Portland Cement Company

3. MAILING ADDRESS **PO Box 338**
Number Street
Rillito, AZ 85654-0338
City or Community State Zip Code

4. ORIGINAL EQUIPMENT LOCATION/ADDRES **11115 North Casa Grande Highway**
Number Street
Rillito, Pima County, AZ 85654
City or Community State Zip Code

5. FACILITIES OR EQUIPMENT DESCRIPTION

6. THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING ***Conditions as described in attached***

7. ADEQ SIGNIFICANT REVISION NUMBER **38592** PERMIT CLASS **I**

SIGNIFICANT REVISION ISSUED THIS **16th** DAY OF **December**, ***2008***

SIGNATURE

Nancy C. Wrona, Director, Air Quality Division
TITLE

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY CLASS I PERMIT SIGNIFICANT REVISION

COMPANY: *Arizona Portland Cement Company*
FACILITY: *Arizona Portland Cement Company*
PERMIT #: *38592*
DATE ISSUED: **December 16, 2008**

SUMMARY

This Class I, Title V significant permit revision is issued to Arizona Portland Cement Company, the Permittee, for construction and operation of a limestone quarry and Portland cement plant located in Rillito, Arizona. The Permittee is hereby granted conditional approval to modify the subject quarry and plant as described herein. The approval is conditioned on adherence to the representations made in the permit application to ensure compliance with the terms and conditions in this significant permit revision.

This permitting action is a significant permit revision to existing Title V Permit No. M190310P1-00. This permitting action also constitutes approval of construction under 40 CFR § 63.5(e). This significant permit revision becomes effective on the date of issuance.

This permit is issued in accordance with Title 49, Chapter 3 of the Arizona Revised Statutes. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code (A.A.C.) R18-2-101 et. seq., Arizona State Implementation Plan (SIP), Code of Federal Regulations (CFR) Title 40 - Parts 60, 63, and 70 except as otherwise defined in this permit. All terms and conditions in this permit are enforceable by the Administrator of the U.S. Environmental Protection Agency, except as otherwise stated in this permit.

The facility is classified as a major source as defined in A.A.C. R18-2-101(64), and requires a Class I permit pursuant to A.A.C. R18-302(B)(1)(a). The proposed modification will result in significant net emissions increases for emissions of sulfur dioxide (SO_2) and particulate matter with an aerodynamic diameter less than 10 microns (PM-10). The proposed modification is therefore a major modification with respect to SO_2 emissions under A.A.C. R18-2-406 and with respect to PM-10 emissions under A.A.C. R18-2-403.

Table of Contents

ATTACHMENT B: SPECIFIC PROVISIONS

Attachment B is revised to include Conditions I.Q, II.C.3, and V.A.8:

I. GENERAL REQUIREMENTS

Q. Visible Emissions Observation Plan

At least 90 days before the initial firing of fuel in Kiln 6, the Permittee shall submit a Visible Emissions Observation Plan to be approved by the Director. The plan shall meet the criteria set forth in Condition I.E. The plan shall be revised as necessary prior to submittal in order to address all non-point sources and, where applicable, sources of fugitive emissions covered by Attachment "E" to this permit.

[A.A.C. R18-2-306(A)(3)]

II. OPEN AREAS, ROADWAYS/STREETS, MATERIAL HANDLING, STORAGE PILES

C. Dust Control Plan

3. Kiln 6 Fugitive Dust Control Plan

At least 180 days before the date on which Kiln 6 becomes operational, the Permittee shall submit a Kiln 6 Dust Control Plan. The plan shall be submitted using the appropriate permit revision mechanism in Title 18, Chapter 2, Article 3 of the Arizona Administrative Code. The plan shall contain, at a minimum, all of the following information:

a. Names, address(es), and phone numbers of person(s) responsible for the preparation, maintenance, and implementation of each element of the Dust Control Plan.

b. Control measures or a combination thereof to be applied to all actual and potential fugitive dust sources, before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays. The control measures specified in the Dust Control Plan shall address and shall be sufficient to ensure compliance with Condition I.B.2.f in Attachment "E" to this permit.

c. A drawing that shows:

(1) Entire project site boundaries;

(2) Acres to be disturbed with linear dimensions;

(3) Nearest public roads;

(4) North arrow; and

(5) Planned exit locations onto paved public roadways.

d. Initial tests to ensure that compliance with Condition I.B.2.e in Attachment "E" to this permit is being maintained.

e. Adequate recordkeeping measures to monitor the dust suppressant or water application rates.

[A.A.C. R18-2-306(A)(3)]

V. GENERAL REQUIREMENTS

A. Kilns 1, 2, 3, 4

8. Termination of Authority to Operate

The Permittee shall permanently cease operation of Kilns 1, 2, 3, and 4 on or before the date when Kiln 6 becomes operational, as provided by Section IV of Attachment "E" to this permit.

[A.A.C. R18-2-306.01]

ATTACHMENT "E": SPECIFIC PROVISIONS UNDER THE "KILN 6" ALTERNATE OPERATING SCENARIO

This significant permit revision shall automatically terminate if construction of the proposed major modification is not commenced within 18 months of issuance.

[A.A.C. R18-2-402(D)(4)]

The requirements of Attachment "E" shall apply, and shall replace specific sections of Attachment "B," as provided in Sections I through XIII of Attachment "E."

I. MISCELLANEOUS SOURCES

The requirements of this section (Section I of Attachment "E") shall apply and shall replace Sections I and II of Attachment "B" beginning on the date when any of Sections III through XIII of Attachment "E" becomes effective.

A. List of Emission Units

This Section of the permit presents requirements that are applicable to miscellaneous activities throughout the quarry and plant. This Section of the permit does not cover a specific process unit or emission unit.

B. Emission Limits and Standards

1. Requirements for All Nonpoint Sources

a. General

(1) As used in Conditions I.B.1.a through I.B.1.c, all terms shall have the meaning given in A.A.C. R18-2-101.

(2) Conditions I.B.1.b and I.B.1.c shall apply only to nonpoint sources.

[A.A.C. R18-2-601]

(3) For the purposes of Condition I.B.1.a(2), nonpoint sources are sources of air contaminants which, due to lack of an identifiable emission point or plume, cannot be considered point sources.

[A.A.C. R18-2-601]

(4) In applying the criterion in Condition I.B.1.a(3), such items as air-curtain destructors, heater-planers, and conveyor transfer points shall be considered to have identifiable plumes.

[A.A.C. R18-2-601]

b. Visible Emissions

The Permittee shall not cause, allow or permit visible emissions from nonpoint sources in excess of 40 percent opacity measured in accordance with Reference Method 9 in appendix A to 40 CFR part 60. Open fires permitted under Condition I.B.3 are exempt from this requirement.

[A.A.C. R18-2-614]

c. Work Practice Requirements

The Permittee shall prevent excessive amounts of particulate matter from becoming airborne by employing reasonable precautions such as the following:

(1) Use Dust Control Plan approved dust suppressants, adhesive soil stabilizer, wetting agents, paving, covering, detouring, revegetation, hydro-seeding, hydro-mulching, mulching, sweeping, wet drilling, vacuuming, wind fence, wind break, shrouding, skirting, enclosing, contouring, animals, compaction, agglomeration, stemming, dust collectors, or encrustation on, or bar access to open areas, or employ or optimize blast pattern, or control oxygen balance of explosives during blast operations, or minimize material drop height, or control vehicle access, or limit vehicle speed during construction operations, repair operations, demolition activities, clearing operations, and leveling operations, or when any earth is moved or excavated.

[A.A.C. R18-2-604(A)]

(2) Use Dust Control Plan approved dust suppressants, adhesive soil stabilizer, or paving, or bar access to, driveways, parking areas, and vacant lots where motor vehicular activity occurs.

[A.A.C. R18-2-604(B)]

(3) Use Dust Control Plan approved dust suppressants, adhesive soil stabilizer, wetting agents, paving, covering, detouring, revegetation, hydro-seeding, hydro-mulching, mulching, sweeping, wet drilling, vacuuming, wind fence, wind break, usage of decomposed granite, crushed aggregate, compaction, agglomeration, or encrustation on, or limit vehicle speed on, or control vehicle access to, when a roadway is repaired, constructed, or reconstructed.

[A.A.C. R18-2-605(A)]

(4) Use dust suppressants, spray bars, hoods, wetting agents, wind break, covering, agglomeration, or encrustation on, or minimize material drop height, or limit vehicle speed, or cover the load adequately when transporting material likely to give rise to airborne dust.

[A.A.C. R18-2-605(B) and R18-2-606]

(5) Use Dust Control Plan approved dust suppressants, adhesive soil stabilizer, wetting agents, spray bars, hoods, covering, wind fences, wind breaks, shrouding, skirting, enclosing, contouring,

agglomeration, dust collectors, or encrustation on, or minimize material drop height, when crushing, handling, or conveying material that is likely to give rise to airborne dust.

[A.A.C. R18-2-606]

(6) Adequately cover, or use dust suppressants, wetting agents, chemical stabilization, wind fences, wind breaks, shrouding, skirting, enclosing, contouring, agglomeration, compaction, rolling, dust collectors, or encrustation when stacking, piling, or otherwise storing organic or inorganic dust producing material. For all outdoor storage piles in which the stored material is a raw material with a silt content above 10 percent as stockpiled, wind screens shall be used.

[A.A.C. R18-2-306.01, R18-2-607(A)]

(7) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material or with the use of spray bars and wetting agents.

[A.A.C. R18-2-607(B)]

2. Additional Requirements for Certain Nonpoint Dust Sources

a. The Permittee shall not cause, allow, or permit bulk material to be hauled off-site, except in accordance with Conditions I.B.2.a(1) through I.B.2.a(2). This condition shall not apply to haul truck trips that leave the site only to cross public roads between the quarry and cement plant.

[A.A.C. R18-2-406(A)(4)]

(1) All haul trucks shall be loaded in such a manner as to prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, or tailgate(s).

[A.A.C. R18-2-406(A)(4)]

(2) No bulk material shall be transported in haul trucks unless the cargo compartment is covered with a tarp or other suitable closure, or unless the cargo compartment is loaded such that the freeboard is not less than three inches.

[A.A.C. R18-2-406(A)(4)]

b. The Permittee shall not cause, allow, or permit any empty haul truck to leave the site unless the interior of the cargo compartment has been cleaned or the cargo compartment is covered with a tarp or other suitable closure. This condition shall not apply to haul truck trips that leave the site only to cross public roads between the quarry and cement plant.

[A.A.C. R18-2-406(A)(4)]

c. The Permittee shall not cause, allow, or permit any haul truck to leave the site without first utilizing a device that removes from its tires and exterior surfaces mud, dirt, debris, or other accumulation that may cause particulate matter emissions. This condition shall not apply to haul truck

trips that leave the site only to cross public roads between the quarry and cement plant. Acceptable devices include:

(1) Wheel wash system.

(2) Gravel pad at least 30 feet wide, 50 feet long, and 6 inches deep.

(3) Paved roadway at least 20 feet wide and 100 feet long.

(4) Rails, pipes, or grates of sufficient width and length to remove debris effectively.

[A.A.C. R18-2-406(A)(4)]

d. Paving

(1) The Permittee shall maintain the quarry road between Twin Peaks Road and the quarry entrance in a paved condition.

(2) The Permittee shall maintain the plant road segments paved in 1991, 1992, 1995, and 1996 in a paved condition. These road segments have been marked on the Road System Diagram in Section XIV of Attachment "B."

[A.A.C. R18-2-306.01]

e. Dust Control Requirements for Unpaved Roads

The Permittee shall maintain a dust control efficiency of 85 percent or better on all of the following unpaved roads:

(1) All active roads at the quarry;

(2) The unpaved sections of the road from Avra Valley road to Twin Peaks Road;

(3) The unpaved sections of the roads from the Canal to Avra Valley road; and

(4) The following active unpaved roads at the cement plant: East Road, West Road, Coal/Coke Storage Area Road, Central Control Road, and Reclaimer Road. These road segments have been marked on the Road System Diagram in Section XIV of Attachment "B."

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4)]

f. The Permittee shall operate at all times in conformance with the current Dust Control Plan prepared pursuant to Condition I.C.4 and approved by the Director.

[A.A.C. R18-2-306.01, R18-2-403(A)(1), R18-2-406(A)(4)]

g. The Permittee shall at all times maintain and operate gates to preclude public vehicle traffic from traveling on the unpaved road from the plant

to the quarry, between Avra Valley Road and Twin Peaks Road, described in the December 2005 Class I permit application as road segments 50-51 and 51-52.

[A.A.C. R18-2-404(A)]

3. Open Burning

a. Except as provided in Condition I.B.3.b, and except when permitted to do so by either the Director or the local officer delegated the authority for issuance of open burning permits, the Permittee shall not ignite, cause to be ignited, permit to be ignited, or suffer, allow or maintain any open outdoor fire.

[A.A.C. R18-2-602(A)]

(1) "Open outdoor fire," as used in Condition I.B.3.a, means any combustion of combustible material of any type outdoors, in the open where the products of combustion are not directed through a flue. Cutting torches. welding, open flames used in the maintenance and repair of stationary or mobile equipment, coal fires, explosives, fuses and blasting agents used in the quarry and torches used to ignite the Kiln 6 main burner are not open outdoor fires.

[A.A.C. R18-2-602(B)]

(2) "Flue," as used in Condition I.B.3.a(1), means any duct or passage for air, gases or the like, such as a stack or chimney.

[A.A.C. R18-2-602(B)]

b. The following fires are exempted from the prohibition in Condition I.B.3.a:

[A.A.C. R18-2-602(C)]

(1) Fires used only for:

(a) Cooking of food,

(b) Providing warmth for human beings,

(c) Recreational purposes,

(d) Branding of animals,

(e) Orchard heaters for the purpose of frost protection in farming or nursery operations, or

(f) The proper disposal of flags under 4 U.S.C. 1, § 8.

[A.A.C. R18-2-602(C)(1)]

(2) Any fire set or permitted by any public officer in the performance of official duty, if the fire is set or permission given for the following purpose:

(a) Control of an active wildfire; or

(b) Instruction in the method of fighting fires.

[A.A.C. R18-2-602(C)(2)]

(3) Fire set by or permitted by the Director of Department of Agriculture for the purpose of disease and pest prevention in an organized, area-wide control of an epidemic or infestation affecting livestock or crops.

[A.A.C. R18-2-602(C)(3)]

(4) Prescribed burns set by or assisted by the federal government or any of its departments, agencies, or agents, or the state or any of its agencies, departments, or political subdivisions, regulated under Article 15 of A.A.C. R18-2.

[A.A.C. R18-2-602(C)(4)]

4. Point Sources

a. General

(1) As used in Conditions I.B.4.a through I.B.4.e, all terms shall have the meaning given in A.A.C. R18-2-101 and R18-2-701.

(2) Conditions I.B.4.b through I.B.4.e shall apply only to sources that are all of the following:

[A.A.C. R18-2-702(A)]

(a) Existing sources;

[A.A.C. R18-2-702(A)(1)]

(b) Point sources. For the purposes of this condition, "point source" means a source of air contaminants that has an identifiable plume or emissions point; and

[A.A.C. R18-2-702(A)(2)]

(c) Stationary sources.

[A.A.C. R18-2-702(A)(3)]

b. Visible Emissions

The Permittee shall not cause, allow, or permit visible emissions in excess of 20 percent opacity as determined by Reference Method 9 in appendix A to 40 CFR part 60.

[A.A.C. R18-2-406(A)(4), R18-2-702(B)]

c. Abrasive Blasting

The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through

the use of good modern practices. Good modern practices include, but are not limited to, wet blasting and the use of effective enclosures with necessary dust collecting equipment.

[A.A.C. R18-2-726]

d. Spray Painting Operations

While performing spray painting operations the Permittee shall comply with the following requirements:

(1) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.

[A.A.C. R18-2-727(A)]

(2) The Permittee shall not employ, apply, evaporate or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes.

[A.A.C. R18-2-727(B), R18-2-727(B)(1)]

(3) The Permittee shall not thin or dilute any architectural coating with a photochemically reactive solvent.

[A.A.C. R18-2-727(B), R18-2-727(B)(2)]

(4) For the purposes of Conditions I.B.4.d(2) and I.B.4.d(3), a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Conditions I.B.4.d(4)(a) through I.B.4.d(4)(c), or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent:

[A.A.C. R18-2-727(C)]

(a) A combination of the following types of compounds having an olefinic or cycle-olefinic type of unsaturation - hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: five percent.

[A.A.C. R18-2-727(C)(1)]

(b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: eight percent.

[A.A.C. R18-2-727(C)(2)]

(c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent.

[A.A.C. R18-2-727(C)(3)]

(5) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups or organic compounds described in

Conditions I.B.4.d(4)(a) through I.B.4.d(4)(c), it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents.

[A.A.C. R18-2-727(D)]

e. Solvent Cleaning / Degreasing / Dipping Operations

The Permittee shall process, store, use, and transport materials including solvents or volatile compounds in such a manner and by such means that they will not evaporate, leak, escape, or be otherwise discharged into the atmosphere so as to cause or contribute to air pollution. Where means are available to reduce effectively the contribution to air pollution from evaporation, leakage, or discharge, the installation and usage of such control methods, devices, or equipment shall be mandatory.

[A.A.C. R18-2-730(F)]
Not Federally Enforceable [A.A.C. R18-2-306(B)(2)]

f. Air Pollution

The following conditions apply to existing sources, as that term is defined in A.A.C. R18-2-101, that are not otherwise subject to standards of performance under A.A.C. Title 18, Chapter 2, Articles 7, 9, or 11.

(1) The Permittee shall not cause, allow, or permit gaseous or odorous materials to be emitted from equipment, operations or premises under its control in such quantities or concentrations as to cause air pollution.

[A.A.C. R18-2-730(D)]
Not Federally Enforceable [A.A.C. R18-2-306(B)(2)]

(2) Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the owner or operator thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.

[A.A.C. R18-2-730(G)]
Not Federally Enforceable [A.A.C. R18-2-306(B)(2)]

5. Mobile Sources

a. General

(1) The requirements of Conditions I.B.5.b and I.B.5.c are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations.

[A.A.C. R18-2-801]

(2) The requirements of Conditions I.B.5.b and I.B.5.c shall not apply to portable sources.

[A.A.C. R18-2-801]

b. Off-road Machinery

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. Off-road machinery shall include trucks, graders, scrapers, rollers and other construction and mining machinery not normally driven on a completed public roadway.

[A.A.C. R18-2-802]

c. Roadway and Site Cleaning Machinery

(1) The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C. R18-2-804(A)]

(2) The Permittee shall not cause, allow, or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants, wetting, chip seal, gravel, temporary paving, controlling vehicle access, limiting vehicle speed, revegetation, vacuuming, sweeping, and hydro-seeding. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

[A.A.C. R18-2-804(B)]

6. Demolition/Renovation

The Permittee shall comply with all applicable requirements of 40 CFR part 61, subpart M.

[A.A.C. R18-2-1101(A)(8) {40 CFR 61 subpart M by ref.}]

7. Nonvehicle Air Conditioner Maintenance and/or Services

The Permittee shall comply with all applicable requirements of 40 CFR part 82, subpart F.

[40 CFR 82 subpart F]

8. General Limitation on Visible Emissions

The Permittee shall not cause or permit the airborne diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions became airborne.

a. In actual practice, the airborne diffusion of visible emissions across property lines shall be prevented by appropriately controlling the emissions at the point of discharge, or ceasing entirely the activity or operation which is causing or contributing to the emissions.

b. Condition I.B.8.a shall not apply when the naturally induced wind speed exceeds 25 miles per hour as estimated by a certified visible emission evaluator using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by a U.S. Weather Bureau Section or a U.S. Government military installation.

c. The exception in Condition I.B.8.b shall not apply to the demolition, destruction, transport, or pulverization of structures containing friable asbestos materials, and all dust producing activities associated with such sources shall be halted when the wind is causing or contributing visible emissions to cross beyond the property lines within which the emissions discharge.

d. Any disregard of, neglect of, or inattention to other controls required herein, during any time when Condition I.B.8.b is in effect, shall automatically waive the exception in Condition I.B.8.b, and such relaxation of controls shall be a violation.

[Pima County Applicable SIP, Rule 343]

C. Monitoring, Recordkeeping, and Reporting Requirements

1. Property Boundary Visible Emissions Monitoring

a. Property Boundary Line with the Rillito Community

(1) *The Permittee shall install* and operate, during daylight hours, *cameras for monitoring and recording visible emissions across the property boundary line with the Rillito Community, in accordance with the following*:

(a) *The Permittee shall use Panasonic WV-NP1004 cameras, or cameras of equivalent or better resolution*, set to the highest possible image resolution. The Permittee shall implement a system to keep the lenses clean to the extent practicable.

(b) Install two cameras located along the north boundary of the facility, looking east. The first camera shall be located at the southwestern end of the Waste Water Treatment Plant (WWTP), looking along the fenceline of the WWTP. The second camera shall be located east of the WWTP. The cameras shall be mounted high enough to see over any obstacles, including obstacles along the contractor's road.

(c) Each camera shall record an image every six minutes.

(2) The Permittee shall comply with the following:

(a) Review the data on a daily basis each business day and on holidays or weekends when coal unloading occurs.

(b) If review of the data shows visible emissions related to the Permittee's operations or activities crossing the property boundary line, the Permittee shall report to the Director following the excess emission reporting procedures in Section XII of Attachment "A" of this permit.

(c) Take appropriate corrective action if review of the data shows visible emissions related to the Permittee's operations or activities crossing the property boundary line.

(d) Submit the camera data to the Director on a monthly basis. The Permittee shall submit the stored images on a compact disc(s) or other electronic submittal system as approved by the Director.

(e) The cameras shall be programmed to record, on the images, the date and time the images were recorded.

(3) During periods of camera downtime or maintenance, the Permittee shall conduct a daily visible emissions survey of the property boundary line with the Rillito Community, in accordance with EPA Reference Method 22. The daily survey shall be conducted during any coal unloading activity that occurs in daylight hours. If no coal unloading activity is to occur during daylight hours the survey may be conducted at any time during daylight hours. If any visible emissions are observed to cross the property boundary line with the Rillito Community, the Permittee shall follow the excess emission reporting procedures in Section XII of Attachment "A."

[A.A.C. R18-2-306(A)(3)(c), R18-2-331(A)(3)(c), and R18-2-331(B)]
[Material permit conditions are indicated by underline and italics]

b. Other Property Boundary Lines

For all property boundary lines other than the property boundary line with the Rillito Community, the Permittee shall conduct a daily visible emissions survey during daylight hours in accordance with EPA Reference Method 22. If visible emissions related to the Permittee's operations are observed to cross a property boundary line, the Permittee shall report the emissions using the excess emission reporting procedures in Section XII of Attachment "A" of this permit.

[A.A.C. R18-2-306(A)(3)(c)]

c. For each daily visible emissions survey required by Conditions I.C.1.a and I.C.1.b, the Permittee shall maintain the following records:

(1) Location, date, time of observation;

(2) Name of the observer;

(3) Results of the observation;

(4) If corrective action was necessary, a description of the corrective action

[A.A.C. R18-2-306(A)(3)(c)]

2. Visible Emissions Observation Plan

The Permittee shall conduct Visible Emissions Observation Procedures at least once each calendar month in accordance with Conditions I.C.2.a through I.C.2.f.

[A.A.C. R18-2-306(A)(3)(c)]

a. At least 90 days before the initial firing of fuel in Kiln 6, the Permittee shall submit a Visible Emissions Observation Plan to be approved by the Director. The submittal required by Condition I.Q of Attachment "B" to this permit may be used to satisfy this condition. The plan shall identify a central lookout station or multiple observation points, as appropriate, from where fugitive emissions, shall be monitored. When multiple observation points are used, all fugitive emissions associated with each observation point shall be specifically identified within the observation plan.

[A.A.C. R18-2-306(A)(3)(c)]

b. A certified EPA Reference Method 9 observer shall conduct a visual survey of visible emissions from fugitive emissions in accordance with the Visible Emissions Observation Plan, under representative operating conditions.

[A.A.C. R18-2-306(A)(3)(c)]

c. The Permittee shall keep a record of the name of the observer, the date and time on which the observation was made, the location(s) of the observation, and the results of the observation.

[A.A.C. R18-2-306(A)(3)(c)]

d. If the observer sees a plume from a fugitive emissions source that on an instantaneous basis appears to exceed the applicable opacity standard, then the observer shall, if practicable, take a six-minute EPA Reference Method 9 observation of the plume.

[A.A.C. R18-2-306(A)(3)(c)]

e. If the six-minute opacity of the plume is less than the applicable opacity standard, the observer shall make a record of the following:

(1) Location, date, and time of the observation;

(2) The results of the EPA Reference Method 9 observation; and

(3) The name of the observer.

[A.A.C. R18-2-306(A)(3)(c)]

f. If the six-minute opacity of the plume exceeds the applicable opacity standard, then Permittee shall do the following:

(1) Adjust or repair the controls or equipment to reduce opacity to below the applicable opacity standard;

(2) Record corrective actions;

(3) Report as an excess emission in accordance with Section XII of Attachment "A" of this permit; and

(4) Conduct a six-minute EPA Reference Method 9 observation reading within 48 hours after taking corrective action. The results of this observation including date, time, name of the observer, and location shall be recorded.

[A.A.C. R18-2-306(A)(3)(c)]

g. Any changes to the Visible Emissions Observation Plan approved by the Director shall be made only with the prior approval of the Director.

[A.A.C. R18-2-306(A)(3)(c)]

3. The Permittee shall maintain records of maintenance activities conducted on the paved roads identified in Condition I.B.2.d.

[A.A.C. R18-2-306(A)(3)(c)]

4. Fugitive Dust Control Plans

At least 180 days before the date on which Kiln 6 becomes operational, the Permittee shall submit a Kiln 6 Dust Control Plan. The plan shall be submitted using the appropriate permit revision mechanism in Title 18, Chapter 2, Article 3 of the Arizona Administrative Code. The plan shall contain, at a minimum, all of the following information:

[A.A.C. R18-2-306(A)(3)(c)]

a. Names, address(es), and phone numbers of person(s) responsible for the preparation, maintenance, and implementation of each element of the Dust Control Plan.

[A.A.C. R18-2-306(A)(3)(c)]

b. Control measures or a combination thereof to be applied to all fugitive dust sources, before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays. The control measures specified in the Dust Control Plan shall address and shall be sufficient to ensure compliance with Condition I.B.2.e.

[A.A.C. R18-2-306(A)(3)(c)]

c. A drawing that shows:

(1) Entire project site boundaries;

(2) Acres to be disturbed with linear dimensions;

(3) Nearest public roads;

(4) North arrow; and

(5) Planned exit locations onto paved public roadways.

[A.A.C. R18-2-306(A)(3)(c)]

d. Initial test results demonstrating that compliance with Condition I.B.2.e will be maintained.

[A.A.C. R18-2-306(A)(3)(c)]

e. Adequate recordkeeping measures to monitor the dust suppressant or water application rates.

[A.A.C. R18-2-306(A)(3)(c)]

f. The Permittee shall maintain records of each instance of operation not consistent with the current Dust Control Plan. Each such instance shall be considered a period of excess emissions.

[A.A.C. R18-2-306(A)(4)]

g. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A" of this permit.

[A.A.C. R18-2-306(A)(5)(b)]

5. Recordkeeping for Fugitive Dust Work Practice Requirements

a. The Permittee shall maintain records of the dates on which any of the following activities were performed and all control measures which were employed:

(1) Constructing, altering, or demolishing a building or its appurtenances;

(2) Constructing or reconstructing a roadway, driveway, or parking area. Construction and reconstruction activities at the quarry and the aggregate plant, are not subject to this condition.

[A.A.C. R18-2-306(A)(3)(c)]

b. The Permittee shall document deviations from the control measures used for the following activities by recording the date, time, and reason for the deviation:

(1) When moving or excavating earth,

(2) When using parking lots or driveways, and

(3) When engaging in the activities described in Conditions I.B.1.c(3) through I.B.1.c(7).

[A.A.C. R18-2-306(A)(3)(c)]

6. Abrasive Blasting

Each time an abrasive blasting project is conducted, the Permittee shall make a record of the following:

a. The date the project conducted;

b. The duration of the project; and

c. Type of control measures employed.

[A.A.C. R18-2-306(A)(3)(c)]

7. Spray Painting Operations

a. Except as provided in Condition I.C.7.b, each time a spray painting project is conducted, the Permittee shall make a record of the following:

(1) The date the project was conducted;

(2) The duration of the project;

(3) Type of control measures employed; and

(4) Material Safety Data Sheets for all paints and solvents used in the project.

[A.A.C. R18-2-306(A)(3)(c)]

b. Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of part a. above.

[A.A.C. R18-2-306(A)(3)(c)]

8. Mobile Sources

The Permittee shall keep a record of all emissions-related maintenance activities performed on all mobile sources subject to Condition I.B.5.

[A.A.C. R18-2-306(A)(3)(c)]

9. Demolition/Renovation

The Permittee shall comply with all applicable monitoring, recordkeeping, and reporting requirements of 40 CFR part 61, subpart M.

[A.A.C. R18-2-1101(A)(8) {40 CFR 61 subpart M by ref.}]

10. Nonvehicle Air Conditioner Maintenance and/or Services

The Permittee shall comply with all applicable monitoring, recordkeeping, and reporting requirements of 40 CFR part 82, subpart F.

[40 CFR 82 subpart F]

D. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: A.A.C. R18-2-601, R18-2-602, R18-2-604, R18-2-605, R18-2-606, R18-2-607, R18-2-612, R18-2-702(A), R18-2-702(B), R18-2-726, R18-2-727, R18-2-730(D), R18-2-730(F), R18-2-730(G), R18-2-730(H), R18-2-801, R18-2-802, R18-2-804, Pima County SIP Rule 343.

[A.A.C. R18-2-325]

II. QUARRY, LIMESTONE PROCESSING PLANT, AND OTHER MATERIAL HANDLING ACTIVITIES

The requirements of this section (Section II of Attachment "E") shall apply and shall replace Section III of Attachment "B" beginning on the date when any of Sections III through XIII of Attachment "E" becomes effective.

A. List of Emission Units

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Wet Drilling	Drilling of limestone	n/a	n/a
Limestone Blasting	Blasting with bulk blasting agent or explosive	n/a	n/a
Discharge of B2-PF1 to B2-VG1	Transfer Point, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Discharge of B2-VG1 to B2-BF1	Transfer Point, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Impact Crusher B2-IC1	Impact Crusher, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Discharge of B2-IC1 to B2-BF1	Transfer Point, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Discharge of B3-BC2 to B2-IC1	Transfer Point, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Discharge of B2-BF1 to B2-BC1	Transfer Point, 1200 tons per hour	Dust Collector (B2-DC1)	B2-DC1
Discharge of B2-DC1 to B2-BC1	Transfer Point	Dust Collector (B2-DC1)	B2-DC1
Discharge of B2-BC1 to B3-VS1	Transfer Point, 1200 tons per hour	Dust Collector (B3-DC1)	B3-DC1
Discharge of B3-VS1 to B3-BC1	Transfer Point, 1200 tons per hour	Dust Collector (B3-DC1)	B3-DC1
Discharge of B3-BC1 to B3-BC2	Transfer Point, 1200 tons per hour	Dust Collector (B3-DC1)	B3-DC1
Discharge of B3-VS1 to B3-BC3	Transfer Point, 1200 tons per hour	Dust Collector (B3-DC1)	B3-DC1
Discharge of B3-DC1 to B3-BC3	Transfer Point	Dust Collector (B3-DC1)	B3-DC1
Surge Storage Building B-4	Storage Building	n/a	n/a
Discharge of B5-BC1 to B5-BC2	Transfer Point, 1200 tons per hour	Dust Collector (B5-DC1)	B5-DC1
Discharge of B5-DC1 to B5-BC2	Transfer Point	Dust Collector (B5-DC1)	B5-DC1
Discharge of B5-BC2 to B5-BC3	Transfer Point, 1200 tons per hour	Dust Collector (B5-DC2)	B5-DC2
Discharge of B5-DC2 to B5-BC3	Transfer Point	Dust Collector (B5-DC2)	B5-DC2

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of B5-BC3 to B5-BC4	Transfer Point, 1200 tons per hour	Dust Collector (B5-DC3)	B5-DC3
Discharge of B5-DC3 to B5-BC4	Transfer Point	Dust Collector (B5-DC3)	B5-DC3
Discharge of B5-BC4 to B7-BC1	Transfer Point, 1200 tons per hour	Dust Collector (B7-DC1)	B7-DC1
Discharge of B7-DC1 to B7-BC1	Transfer Point	Dust Collector (B7-DC1)	B7-DC1
Stacker/Reclaimer Building	Storage Building	n/a	n/a
Discharge of B5-BC4 to B8-BC1	Transfer Point, 450 tons per hour	Dust Collector (B8-DC1)	B8-DC1
Discharge of B8-DC1 to B8-BC1	Transfer Point	Dust Collector (B8-DC1)	B8-DC1
Discharge of B8-BC1 to B8-BC1A	Transfer Point, 450 tons per hour	Dust Collector (B8-DC2)	B8-DC2
Rail Unloading to B9-PF1	Bulk Unloading System	Water Spray	n/a
Transfer from Loader to B9-PF1	Transfer Point	Water Spray	n/a
Discharge of B9-PF1 to B9-BC1	Transfer Point, 500 tons per hour	Dust Collector (B9-DC1)	B9-DC1
Discharge of B9-DC1 to B9-BC1	Transfer Point	Dust Collector (B9-DC1)	B9-DC1
Impact Crusher B9-IC	Impact Crusher, 500 tons per hour	n/a	n/a
Discharge from B9-IC to Trucks	Transfer Point	n/a	n/a
Discharge of B9-BC1 to B9-VS1	Transfer Point, 500 tons per hour	Dust Collector (B9-DC2)	B9-DC2
Discharge of B9-VS1 to B9-BC5	Transfer Point, 500 tons per hour	Dust Collector (B9-DC2)	B9-DC2
Discharge of B9-DC2 to B9-BC5	Transfer Point	Dust Collector (B9-DC2)	B9-DC2
Discharge of B9-BC3 to B9-BC2	Transfer Point, 500 tons per hour	Dust Collector (B9-DC2)	B9-DC2
Discharge of B8-DC2 to C2-BC4	Transfer Point	Dust Collector (B9-DC3)	B9-DC3
Discharge of B8-BC1A to B9-BC4	Transfer Point, 500 tons per hour	Dust Collector (B9-DC3)	B9-DC3
Discharge of B9-DC3 to B9-BC4	Transfer Point	Dust Collector (B9-DC3)	B9-DC3
Discharge of B9-BC2 to B9-BC4	Transfer Point, 500 tons per hour	Dust Collector (B9-DC3)	B9-DC3
Discharge of B9-BC5 to B9-BC4	Transfer Point, 500 tons per hour	Dust Collector (B9-DC3)	B9-DC3

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of B9-BC2 to B9-BC3	Transfer Point, 500 tons per hour	Dust Collector (B9-DC3)	B9-DC3
Discharge of B9-BC1 to B9-BC4	Transfer Point, 500 tons per hour	Dust Collector (B9-DC3)	B9-DC3
Discharge of B9-IC to B9-BC2	Transfer Point, 500 tons per hour	Dust Collector (B9-DC5)	B9-DC5
Discharge of B9-BC4-BF to B9-BC4	Transfer Point, 500 tons per hour	n/a	n/a
Discharge of C2-BC3 to C2-BC4	Transfer Point, 500 tons per hour	Dust Collector (C2-DC1)	C2-DC1
Discharge of C2-DC1 to C2-BC4	Transfer Point	Dust Collector (C2-DC1)	C2-DC1
Discharge of C2-BC3 to C2-BC7	Transfer Point, 525 tons per hour	Dust Collector (C2-DC1)	C2-DC1

B. Emission Limits/Standards

1. Operational Limitations

a. The Permittee shall not cause or allow blasting in the quarry to exceed 157 blasts per 365-day period.

[A.A.C. R18-2-306.01]

b. The Permittee shall not cause or allow bulk blasting agent or explosive usage in the quarry to exceed 2,211 tons per 365-day period.

[A.A.C. R18-2-306.01]

c. The Permittee shall not cause or allow the amount of limestone quarried and processed to exceed 8,000,000 tons per 365-day period.

[A.A.C. R18-2-306.01]

2. Particulate Matter Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector listed in Condition II.A any gases which contain particulate matter (PM) in excess of 0.005 gr/dscf, based on an average of three test runs of a minimum one hour duration each.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4)]

b. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector any gases which contain PM-10 in excess of the following emission rates, based on an average of three test runs of a minimum one hour duration each.

Emission Point ID Number	PM-10 Emission Limit (lbs/hr)
B2-DC1	0.81

Emission Point ID Number	PM-10 Emission Limit (lbs/hr)
B3-DC1	0.53
B5-DC1	0.11
B5-DC2	0.05
B5-DC3	0.08
B7-DC1	0.18
B8-DC1	0.08
B8-DC2	0.15
B9-DC1	0.16
B9-DC2	0.74
B9-DC3	0.39
B9-DC5	0.12
C2-DC1	0.08

[A.A.C. R18-2-306.01, R18-2-406(A)(5)]

c. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any Emission Unit listed in Condition II.A in total quantities in excess of the amounts calculated by one of the following equations:

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

$E = 3.59 \times P^{0.62}$

Where:

E = the maximum allowable emissions rate in pounds per hour.

P = the process weight rate in tons per hour

[SIP Rule 9-3-522(A)(2)(a)]

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 17.31 \times P^{0.16}$

Where “E” and “P” are defined as in Condition II.B.2.c(1).

[SIP Rule 9-3-522(A)(2)(b)]

d. The Permittee shall not cause to be discharged into the atmosphere from any Emission Unit listed in Condition II.A any emissions which exhibit greater than 20 percent opacity.

[A.A.C. R18-2-702(B)(1)]

e. Spray bar pollution controls shall be utilized in accordance with "EPA Control of Air Emissions From Process Operations in the Rock Crushing Industry" (EPA 340/1-79-002), "Wet Suppression System" (pages 15-34), amended as of January, 1979 (and no future amendments or editions), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of spray bars and nozzles as required by the control officer to minimize air pollution.

[A.A.C. R18-2-722(D)]

C. Air Pollution Control Requirements

At all times when any Emission Unit listed in Condition II.A is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, install, maintain and *operate the associated Dust Collector or Water Spray in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(d) and (e); R18-2-331(B); R18-2-403(A)(1); and R18-2-406(A)(4)]

Material Permit Conditions are indicated with underline and italics.

D. Monitoring, Recordkeeping, and Reporting Requirements

1. Monitoring and Recordkeeping for Operational Limitations

a. The Permittee shall maintain daily records of the number of blasts performed in the quarry.

[A.A.C. R18-2-306(A)(3)(c)]

b. The Permittee shall maintain daily records of the quantity and type of explosive used.

[A.A.C. R18-2-306(A)(3)(c)]

c. The Permittee shall maintain daily records of the amount of limestone quarried.

[A.A.C. R18-2-306(A)(3)(c)]

2. Monitoring and Recordkeeping for Particulate Matter Emissions

a. Visible Emissions Observations

(1) The Permittee shall conduct Visible Emissions Observation Procedures of nonpoint sources, and where applicable, fugitive emissions, at least once each calendar month in accordance with Conditions I.C.2.a through I.C.2.f.

[A.A.C. R18-2-306(A)(3)(c)]

(2) The Permittee shall conduct a monthly visible emissions observation of the exhaust from each dust collector listed in Condition II.A in accordance with EPA Reference Method 22. If visible emissions are observed during the monthly visible emissions observation, the Permittee shall initiate investigation of the dust collector within 24 hours of the occurrence, to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Condition II.B.2.

[A.A.C. R18-2-306(A)(3)(c)]

b. Monitoring and Recordkeeping for Dust Collectors

(1) *The Permittee shall install, calibrate*, maintain, and operate, *according to the manufacturer's specifications, devices for monitoring and recording the pressure drop across each dust collector listed in Condition II.A.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3), R18-2-331(A)(3)(c), R18-2-331(B), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]
Material Permit Conditions are indicated with underline and italics.

(2) The Permittee shall perform monthly inspections of each dust collector listed in Condition II.A, and the associated pressure drop continuous parameter monitoring systems, in accordance with the manufacturers' recommended procedures. The Permittee shall take corrective action following the discovery of any abnormal operation or required maintenance of any dust collector pressure drop continuous parameter monitoring system as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions, but no later than within 24 hours following detection.

[A.A.C. R18-2-306(A)(3), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

(3) If a monthly inspection performed pursuant to Condition II.D.2.b(2) indicates that the pressure drop across any dust collector is outside the range established pursuant to Condition II.E.3, the Permittee shall initiate investigation of the dust collector within 24 hours of the occurrence, to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Condition II.B.2.

[A.A.C. R18-2-306(A)(3), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

c. Monitoring and Recordkeeping for Process Weight Rate

(1) *The Permittee shall install, calibrate*, maintain, and operate *monitoring devices which can be used to determine daily the process weight of crushed stone produced. The weighing devices shall have an accuracy of ± five percent over their operating range.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and SIP Rule 9-3-522(B)(1)]
Material Permit Conditions are indicated with underline and italics.

(2) The Permittee shall maintain a record of daily production rates of crushed stone produced.

[SIP Rule 9-3-522(B)(2)]

3. Reporting of Performance Test Results

The Permittee shall submit written reports of the results of all performance tests required by Conditions II.E.1 and II.E.2.

[A.A.C. R18-2-306(A)(5), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

4. Notification Requirements for Kiln 6 Project

a. On or before the date that Section II of Attachment "E" becomes effective, the Permittee shall submit written notification of the schedule for shutting down or modifying the emissions units covered by Sections III and VII of Attachment "B."

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

b. The notification required by Condition II.D.4.a shall include an updated PM netting analysis and an updated PM-10 emissions offset analysis for the Kiln 6 project.

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

E. Testing Requirements

The Permittee shall determine initial compliance with Conditions II.B.2.a through II.B.2.c in accordance with Conditions II.E.1 and II.E.2.

[A.A.C. R18-2-306(A)(3)(c), R18-2-312, R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

1. For each Dust Collector listed in Condition II.A, initial performance tests shall be performed within 90 days after achieving the maximum production rate at which the affected source will be operated, but not later than 180 days after initial startup of such affected source.

2. Performance tests required by Condition II.E.1 shall be conducted as follows.

a. The Permittee shall use EPA Reference Method 1 in appendix A to 40 CFR part 60 for sample and velocity traverses.

[SIP Rule 9-3-522(C)(1)]

b. The Permittee shall use EPA Reference Method 2 in appendix A to 40 CFR part 60 for velocity and volumetric flow rate.

[SIP Rule 9-3-522(C)(1)]

c. The Permittee shall use EPA Reference Method 3 in appendix A to 40 CFR part 60 for gas analysis.

[SIP Rule 9-3-522(C)(1)]

d. The Permittee shall use EPA Reference Method 4 in appendix A to 40 CFR part 60 for determination of moisture content.

[SIP Rule 9-3-522(C)(1)]

e. The Permittee shall use any of the following test methods to determine the PM-10 concentration:

(1) EPA Reference Method 5 in appendix A to 40 CFR part 60;

(2) EPA Reference Method 201 in appendix M to 40 CFR part 51; or

(3) EPA Reference Method 201a in appendix M to 40 CFR part 51.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

f. The Permittee shall use EPA Reference Method 5 in appendix A to 40 CFR part 60 for concentration of particulate matter.

[SIP Rule 9-3-522(C)(2)]

g. Each performance test shall consist of three separate runs. The average of the three runs shall be used to determine compliance.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

h. Each run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5); SIP Rule 9-3-522(C)(2)]

i. Sampling shall not be started until thirty minutes after startup and shall be terminated before shutdown procedures commence.

[SIP Rule 9-3-522(C)(2) and A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

3. For each dust collector subject to the requirements of Condition II.D.2.b, during each performance test conducted pursuant to Condition II.E.1, the Permittee shall determine a range of pressure drop values for the dust collector using the following procedures:

a. During each performance test run, continuously monitor and record the pressure drop across the dust collector as required under Condition II.D.2.b(1);

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

b. Determine a range of dust collector pressure drop values and associated averaging time, based on the pressure drop data monitored during the

performance test. The pressure drop range shall be expressed in units of inches of water column ("in. w.c."). The maximum pressure drop (i.e., the high end of the range) shall be 3.0 in. w.c. greater than the arithmetic average of the pressure drop readings during the performance test. The minimum pressure drop (i.e., the low end of the range) shall be either one-half the arithmetic average of the pressure drop readings during the performance test or 3.0 in. w.c. less than the arithmetic average of the pressure drop readings during the performance test, whichever is greater.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

F. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: A.A.C. R18-2-702 and R18-2-722; SIP Rule 9-3-522.

[A.A.C. R18-2-325]

III. COAL PREPARATION PLANT

The requirements of this section (Section III of Attachment "E") shall apply and shall replace Section IV of Attachment "B" beginning on the first date when any new or modified emissions unit listed in Condition III.A becomes operational. Each new and modified unit listed in Condition III.A shall be deemed operational on the first calendar day following installation or modification when its 24-hour average production rate exceeds 90 percent of its nominal capacity, or on the 30th day following initial use for new equipment or modification for modified equipment, whichever is earlier.

A. List of Emission Units

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Rail Unloading of Coal	Bulk Unloading System	Water Spray	n/a
Rail Unloading of Petroleum Coke	Bulk Unloading System	n/a	n/a
Transfer from Loader to R6-VF1	Transfer Point	Water Spray	n/a
Truck Loadout of Coal Mill Rejects	Bulk Loading System	n/a	n/a
Truck Dump to Storage Pile	Bulk Unloading System	n/a	n/a
Discharge from R6-VF1 to R6-BC1A	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-VF2 to R6-BC1A	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC1A to R6-BC4	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC4 to R6-RDS	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-RDS to Storage Pile	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC1A to R6-BC1B	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC1B to Trucks	Transfer Point	n/a	n/a
Discharge from R6-BC1B to R6-SB	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC2 to R6-RP1	Transfer Point, 50 tons per hour	n/a	n/a
Discharge from R6-RP1 to R6-BC3	Transfer Point, 50 tons per hour	n/a	n/a
Discharge from R6-BC3 to R6-BE1	Transfer Point, 50 tons per hour	n/a	n/a
Discharge from R6-BE1 to R6-BC5	Transfer Point, 300 tons per hour	n/a	n/a

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge from R6-BC5 to R6-BC6	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC1B to R6-BC6	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC6 to R6-RP2	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-RP2 to H3-SB1	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from R6-BC7 to H3-SB2	Transfer Point, 300 tons per hour	n/a	n/a
Discharge from H3-SB2 to H3-BC2	Transfer Point, 40 tons per hour	n/a	n/a
Discharge from H3-BC2 to H3-BC3	Transfer Point, 40 tons per hour	n/a	n/a
Discharge from H3-BC3-DG to H3-CM1-SCF	Transfer Point, 40 tons per hour	n/a	n/a
Discharge from H3-DC3 to H3-SB4	Transfer Point	Dust Collector (H3-DC3)	H3-DC3
Discharge from H3-DC1-SC to H3-SB3	Transfer Point	Dust Collector (H3-DC2)	H3-DC2
Coal Mill H3-K4-CM	Thermal Dryer, 25 tons per hour	Dual Dust Collector (H3-K4-DC1&2)	H3-K4-DC1&2
Coal Mill H3-CM1	Thermal Dryer, 40 tons per hour	Dust Collector (H3-DC1)	H3-DC1
Discharge of H3-K4-WF1-SB to H3-K4-WF1	Transfer Point	Dual Dust Collector (H3-K4-DC1&2)	H3-K4-DC1&2
Discharge of H3-K4-WF2-SB to H3-K4-WF2	Transfer Point	Dual Dust Collector (H3-K4-DC1&2)	H3-K4-DC1&2

B. Emission Limits and Standards

1. Particulate Matter Emission Standards for Unmodified Existing Sources

The requirements of Conditions III.B.1.a and III.B.1.b shall apply to the following emissions units listed in Condition III.A: Truck Loadout of Coal Mill Rejects (Bulk Loading System) and Truck Dump to Storage Pile (Bulk Unloading System).

a. The Permittee shall not cause or allow to be emitted into the atmosphere from any existing source any gases which exhibit opacity greater than 20 percent, based on a 6-minute block average, as determined by EPA Reference Method 9 in appendix A to 40 CFR part 60.

[A.A.C. R18-2-702(B)(1)]

b. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere, in any one hour from any coal

preparation plant in total quantities in excess of the amounts calculated by one of the following equations:

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

$E = 3.59 \times P^{0.62}$

Where:

E = the maximum allowable emissions rate in pounds per hour.

P = the process weight rate in tons per hour

[SIP Rule 9-3-516(A)(2)(a)]

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 17.31 \times P^{0.16}$

Where "E" and "P" are defined as in Condition III.B.1.b(1).

[SIP Rule 9-3-516(A)(2)(b)]

2. Particulate Matter Emission Standards for Modified Existing Sources

The requirements of Conditions III.B.2.a and III.B.2.b shall apply to the following emissions units listed in Condition III.A: Rail Unloading of Coal (Bulk Unloading System); Rail Unloading of Petroleum Coke (Bulk Unloading System); and Discharge from R6-RDS to Storage Pile (Transfer Point).

a. The Permittee shall not cause or allow to be emitted into the atmosphere from any Bulk Loading System or rail unloading operation any gases which exhibit opacity greater than 5 percent, based on a 6-minute block average, as determined by EPA Reference Method 9 in appendix A to 40 CFR part 60.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-702(B)(1)}]

b. The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere, in any one hour from any coal preparation plant in total quantities in excess of the amounts calculated by one of the following equations:

(1) For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable particulate emissions shall be determined by the following equation:

$E = 3.59 \times P^{0.62}$

Where:

E = the maximum allowable emissions rate in pounds per hour.

P = the process weight rate in tons per hour

[SIP Rule 9-3-516(A)(2)(a)]

(2) For process sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$E = 17.31 \times P^{0.16}$

Where "E" and "P" are defined as in Condition III.B.2.b(1).

[SIP Rule 9-3-516(A)(2)(b)]

3. Particulate Matter Emission Standards for New Sources

The requirements of Conditions III.B.3.a through III.B.3.d shall apply to all Emissions Units listed in Condition III.A except for bulk loading systems, bulk unloading systems, and the transfer from the R6-RDS to the storage pile.

a. The Permittee shall not cause or allow to be emitted into the atmosphere from any thermal dryer listed in Condition III.A any gases which contain particulate matter (PM) in excess of 0.031 grains per dry standard cubic foot.

[A.A.C. R18-2-901(32) {40 CFR § 60.252(a)(1)}]

b. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector listed in Condition III.A any gases which contain particulate matter (PM) in excess of 0.005 gr/dscf, based on an average of three test runs of a minimum one hour duration each.

[A.A.C. R18-403(A)(1) and R18-2-406(A)(4)}]

c. *The Permittee shall not cause or allow to be emitted into the atmosphere from any Conveyor Transfer Point or any Dust Collector listed in Condition III.A any gases which exhibit opacity greater than 20 percent, based on a 6-minute block average.*

[A.A.C. R18-2-331(A)(3)(f) and R18-2-901(32) {40 CFR § 60.252(a)(2)}]
Material Permit Conditions are indicated with underline and italics.

d. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector gases which contain particulate matter (PM) in excess of the following emission rates, based on an average of three test runs of a minimum one hour duration each.

Emission Point ID Number	PM Emission Limit (lbs/hr)
H3-DC1	1.72
H3-DC2	0.01

Emission Point ID Number	PM Emission Limit (lbs/hr)
H3-DC3	0.01
H3-K4-DC1&2	0.87

[A.A.C. R18-2-306.01 and R18-2-406(A)(5)]

4. The Permittee shall maintain and operate Dust Collector H3-DC1 such that the alarm of the associated Bag Leak Detection System, as required by Condition III.D.2.a, is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period.

[A.A.C. R18-2-406(A)(4) and R18-2-406(A)(5)]

C. Air Pollution Control Requirements

At all times when any Emission Unit listed in Condition III.A is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, install, maintain *and operate the associated Dust Collector or Water Spray in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(d) and (e); R18-2-331(B); and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

D. Monitoring, Recordkeeping, and Reporting Requirements

1. Coal Mills

a. *For Coal Mills H3-K4-CM and H3-CM1, the Permittee shall install, calibrate*, maintain, and continuously operate *a device for monitoring the temperature of the gas stream at the exit of the Coal Mill.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-901(32) {40 CFR § 60.253(a)}]
Material Permit Conditions are indicated with underline and italics.

(1) The temperature monitoring device is to be certified by the manufacturer to be accurate within ± 3 °F.

[A.A.C. R18-2-901(32) {40 CFR § 60.253(a)}]

(2) The temperature monitoring device shall be recalibrated annually in accordance with procedures under 40 CFR § 60.13(b). This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-901(32) {40 CFR § 60.253(b)}]
Material Permit Conditions are indicated with underline and italics.

2. Monitoring and Recordkeeping for Dust Collector H3-DC1

a. *The Permittee shall install, calibrate,* maintain, *and operate a Bag Leak Detection System for detecting leaks in Dust Collector H3-DC1.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3)(c) and (d), R18-2-331(A)(3)(c), and R18-2-331(B)]
Material Permit Conditions are indicated with underline and italics.

b. The Bag Leak Detection System required by Condition III.D.2.a shall meet the requirements of Conditions III.D.2.b(1) through III.D.2.b(11).

(1) The Bag Leak Detection System must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0044 grains per actual cubic foot or less. "Certify" shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is 0.0044 grains per actual cubic foot or less.

[A.A.C. R18-2-306(A)(3)(c) and (d)]

(2) The sensor on the Bag Leak Detection System must provide output of relative PM emissions.

[A.A.C. R18-2-306(A)(3)(c) and (d)]

(3) The Bag Leak Detection System must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

[A.A.C. R18-2-306(A)(3)(c) and (d)]

(4) The presence of an alarm condition should be clearly apparent to facility operating personnel.

[A.A.C. R18-2-306(A)(3)(c)]

(5) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.

[A.A.C. R18-2-306(A)(3)(c) and (d)]

(6) The Bag Leak Detection System must be installed, operated, adjusted, and maintained so that it is based on the manufacturer's written specifications and recommendations.

[A.A.C. R18-2-306(A)(3)(c) and (d)]

(7) The baseline output of the Bag Leak Detection System must be established as follows:

[A.A.C. R18-2-306(A)(3)(c)]

(a) Adjust the range and the averaging period of the device; and

[A.A.C. R18-2-306(A)(3)(c)]

(b) Establish the alarm set points and the alarm delay time.

[A.A.C. R18-2-306(A)(3)(c)]

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan required by Condition III.D.1.a. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1 calendar year period unless the Permittee certifies in writing to the Director that the Dust Collector has been inspected and found to be in good operating condition.

[A.A.C. R18-2-306(A)(3)(c)]

(9) The Permittee shall continuously record the output from the Bag Leak Detection System during periods of normal operation. Normal operation does not include periods when the Bag Leak Detection System is being maintained or during startup, shutdown or malfunction.

[A.A.C. R18-2-306(A)(3)(c)]

(10) Except as provided in Condition III.D.2.b(11), each time the alarm activates, alarm time will be counted as the actual amount of time taken by the Permittee to initiate corrective actions.

[A.A.C. R18-2-306(A)(3)(c)]

(11) If inspection of the Dust Collector demonstrates that no corrective actions are necessary, no alarm time will be counted.

[A.A.C. R18-2-306(A)(3)(c)]

c. Each 6-month block period for which the Bag Leak Detection System alarm time, as determined in accordance with Conditions III.D.2.b(9) through III.D.2.b(11), exceeds the limit established in Condition III.B.4 shall be considered a period of excess emissions.

[A.A.C. R18-2-306(A)(5)(b)]

d. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A" of this permit.

[A.A.C. R18-2-306(A)(5)(b)]

3. Monitoring and Recordkeeping for Dust Collectors H3-DC2, H3-DC3, and H3-K4-DC1&2

a. Visible Emissions Observations

The Permittee shall conduct a monthly visible emissions observation of the exhaust from each dust collector in accordance with EPA Reference Method 22. If visible emissions are observed during the monthly visible emissions observation, the Permittee shall initiate investigation of the dust collector within 24 hours of the occurrence, to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Condition III.B.3.

[A.A.C. R18-2-306(A)(3)(c)]

b. Monitoring and Recordkeeping for Dust Collectors

(1) *The Permittee shall install, calibrate*, maintain, and operate, according to the manufacturer's specifications, *a device for monitoring and recording the pressure drop across each dust collector*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]
Material Permit Conditions are indicated with underline and italics.

(2) The Permittee shall perform monthly inspections of each dust collector listed in Condition III.A and the associated pressure drop continuous parameter monitoring system in accordance with the manufacturers' recommended procedures. The Permittee shall take corrective action following the discovery of any abnormal operation or required maintenance of any dust collector or the associated pressure drop continuous parameter monitoring system as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions, but no later than within 24 hours following detection.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

(3) If a monthly inspection performed pursuant to Condition III.D.3.b indicates that the pressure drop across any dust collector is outside the range established pursuant to Condition III.E.2.f, the Permittee shall initiate investigation of the control equipment within 24 hours of the occurrence to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Conditions III.B.3.b and III.B.3.d.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

4. Notification Requirements for Kiln 6 Project

a. On or before the date that Section III of Attachment "E" becomes effective, the Permittee shall submit written notification of the schedule for shutting down or modifying the emissions units covered by Section IV of Attachment "B."

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

b. The notification required by Condition III.D.4.a shall include an updated PM netting analysis and an updated PM-10 emissions offset analysis for the Kiln 6 project.

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

E. Testing Requirements

1. Testing for Existing Sources

The Permittee shall conduct performance tests on all existing sources subject to Conditions III.B.1.a and III.B.2.a by December 31, 2013, in accordance with EPA Reference Method 9 in appendix A to 40 CFR part 60.

[A.A.C. R18-2-306(A)(3)(c)]

2. Testing for New Sources

a. The Permittee shall perform initial and periodic performance tests in accordance with Conditions III.E.2.b through III.E.2.e. Initial performance tests shall be performed within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility.

[A.A.C. R18-2-406(A)(4), R18-2-901(1) {40 CFR 60.8(a)}]

b. For each performance test required pursuant to Condition III.E.2.a, the Permittee shall submit a test plan to the Director in accordance with Condition XVIII.D of Attachment "A."

[A.A.C. R18-2-312(B)]

c. The Permittee shall determine initial compliance with Condition III.B.3.a using the test methods and procedures in Conditions III.E.2.c(1) through III.E.2.c(3).

[A.A.C. R18-2-901(32) {40 CFR § 60.254(b)}]

(1) EPA Reference Method 5 in appendix A to 40 CFR part 60 shall be used to determine the particulate matter concentration.

[A.A.C. R18-2-901(32) {40 CFR § 60.254(b)(1)}]

(2) The sampling time and sample volume for each run shall be at least 60 minutes and 30 dscf.

[A.A.C. R18-2-901(32) {40 CFR § 60.254(b)(1)}]

(3) Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

[A.A.C. R18-2-901(32) {40 CFR § 60.254(b)(1)}]

d. The Permittee shall determine initial compliance with Condition III.B.3.c using EPA Reference Method 9 in appendix A to 40 CFR part 60 and the procedures in 40 CFR § 60.11 to determine opacity.

[A.A.C. R18-2-901(32) {40 CFR § 60.254(b)(2)}]

e. The Permittee shall demonstrate initial compliance with Conditions III.B.3.b and III.B.3.d by conducting performance tests as follows.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(1) Performance tests shall be conducted using Method 5 of appendix A to 40 CFR part 60.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(2) Each performance test shall consist of three separate runs.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(3) Each test run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(4) The average of the three runs shall be used to determine compliance.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

f. For each dust collector subject to the requirements of Condition III.D.3.b, during each performance test conducted pursuant to Condition III.E.2.e, the Permittee shall determine a range of pressure drop values for the dust collector using the following procedures:

(1) During each performance test run, continuously monitor and record the pressure drop across the dust collector as required under Condition III.D.3.b(1);

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

(2) Determine a range of dust collector pressure drop values and associated averaging time, based on the pressure drop data monitored during the performance test. The maximum pressure drop (i.e., the high end of the range) shall be 3.0 in. w.c. greater than the arithmetic average of the pressure drop readings during the performance test. The minimum pressure drop (i.e., the low end of the range) shall be either one-half the arithmetic average of the pressure drop readings during the performance test or 3.0 in. w.c. less than the arithmetic average of the pressure drop readings during the performance test, whichever is greater.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

g. For any affected facility for which the initial performance tests required by Condition III.E.2.a are performed with more than three years remaining in the permit term, the performance tests required by Condition III.E.2.a shall be repeated once during the permit term.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

F. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR 60 subpart Y, A.A.C. R18-2-702, A.A.C. R18-2-901(32), SIP Rule 9-3-516(A)(2).

[A.A.C. R18-2-325]

IV. KILN 6, RAW MILL, AND CLINKER COOLER

The requirements of this section (Section IV of Attachment "E") shall apply and shall replace Section V of Attachment "B" beginning on the date when Kiln 6 becomes operational. Kiln 6 shall be deemed operational on the first calendar day when its 30-day rolling average production rate exceeds 6,480 tons of cement clinker per day, or on the 180th day following initial firing of fuel, whichever is earlier.

A. List of Emission Units

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Kiln 6 (H3-K6) with Inline Raw Mill (D4-RM1)	Dry process; 300 tons clinker per hour	Selective Non-Catalytic Reduction (H4-SNCR) Baghouse (H5-GB)	Kiln 6 Stack (H5-GB)
Clinker Cooler (H2-QC)	300 tons clinker per hour	Baghouse (H2-GB)	Cooler Stack (H2-GB)

B. Emission Limits and Standards

1. Operational Limitations

a. Cement clinker produced in the Kiln 6 inline kiln/raw mill shall not exceed 7,950 tons per day based on an hourly rolling 24-hour sum.

[A.A.C. R18-2-306.01]

b. Cement clinker produced in the Kiln 6 inline kiln/raw mill shall not exceed 2,300,000 tons per year based on a monthly rolling 12-month sum.

[A.A.C. R18-2-306.01]

c. *The Kiln 6 inline kiln/raw mill shall not be equipped with an alkali bypass.*

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

d. *The Inline Raw Mill (D4-RM1) shall not be operated when Kiln 6 (H3-K6) is not operating.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

2. Particulate Matter Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain PM-10 in excess of 0.008 grains per dry standard cubic foot.

[A.A.C. R18-2-403(A)(1) and R18-2-406(A)(4)]

b. The Permittee shall not cause or allow to be emitted into the atmosphere from the Clinker Cooler any gases which contain PM-10 in excess of 0.005 grains per dry standard cubic foot.

[A.A.C. R18-2-403(A)(1) and R18-2-406(A)(4)}]

c. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain PM-10 in excess of 28.03 lbs/hr.

[A.A.C. R18-2-306.01, R18-2-406(A)(5)]

d. The Permittee shall not cause or allow to be emitted into the atmosphere from the Clinker Cooler any gases which contain PM-10 in excess of 7.88 lbs/hr.

[A.A.C. R18-2-306.01, R18-2-406(A)(5)]

e. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain particulate matter (PM) in excess of 0.30 lb per ton of feed (dry basis) to the Kiln.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(1)}]

f. The Permittee shall not cause or allow to be emitted into the atmosphere from the Clinker Cooler any gases which contain particulate matter (PM) in excess of 0.10 lb per ton of feed (dry basis) to the Kiln.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1345(a)(1)}]

g. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which exhibit opacity greater than 20 percent, based on a 6-minute block average.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(2)}]

h. The Permittee shall not cause or allow to be emitted into the atmosphere from the Clinker Cooler any gases which exhibit opacity greater than 10 percent, based on a 6-minute block average.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1345(a)(2)}]

i. The Permittee shall maintain and operate Baghouses H2-GB and H5-GB such that the alarm of the associated Bag Leak Detection System, as required by Condition IV.D.7.d, is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period.

[A.A.C. R18-2-406(A)(4)]

3. Sulfur Dioxide Emission Standard

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain SO_2 in excess of 125.0 lbs/hr based on an hourly rolling 3-hour average.

[A.A.C. R18-2-406(A)(5)]

b. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain SO_2 in

excess of 0.16 lb per ton of clinker based on a daily rolling 30-day average.

[A.A.C. R18-2-406(A)(4)]

4. Nitrogen Oxides Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain NO_X in excess of 860.0 lbs/hr based on an hourly rolling 24-hour average.

[A.A.C. R18-2-306.01]

b. *The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain NO_X in excess of 2,242.5 tons per year based on a daily rolling 365-day total.*

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

5. Carbon Monoxide Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain CO in excess of 2,700 lbs/hr based on a block hourly average.

[A.A.C. R18-2-306.01]

b. *The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain CO in excess of 3,680 tons per year based on a daily rolling 365-day total.*

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

6. Volatile Organic Compounds and Organic HAP Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain total hydrocarbon (THC) emissions in excess of 20 ppmvd as propane, corrected to seven percent oxygen, based on an hourly block average.

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1343(c)(4)}]

b. *The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain VOC emissions in excess of 44.25 tons per year, based on a daily rolling 365-day total.*

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

7. Dioxins/Furans Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain dioxins/furans (D/F) in excess of:

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(3)}]

(1) 0.20 ng per dscm (8.7×10^{-11} gr/dscf) (toxicity equivalent (TEQ)) corrected to seven percent oxygen; or

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(3)(i)}]

(2) 0.40 ng per dscm (1.7×10^{-10} gr per dscf) (TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 400 °F or less.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(3)(ii)}]

b. The Permittee shall operate the Kiln 6 inline kiln/raw mill such that:

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(a)}]

(1) When the Inline Raw Mill is operating, the temperature of the gas at the inlet to Baghouse H5-GB does not exceed the applicable temperature limit, determined in accordance with Condition IV.E.5.a(9) and established during the performance test when the Inline Raw Mill was operating.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(a)(1)}]

(2) When the Inline Raw Mill is not operating, the temperature of the gas at the inlet to Baghouse H5-GB does not exceed the applicable temperature limit, determined in accordance with Condition IV.E.5.a(9) and established during the performance test when the Inline Raw Mill was not operating.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(a)(2)}]

8. Mercury Emission Standards

a. The Permittee shall not cause or allow to be emitted into the atmosphere from the Kiln 6 inline kiln/raw mill any gases which contain mercury in excess of 41 µg per dscm corrected to seven percent oxygen.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1343(c)(5)}]

b. The Permittee shall not use as a raw material or fuel in the Kiln 6 inline kiln/raw mill any fly ash where the mercury content of the fly ash has been increased through the use of activated carbon, or any other sorbent unless the Permittee can demonstrate that the use of that fly ash will not result in an increase in mercury emissions over baseline emissions (i.e., emissions not using the fly ash). The Permittee has the burden of proving there has been no emissions increase over baseline.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(g)}]

c. The Permittee shall remove from the Kiln 6 inline kiln/raw mill system (i.e., shall not recycle to the kiln) sufficient cement kiln dust to maintain the desired product quality.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(h)}]

d. The Permittee shall operate the Kiln 6 inline kiln/raw mill such that the average hourly cement kiln dust recycle rate does not exceed the average hourly cement kiln dust recycle rate measured during mercury

performance testing. Any exceedance of this average hourly rate is considered a violation of the mercury emission standard in Condition IV.B.8.a.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1344(i)}]

C. Air Pollution Control Requirements

1. *At all times when the Kiln 6 inline kiln/raw mill is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall install,* maintain and *operate the Selective Non-Catalytic Reduction system in a manner consistent with good air pollution control practice for minimizing NO_X emissions as necessary to ensure continuous compliance with Conditions IV.B.4.a and IV.B.4.b.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306.01, R18-2-331(A)(3)(d) and (e), and R18-2-331(B)]
Material Permit Conditions are indicated with underline and italics.

2. *At all times when the Kiln 6 inline kiln/raw mill is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, install,* maintain and *operate Baghouse H5-GB in a manner consistent with good air pollution control practice for minimizing PM and PM-10 emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(d) and (e), R18-2-331(B), R18-2-403(A)(1), and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

3. *At all times when the Clinker Cooler is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, install,* maintain and *operate Baghouse H2-GB in a manner consistent with good air pollution control practice for minimizing PM and PM-10 emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(d) and (e), R18-2-331(B), R18-2-403(A)(1), and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

D. Monitoring, Recordkeeping, and Reporting Requirements

1. Monitoring and Recordkeeping for Operational Limitations

a. *The Permittee shall install, calibrate,* maintain, and operate *monitoring devices for measuring and recording the process weight of total feed to Kiln 6.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3)(c) , R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

b. Each monitoring device shall be designed with an accuracy of ± 2% over its operating range.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-406(A)(4)]

c. The calibration of each monitoring device shall be verified in accordance with manufacturer's specifications at least once per calendar year.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-406(A)(4)]

d. The Permittee shall use daily records of kiln feed rate to calculate, and shall maintain daily records of, clinker production rate. Records of clinker production rate shall be maintained on a daily basis, rolling 30-day total basis, and rolling 365-day total basis.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-406(A)(4)]

2. Monitoring and Recordkeeping for Opacity of Visible Emissions

a. *The Permittee shall install, calibrate*, maintain, and operate *continuous opacity monitoring systems (COMS) to continuously monitor the opacity of visible emissions from the Kiln 6 Stack and the Clinker Cooler Stack*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(c) and (d)}]

Material Permit Conditions are indicated with underline and italics.

b. Each COMS required by Condition IV.D.2.a shall meet the requirements of Performance Specification 1, *Specifications and test procedures for opacity continuous emission monitoring systems in stationary sources*, in appendix B to 40 CFR Part 60.

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1350(c) and (d)}]

c. For each COMS required by Condition IV.D.2.a, the Permittee shall maintain all records required by 40 CFR § 63.10(c).

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1355(c) }]

d. If the average opacity of visible emissions from the Kiln 6 Stack for any 6-minute block period exceeds 20 percent, this shall constitute a period of excess emissions and a violation of Condition IV.B.2.g.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(c)(3)}]

e. If the average opacity of visible emissions from the Clinker Cooler Stack for any 6-minute block period exceeds 10 percent, this shall constitute a period of excess emissions and a violation of Condition IV.B.2.h.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350 (d)(3)}]

f. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A."

[A.A.C. R18-2-306(A)(5)(b)]

3. Monitoring and Recordkeeping for SO_2, NO_X, CO, and VOC emissions

a. *The Permittee shall install, calibrate*, maintain, and operate *continuous emission rate monitoring systems for monitoring and recording the SO_2, NO_X, CO, and VOC emission rates to the atmosphere from the Kiln 6 Stack.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3)(c), R18-2-331(A)(3)(c), R18-2-331(B)]
Material Permit Conditions are indicated with underline and italics.

b. The continuous emission rate monitoring systems required by Condition IV.D.3.a shall meet the following requirements:

(1) 40 CFR Part 60, Appendix B, "Performance Specifications."

(a) The SO_2 and NO_X continuous emission rate monitoring systems shall meet the requirements of Performance Specification 2, *Specifications and test procedures for SO_2 and NO_X continuous emission monitoring systems in stationary sources*, in Appendix B to 40 CFR Part 60.

(b) The CO continuous emission rate monitoring system shall meet the requirements of Performance Specification 4a, Specifications and test procedures for carbon monoxide continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.

(c) The VOC continuous emission rate monitoring system shall meet the requirements of Performance Specification 8, Performance specifications for volatile organic compound continuous emission monitoring systems in stationary sources, in Appendix B to 40 CFR Part 60.

(d) The SO_2, NO_X, CO, and VOC continuous emission rate monitoring systems shall meet the requirements of Performance Specification 6, *Specifications and test procedures for continuous emission rate monitoring systems in stationary sources*, in Appendix B to 40 CFR Part 60.

(2) 40 CFR Part 60, Appendix F, "Quality Assurance Procedures."

(3) The Permittee shall submit a Quality Assurance/Quality Control Plan to the Director at least 90 days prior to the instrument start-up including procedures for dealing with data gaps based on the procedures contained in 40 CFR 75, Subpart D (§ 75.30). When approved by the Director, this plan shall be implemented.

[A.A.C. R18-2-306(A)(3)(c), R18-2-406(A)(4)]

c. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

d. Each continuous monitoring system shall be installed and operational prior to conducting required initial performance tests. Verification of operational status shall, at a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of these devices. Notification of the operational status of the continuous monitoring system shall be provided to the Director within 30 days after the system becomes operational, or by the date on which the initial performance test is conducted, whichever occurs first.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

e. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, the Permittee shall meet minimum frequency of operation requirements as follows: the continuous monitoring system shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

f. For continuous monitoring system measurements, one-hour arithmetic averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded during periods of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this condition.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

g. For the purposes of demonstrating compliance with emission standards expressed as mass emissions per unit of clinker production, averages shall be calculated as the total emission rate over the averaging period, as measured and recorded in accordance with Conditions IV.D.3.a through IV.D.3.f, divided by the total clinker production rate over the averaging period, as measured and recorded in accordance with Condition IV.D.1.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

h. The following shall be considered periods of excess emissions:

(1) All 3-hour periods for which the SO_2 emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.3.a.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(5)]

(2) All 30-day periods for which the SO_2 emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.3.b.

[A.A.C. R18-2-306(A)(3), R18-2-406(A)(4)]

(3) All 24-hour periods for which the NO_X emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.4.a.

[A.A.C. R18-2-306(A)(3)]

(4) All 365-day periods for which the NO_X emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the applicable emission standard in Condition IV.B.4.b.

[A.A.C. R18-2-306(A)(3)]

(5) All 1-hour periods for which the CO emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.5.a.

[A.A.C. R18-2-306(A)(3)]

(6) All 365-day periods for which the CO emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.5.b.

[A.A.C. R18-2-306(A)(3)]

(7) All 365-day periods for which the VOC emission rate to the atmosphere as determined in accordance with Condition IV.D.3 exceeds the emission standard in Condition IV.B.6.b.

[A.A.C. R18-2-306(A)(3)]

i. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A."

[A.A.C. R18-2-306(A)(5)(b)]

4. Monitoring and Recordkeeping for Organic HAP.

a. *The Permittee shall install, calibrate,* maintain, and operate *a continuous emission monitoring system (CEMS) for monitoring and recording the concentration by volume (dry basis, corrected to 7.0 percent oxygen) of THC emissions into the atmosphere from the Rotary Kiln and Raw Mill*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(h)(1)}]
Material Permit Conditions are indicated with underline and italics.

b. The CEMS required by Condition IV.D.4.a shall meet the requirements Of Performance Specification 8a, Specifications and test procedures for total hydrocarbon continuous monitoring systems in stationary sources, in appendix B to 40 CFR part 60.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(h)(1)}]

c. For the CEMS required by Condition IV.D.4.a, the Permittee shall maintain all records required by 40 CFR § 63.10(c).

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1355(c) }]

d. Any hourly average THC concentration in any gas discharged from the Rotary Kiln or Raw Mill, exceeding 20 ppmvd, reported as propane, corrected to seven percent oxygen, shall constitute a period of excess emissions and a violation of Condition IV.B.6.a.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(h)(4)}]

e. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A."

[A.A.C. R18-2-306(A)(5)(b)]

5. Monitoring and Recordkeeping for Dioxin/Furan Emissions

a. *The Permittee shall install, calibrate*, maintain, and operate *a continuous monitor to record the temperature of the exhaust gases from the Kiln 6 inline kiln/raw mill at the inlet to, or upstream of, Baghouse H5-GB*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(f)(1) and (f)(2)}]
Material Permit Conditions are indicated with underline and italics.

(1) The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements in Condition IV.E.5.a(8).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(f)(1)(i)}]

(2) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Director.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(f)(1)(ii)}]

b. The three-hour rolling average temperature shall be calculated as the average of 180 successive one-minute average temperatures.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(f)(3)}]

c. Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(f)(4)}]

d. When the operating status of the Inline Raw Mill is changed from off to on, or from on to off, the calculation of the three-hour rolling average temperature must begin anew, without considering previous recordings.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(f)(5)}]

e. *The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(f)(6)}]
Material Permit Conditions are indicated with underline and italics.

f. For the continuous temperature monitoring system required by Condition IV.D.5.a, the Permittee shall maintain all records required by 40 CFR § 63.10(c).

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1355(c)}]

g. The Permittee shall conduct an inspection of the components of the combustion system of Kiln 6 at least once per year.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(i)}]

6. Monitoring and Recordkeeping for Mercury Emissions

a. In order to demonstrate continuous compliance with Condition IV.B.8.a, *the Permittee shall install, calibrate*, maintain, and operate a *Bag Leak Detection System for detecting leaks in Baghouse H5-GB* as required by Condition IV.D.7.c. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(n), 40 CFR § 63.995(c) by ref.}]
Material Permit Conditions are indicated with underline and italics.

b. In order to demonstrate continuous compliance with Condition IV.B.8.b, for each shipment of fly ash received and used as a raw material or fuel in the Kiln 6 inline kiln/raw mill, the Permittee shall obtain a certification from the supplier to demonstrate that the fly ash was not derived from a source in which the use of activated carbon, or any other sorbent, is used as a method of mercury emissions control. The certification shall include the name of the supplier and a signed statement from the supplier confirming that the fly ash was not derived from a source in which the use of activated carbon, or any other sorbent, is used as a method of emission control.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(o)}]

c. If the Permittee opts to use in the Kiln 6 inline kiln/raw mill a fly ash derived from a source in which the use of activated carbon, or any other sorbent, is used as a method of mercury emissions control and to demonstrate that the use of this fly ash does not increase mercury emissions, the Permittee shall obtain daily fly ash samples, composites monthly, and analyze the samples for mercury.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(p)}]

d. The Permittee shall keep annual records of the amount of cement kiln dust which is removed from the Kiln 6 inline kiln/raw mill system and either disposed of as solid waste or otherwise recycled for a beneficial use outside of the kiln system.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(d)}]

e. The Permittee shall keep records of the amount of cement kiln dust recycled to the Kiln 6 inline kiln/raw mill on an hourly basis.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(e)}]

f. The Permittee shall keep records of all fly ash supplier certifications as required by Condition IV.D.6.b.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(f)}]

7. Monitoring and Recordkeeping for Baghouses H2-GB and H5-GB

a. For the purpose of demonstrating compliance with Conditions IV.B.2.a through IV.B.2.d, and in accordance with the requirements of 40 CFR Part 64, the Permittee shall maintain and implement the approved Compliance Assurance Monitoring (CAM) Plans for Baghouses H2-GB and H5-GB.

[A.A.C. R18-2-306(A)(3) & (4) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

b. Operation of approved monitoring in accordance with 40 CFR 64.7 shall commence on the date when Kiln 6 becomes operational.

[A.A.C. R18-2-306(A)(3) & (4) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

c. *The Permittee shall install, calibrate*, maintain, and operate *Bag Leak Detection Systems for detecting leaks in Baghouses H2-GB and H5-GB.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3) & (4) {40 CFR Part 64 - CAM}, R18-2-331(A)(3)(c) & (B), R18-2-403(A)(1), and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

d. The Bag Leak Detection Systems required by Condition IV.D.7.c shall meet the requirements of Conditions IV.D.7.d(1) through IV.D.7.d(11).

(1) The Bag Leak Detection System must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0044 grains per actual cubic foot or less. "Certify" shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is 0.0044 grains per actual cubic foot or less.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(2) The sensor on the Bag Leak Detection System must provide output of relative PM emissions.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(3) The Bag Leak Detection System must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(4) The presence of an alarm condition should be clearly apparent to facility operating personnel.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(5) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(6) The Bag Leak Detection System must be installed, operated, adjusted, and maintained so that it is based on the manufacturer's written specifications and recommendations.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(7) The baseline output of the Bag Leak Detection System must be established as follows:

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(a) Adjust the range and the averaging period of the device; and

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(b) Establish the alarm set points and the alarm delay time.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan required by Condition IV.D.8.a. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1 calendar year period unless the Permittee certifies in writing to the Director that the Baghouse has been inspected and found to be in good operating condition.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(9) The Permittee shall continuously record the output from the Bag Leak Detection System during periods of normal operation. Normal operation does not include periods when the Bag Leak Detection System is being maintained or during startup, shutdown or malfunction.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(10) Except as provided in Condition IV.D.7.d(11), each time the alarm activates, alarm time will be counted as the actual amount of time taken by the Permittee to initiate corrective actions.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

(11) If inspection of the Baghouse demonstrates that no corrective actions are necessary, no alarm time will be counted.

[A.A.C. R18-2-306(A)(3)(c) & (d) {40 CFR Part 64 - CAM}, R18-2-403(A)(1), and R18-2-406(A)(4)]

e. Each 6-month block period for which the Bag Leak Detection System alarm time, as determined in accordance with Conditions IV.D.7.d(9) through IV.D.2.b(11), exceeds the limit established in Condition IV.B.2.i shall be considered a period of excess emissions.

[A.A.C. R18-2-306(A)(5)(b)]

f. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A" of this permit.

[A.A.C. R18-2-306(A)(5)(b)]

8. Operations and Maintenance Plan

a. The Permittee shall prepare written operations and maintenance plans for Kiln 6 and the Clinker Cooler.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)}]

b. Each plan required by Condition IV.D.8.a shall be submitted to the Director for review and approval using the appropriate permit revision mechanism in Title 18, Chapter 2, Article 3 of the Arizona Administrative Code.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)}]

c. Each plan required by Condition IV.D.8.a shall include procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits of Conditions IV.B.2.e, IV.B.2.f, IV.B.2.g, IV.B.2.h, IV.B.6.a, IV.B.7, and IV.B.8.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(1)}]

d. Each plan required by Condition IV.D.8.a shall include procedures to be used during an inspection of the components of the combustion system of Kiln 6 at least once per year; and

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(3)}]

e. Failure to comply with any provision of the operations and maintenance plan approved by the Director in accordance with Condition IV.D.8.b shall be a violation.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(b)}]

9. Recordkeeping, Reporting, and Notification Requirements for HAP Emission Standards

a. The Permittee shall maintain the following records:

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)}]

(1) All records as required by 40 CFR § 63.10(b)(2) and (b)(3).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)}]

(2) All documentation supporting initial notifications and notifications of compliance status under 40 CFR § 63.9.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(1)}]

(3) All records of applicability determination, including supporting analyses.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(2)}]

(4) If the Permittee has been granted a waiver under 40 CFR § 63.8(f)(6), any information demonstrating whether the source is meeting the requirements for a waiver of recordkeeping or reporting requirements.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(3)}]

b. The Permittee shall comply with the reporting requirements specified in 40 CFR § 63.10 as follows:

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)}]

(1) As required by 40 CFR § 63.10(d)(2), the Permittee shall report the results of performance tests as part of the notification of compliance status.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(1)}]

(2) As required by 40 CFR § 63.10(d)(3), the Permittee shall report the opacity results from tests required by Conditions IV.E.4.a and IV.E.4.b.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(2)}]

(3) As required by 40 CFR § 63.10(d)(5), if actions taken by a Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the Permittee's startup, shutdown, and malfunction plan specified in 40 CFR § 63.6(e)(3), the Permittee shall state such information in a semi-annual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(4)}]

(4) Any time an action taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the Permittee shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (fax) transmission. The immediate report shall be followed by a letter, certified by the Permittee, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(5)}]

(5) As required by 40 CFR § 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR § 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(6)}]

(6) As required by 40 CFR § 63.10(e)(2), when a COMS is used to determine opacity compliance during any performance test required under 40 CFR § 63.7 and described in 40 CFR § 63.6(d)(6), the Permittee shall report the results of the COMS performance evaluation conducted under 40 CFR § 63.8(e).

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(7)}]

(7) As required by 40 CFR § 63.10(e)(3), the Permittee shall submit an excess emissions and continuous monitoring system performance report for any event when the data provided by the continuous monitoring system indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(8)}]

(8) The Permittee shall submit a summary report semiannually, along with the compliance certification, which contains the information specified in 40 CFR § 63.10(e)(3)(vi). In addition, the summary report shall include:

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)}]

(a) All exceedances of maximum baghouse inlet gas temperature limits specified in Conditions IV.B.7.b(1) and IV.B.7.b(2);

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)(i)}]

(b) All failures to calibrate thermocouples and other temperature sensors as required under Condition IV.D.5.e;

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)(ii)}]

(c) The results of any combustion system component inspections conducted within the reporting period as required under Condition IV.D.5.g; and

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)(iv)}]

(d) All failures to comply with any provision of the operation and maintenance plan required by Condition IV.D.8.a.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)(v)}]

(9) If the total continuous monitoring system downtime for any continuous monitoring system for the reporting period is 10 percent or greater of the total operating time for the reporting period, the Permittee shall submit an excess emissions and continuous monitoring system performance report along with the summary report required by Condition IV.D.9.b(8).

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(10)}]

c. The Permittee shall comply with the notification requirements in 40 CFR § 63.9 as follows:

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)}]

(1) Notification of performance tests, as required by 40 CFR §§ 63.7 and 63.9(e).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(2)}]

(2) Notification of opacity and visible emission observations required by Condition IV.E.4.c in accordance with 40 CFR §§ 63.6(h)(5) and 63.9(f).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(3)}]

(3) Notification, as required by 40 CFR § 63.9(g), of the date that the CEMS or COMS performance evaluation required by 40 CFR § 63.8(e) is scheduled to begin.

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(4)}]

(4) Notification of compliance status, as required by 40 CFR § 63.9(h).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(5)}]

d. The Permittee shall maintain files of all information (including all reports and notifications) required in a form suitable and readily available for inspection and review as required by 40 CFR § 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(a)}]

10. Notification Requirements for Kiln 6 Project

a. On or before the date that Section IV of Attachment "E" becomes effective, the Permittee shall submit written notification of the schedule for shutting down or modifying the emissions units covered by Section V of Attachment "B."

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

b. The notification required by Condition IV.D.10.a shall include an updated PM netting analysis and an updated PM-10 emissions offset analysis for the Kiln 6 project.

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

E. Testing Requirements

1. The Permittee shall perform initial and periodic performance tests in accordance with Conditions IV.E.2 through IV.E.6. Initial performance tests shall be performed within 180 days after initial startup of the affected emissions unit.

[A.A.C. R18-2-406(A)(4) and R18-2-1101(B)(1) {40 CFR § 63.7(a)}]

2. For each performance test required pursuant to Condition IV.E.1, the Permittee shall submit a test plan to the Director in accordance with Condition XVIII.D of Attachment "A."

[A.A.C. R18-2-312(B) and R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

3. Performance test results shall be documented in complete test reports that contain the information required by Conditions IV.E.3.a through IV.E.3.k.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

a. A brief description of the process and the air pollution control system;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(1)}]

b. Sampling location description(s);

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(2)}]

c. A description of sampling and analytical procedures and any modifications to standard procedures;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(3)}]

d. Test results;

[A.A.C. R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(4)}]

e. Quality assurance procedures and results;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(5)}]

f. Records of operating conditions during the test, preparation of standards, and calibration procedures;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(6)}]

g. Raw data sheets for field sampling and field and laboratory analyses;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(7)}]

h. Documentation of calculations;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(8)}]

i. All data recorded and used to establish parameters for compliance monitoring;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(9)}]

j. Any other information required by the test method; and

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(10)}]

k. All other relevant information.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

4. Test Methods and Procedures for Particulate Matter and Opacity of Visible Emissions

a. The Permittee shall demonstrate initial compliance with Condition IV.B.2.e using the test methods and procedures in Conditions IV.E.4.a(1) through IV.E.4.a(7).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)}]

(1) The Permittee shall demonstrate initial compliance by conducting two separate performance tests: 1) while the Inline Raw Mill is under normal operating conditions, 2) while the Inline Raw Mill is not operating.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)}]

(2) EPA Reference Method 5 in appendix A to 40 CFR part 60 shall be used to determine PM emissions.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(3) Each performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with 40 CFR § 63.7(e).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(4) Each run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(5) The average of the three runs shall be used to determine compliance.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(6) Suitable methods shall be used to determine the Rotary Kiln feed rate, except for fuels, for each run.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(ii)}]

(7) The emission rate, E, shall be computed for each run using the following equation:

$$E = \frac{C_s \times Q_{sd}}{P}$$

Where:

E = emission rate of PM, lb per ton of Kiln feed.

C_s = concentration of PM, lb/dscf.

Q_{sd} = volumetric flow rate of effluent gas, dscf/hr.

P = total Kiln feed (dry basis), tons/hr.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(iii)}]

b. The Permittee shall demonstrate initial compliance with Condition IV.B.2.f using the test methods and procedures in Conditions IV.E.4.b(1) through IV.E.4.b(6).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)}]

(1) The performance test shall consist of three separate runs under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with 40 CFR § 63.7(e).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(2) EPA Reference Method 5 in appendix A to 40 CFR part 60 shall be used to determine PM emissions.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(3) Each run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(4) The average of the three runs shall be used to determine compliance.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(i)}]

(5) Suitable methods shall be used to determine the Kiln feed rate, except for fuels, for each run.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(ii)}]

(6) The emission rate, E, shall be computed for each run using the following equation:

$$E = \frac{C_s \times Q_{sd}}{P}$$

Where:

E = emission rate of PM, lb per ton of Kiln feed.

C_s = concentration of PM, lb/dscf.

Q_{sd} = volumetric flow rate of effluent gas, dscf/hr.

P = total Kiln feed (dry basis), tons/hr.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(iii)}]

c. The opacity exhibited during the period of the EPA Reference Method 5 performance tests required by Conditions IV.E.4.a and IV.E.4.b shall be determined through the use of the COMS required by Condition IV.D.2.a. The maximum six-minute average opacity shall be determined during each EPA Reference Method 5 test run and shall be used to demonstrate initial compliance with Conditions IV.B.2.g and IV.B.2.h.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(1)(v)}]

d. The Permittee shall demonstrate initial compliance with Conditions IV.B.2.a through IV.B.2.d using the test methods and procedures in Conditions IV.E.4.d(1) through IV.E.4.d(6).

(1) The Permittee shall demonstrate initial compliance with Conditions IV.B.2.a and IV.B.2.c by conducting two separate performance tests as follows.

(a) One performance test shall be performed under the conditions that exist when Kiln 6 and the Inline Raw Mill are operating at the highest load or capacity level reasonably expected to occur.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(b) One performance test shall be performed under the conditions that exist when the Inline Raw Mill is not operating and Kiln 6 is operating at the highest load or capacity level reasonably expected to occur.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(2) The Permittee shall determine PM-10 concentration as the sum of filterable PM-10 determined in accordance with Condition IV.E.4.d(2)(a) and condensable PM-10 determined in accordance with Condition IV.E.4.d(2)(b):

(a) Either of the following test methods may be used to determine the filterable PM-10 concentration:

(i) EPA Reference Method 5 in appendix A to 40 CFR part 60; or

(ii) EPA Reference Method 201a in appendix M to 40 CFR part 51.

(b) Either of the following test methods may be used to determine the condensable PM-10 concentration:

(i) EPA Reference Method 202 in appendix M to 40 CFR part 51; or

(ii) EPA "Other Test Method Number 28 (OTM-28), - Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources," included as Appendix 2 to Attachment "E."

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(3) Each performance test shall consist of three separate runs.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(4) Each run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(5) The average of the three runs shall be used to determine compliance.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

(6) Suitable methods shall be used to determine the Kiln 6 feed rate and clinker production rate, except for fuels, for each run.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4), and R-18-406(A)(5)]

e. If the Permittee plans to undertake a change in operations that may adversely affect compliance with Condition IV.B.2.e or IV.B.2.f, the Permittee must conduct a performance test as specified in Conditions IV.E.4.a and IV.E.4.b.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(2)}]

f. The performance tests required by Condition IV.E.4.d shall be repeated at least annually.

[A.A.C. R-18-406(A)(4) and R-18-406(A)(5)]

5. Test Methods and Procedures for Dioxins/Furans Emissions

a. The Permittee shall demonstrate initial compliance with Condition IV.B.7.a using the test methods and procedures in Conditions IV.E.5.a(1) through IV.E.5.a(9).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)}]

(1) The Permittee shall demonstrate initial compliance by conducting two separate performance tests: 1) while the Inline Raw Mill is under normal operating conditions, 2) while the Inline Raw Mill is not operating.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)}]

(2) EPA Reference Method 23 in appendix A to 40 CFR part 60 shall be used to determine D/F emissions.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)}]

(3) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with §63.7(e).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(i)}]

(4) The duration of each run shall be at least 3 hours, and the sample volume for each run shall be at least 2.5 dry standard cubic meters.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(i)}]

(5) The concentration shall be determined for each run, and the arithmetic average of the concentrations measured for the three runs shall be calculated and used to determine compliance.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(i)}]

(6) The temperature at the inlet to Baghouse H5-GB must be continuously recorded during the period of the Method 23 test, and the continuous temperature record(s) must be included in the performance test report.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(ii)}]

(7) One-minute average temperatures must be calculated for each minute of each run of the test.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(iii)}]

(8) The run average temperature must be calculated for each run, and the average of the run average temperatures must be determined and included in the performance test report. The average of the run average temperatures will determine the applicable temperature limit in accordance with Condition IV.E.5.a(9).

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(3)(iv)}]

(9) The temperature limits for Baghouse H5-GB in Conditions IV.B.7.b(1) and IV.B.7.b(2) are determined in accordance with IV.E.5.a(8).

[R18-2-1101(B)(50) {40 CFR § 63.1344(b)}]

b. Performance tests required under Condition IV.E.5.a shall be repeated every 30 months.

[R18-2-1101(B)(50) {40 CFR § 63.1349(d)}]

c. If the Permittee plans to undertake a change in operations that may adversely affect compliance with the D/F standard under Condition IV.B.7.a, the Permittee must conduct a performance test and establish new temperature limit(s) as specified in Conditions IV.E.5.a(1) through IV.E.5.a(8).

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(1)}]

d. In preparation for and while conducting a performance test required in Condition IV.E.5.c, the Permittee may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that Conditions IV.E.5.d(1) through (4) are met. The source shall submit temperature and other monitoring data that are recorded during the pretest operations.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(3)}]

(1) The Permittee shall provide the Director written notice at least 60 days prior to undertaking an operational change that may adversely affect compliance with Condition IV.B.7.a, or as soon as practicable where 60 days advance notice is not feasible. This notice shall include a description of the planned change, the permit condition that may be affected by the change, and a schedule for completion of the performance test required under Condition IV.E.5.c, including when the planned operational change period would begin.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(3)(i)}]

(2) The performance test results must be documented in a test report according to Condition IV.E.3.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(3)(ii)}]

(3) A test plan must be made available to the Director prior to testing, if requested.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(3)(iii)}]

(4) The performance test must be conducted, and it must be completed within 360 hours after the planned operational change period begins.

[R18-2-1101(B)(50) {40 CFR § 63.1349(e)(iv)}]

6. Test Methods and Procedures for Total Hydrocarbons Emissions

a. The Permittee shall demonstrate initial compliance with Condition IV.B.6.a using the test methods and procedures in Conditions IV.E.6.b through IV.E.6.d.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(4)}]

b. The Permittee shall demonstrate initial compliance by operating a CEMS in accordance with Performance Specification 8A in appendix B to 40 CFR part 60.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(4)}]

c. The Permittee shall demonstrate initial compliance by conducting two separate performance tests: 1) while the Inline Raw Mill is under normal operating conditions, 2) while the Inline Raw Mill is not operating.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(4)}]

d. The duration of the performance test shall be three hours, and the average THC concentration (as calculated from the one-minute averages) during the three hour performance test shall be calculated.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(4)}]

7. Test Methods and Procedures for Mercury Emissions

a. The Permittee shall demonstrate initial compliance with Condition IV.B.8 using the test methods and procedures in Conditions IV.E.7.b through IV.E.7.d.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(5)}]

b. The Permittee shall demonstrate initial compliance by using EPA Method 29 of 40 CFR part 60. ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), is an acceptable alternative to EPA Method 29 (portion for mercury only).

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(5)}]

c. The Permittee shall demonstrate initial compliance by conducting two separate performance tests: 1) while the Inline Raw Mill is under normal operating conditions, 2) while the Inline Raw Mill is not operating.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(5)}]

d. The Permittee shall record the hourly recycle rate of cement kiln dust during both test conditions and shall calculate an average hourly recycle rate for the three test runs for each test condition.

[R18-2-1101(B)(50) {40 CFR § 63.1349(b)(5)}]

F. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR part 63 subpart LLL.

V. FINISH MILLS, STORAGE BINS, BAGGING SYSTEMS, BULK LOADING AND UNLOADING SYSTEMS, AND CONVEYING SYSTEM TRANSFER POINTS SUBJECT TO SUBPART LLL OF 40 CFR PART 63

The requirements of this section (Section V of Attachment "E") shall apply and shall replace Sections VI and VIII of Attachment "B" beginning on the first date when any new or modified emissions unit listed in Condition V.A becomes operational. Each new and modified unit listed in Condition V.A shall be deemed operational on the first calendar day following installation or modification when its 24-hour average production rate exceeds 90 percent of its nominal capacity, or on the 30th day following initial use for new equipment or modification for modified equipment, whichever is earlier.

A. List of Emission Units and Affected Sources

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Truck Unloading to Plant Iron Stockpile No. 1	Bulk Unloading System	n/a	n/a
Truck Unloading to Plant Iron Stockpile No. 2	Bulk Unloading System	n/a	n/a
Truck Unloading to Plant Iron Stockpile No. 3	Bulk Unloading System	Wind Screen	n/a
Rail Unloading of Alumina to Trucks	Bulk Unloading System	n/a	n/a
Truck Unloading to Plant Alumina Stockpile	Bulk Unloading System	n/a	n/a
Truck Unloading to Gypsum Stockpile	Bulk Unloading System	n/a	n/a
Truck Unloading to Plant High-Grade Limestone Stockpile	Bulk Unloading System	n/a	n/a
Truck Unloading to Low-Grade Limestone Stockpile	Bulk Unloading System	n/a	n/a
Truck Unloading to Horseshoe	Bulk Unloading System	n/a	n/a
Truck Unloading to Inert Material Storage	Bulk Unloading System	n/a	n/a
Loading of Trucks at Plant Iron Stockpile No. 1	Bulk Loading System	n/a	n/a
Loading of Trucks at Plant Iron Stockpile No. 3	Bulk Loading System	Wind Screen	n/a
Loading of Trucks at Plant Alumina Stockpile	Bulk Loading System	n/a	n/a
Loading of Kiln Bricks into Trucks	Bulk Loading System	n/a	n/a
Loading of Off-Spec Clinker into Trucks	Bulk Loading System	Enclosure	n/a
Loading of Plant Materials into Trucks	Bulk Loading System	n/a	n/a

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Loading of D4 Metal Rejects into Trucks	Bulk Loading System	n/a	n/a
Transfer of D4 Metal Rejects from D4 Bin into Loader	Transfer Point	n/a	n/a
Transfer of D4 Metal Rejects from Loader to Horseshoe	Transfer Point	n/a	n/a
Transfer from Loader to D4-HOP	Transfer Point, 100 tons per hour	Water Spray	n/a
Discharge of D4-HOP to D4-BF1	Transfer Point, 100 tons per hour	n/a	n/a
Discharge of D4-BF1 to D4-BE1	Transfer Point, 100 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-DR1 to D4-SB3	Transfer Point, 525 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-DR1 to D4-SB4	Transfer Point, 525 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-DR1 to D4-SB5	Transfer Point, 525 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-DR1 to D4-SB6	Transfer Point, 525 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-BE1 to D4-DR1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC2)	D4-DC2
Discharge of D4-DC2 to D4-DR1	Transfer Point	Dust Collector (D4-DC2)	D4-DC2
Discharge of B5-BC4 to B6-BC1	Transfer Point, 600 tons per hour	n/a	n/a
Discharge of D4-VB1-SG to D4-BS1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-VB2-SG to D4-BS2	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS1 to D4-BC1	Transfer Point, 460 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS2 to D4-BC1	Transfer Point, 460 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of C2-BC7 to C2-BC11	Transfer Point, 155 tons per hour	Dust Collector (C2-DC3)	C2-DC3
Discharge of C2-BC7 to C2-BC12	Transfer Point, 525 tons per hour	Dust Collector (C2-DC3)	C2-DC3
Discharge of C2-BC11 to C2-SB10	Transfer Point, 155 tons per hour	Dust Collector (C2-DC3)	C2-DC3
Discharge of C2-BC12 to C2-SB9	Transfer Point, 525 tons per hour	Dust Collector (C2-DC3)	C2-DC3
Discharge of C2-BC7 to C2-SB6	Transfer Point, 525 tons per hour	Dust Collector (C2-DC3)	C2-DC3

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of C2-BC7 to C2-SB7	Transfer Point, 525 tons per hour	Dust Collector (C2-DC3)	C2-DC3
Discharge of C2-SB9 to D4-BS7	Transfer Point, 460 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of C2-SB10 to D4-BS8	Transfer Point, 460 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS7 to D4-BC2	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS8 to D4-BC3	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BC2 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BC3 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-VB3 to D4-BS3	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-VB4 to D4-BS4	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-VB5 to D4-BS5	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-VB6 to D4-BS6	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS3 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS4 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS5 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-BS6 to D4-BC1	Transfer Point, 525 tons per hour	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-DC1 to D4-BC1	Transfer Point	Dust Collector (D4-DC1)	D4-DC1
Discharge of D4-AS3 to HS-1	Transfer Point, 525 tons per hour	Dust Collector (F2-DC1)	F2-DC1
Discharge of F2-AS3 to F3-SB1	Transfer Point, 460 tons per hour	Dust Collector (F3-DC1)	F3-DC1
Discharge of F2-AS3 to F3-SB2	Transfer Point, 460 tons per hour	Dust Collector (F3-DC2)	F3-DC2
Discharge of F3-AS6 to H4-SB-KS	Transfer Point, 460 tons per hour	Dust Collector (H4-DC1)	H4-DC1
Discharge of D4-AS5 to F4-HS	Transfer Point, 525 tons per hour	Dust Collector (F4-DC1)	F4-DC1
Discharge of H4-FP1 to F4-HS	Transfer Point, 460 tons per hour	Dust Collector (F4-DC1)	F4-DC1

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of H5-FP1 to F4-HS	Transfer Point, 300 tons per hour	Dust Collector (F4-DC1)	F4-DC1
Discharge of F4-DC1 to F4-HS	Transfer Point	Dust Collector (F4-DC1)	F4-DC1
Discharge of F5-AL to F4-HS	Transfer Point, 464 tons per hour	Dust Collector (F4-DC1)	F4-DC1
Discharge of H5-FP1 to F5-A1	Transfer Point, 300 tons per hour	Dust Collector (F5-DC1)	F5-DC1
Discharge of H5-BE1 to H5-SB1	Transfer Point, 300 tons per hour	Dust Collector (H5-DC1)	H5-DC1
Overhead Crane Building	Storage Bin	Dust Collector (RS-DC1)	RS-DC1
Discharge from H3-DC1-SC to H3-SB3	Transfer Point	Dust Collector (H3-DC2)	H3-DC2
Discharge of F5-AL to H4-A	Transfer Point, 464 tons per hour	Dust Collector (H4-DC2)	H4-DC2
Discharge of H2-HXC to H2-PF1	Transfer Point, 300 tons per hour	Dust Collector (H2-DC1)	H2-DC1
Discharge of H3-CC1 to H2-PF1	Transfer Point, 40 tons per hour	Dust Collector (H2-DC1)	H2-DC1
Discharge of H2-QC to H2-PF1	Transfer Point, 300 tons per hour	Dust Collector (H2-GB)	H2-GB
Discharge of C2-VF1 to C2-BC8	Transfer Point, 155 tons per hour	Dust Collector (C2-DC14)	C2-DC14
Discharge of C2-DC14 to C2-BC8	Transfer Point	Dust Collector (C2-DC14)	C2-DC14
Discharge of C2-BC8 to C2-BC9	Transfer Point, 155 tons per hour	Dust Collector (C2-DC4)	C2-DC4
Discharge of C2-DC4 to C2-BC9	Transfer Point	Dust Collector (C2-DC4)	C2-DC4
Discharge of C2-BC9 to C2-BC10	Transfer Point, 155 tons per hour	Dust Collector (C2-DC11)	C2-DC11
Discharge of C2-BC9 to C2-BC5	Transfer Point, 155 tons per hour	Dust Collector (C2-DC2)	C2-DC2
Discharge of C2-DC2 to C2-BC5	Transfer Point	Dust Collector (C2-DC2)	C2-DC2
Discharge of C2-DC13 to B8-BC1A	Transfer Point	Dust Collector (C2-DC13)	C2-DC13
Discharge of C2-BC5 to C2-BC6	Transfer Point, 155 tons per hour	Dust Collector (C2-DC12)	C2-DC12
Discharge of C2-BC6 to C2-SB2	Transfer Point, 155 tons per hour	Dust Collector (C2-DC6)	C2-DC6
Discharge of C2-BC5 to C2-SB4	Transfer Point, 155 tons per hour	Dust Collector (C2-DC8)	C2-DC8
Discharge of C2-BC5 to C2-BC6A	Transfer Point, 155 tons per hour	Dust Collector (C2-DC12)	C2-DC12

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of C2-BC6A to C2-SB6	Transfer Point, 155 tons per hour	Dust Collector (C2-DC10)	C2-DC10
Discharge of C2-SC1 to C2-BC10	Transfer Point, 155 tons per hour	Dust Collectors (C2-DC2 & C2-DC11)	C2-DC2 & C2-DC11
Discharge of C2-DC12 to C2-BC10	Transfer Point	Dust Collector (C2-DC12)	C2-DC12
Discharge of C2-BC4 to C2-BC5	Transfer Point, 155 tons per hour	Dust Collector (C2-DC13)	C2-DC13
Discharge of C2-BC4 to B8-BC1A	Transfer Point, 500 tons per hour	Dust Collector (C2-DC13)	C2-DC13
Discharge of C2-BC10 to C2-BC11A	Transfer Point, 155 tons per hour	Dust Collector (C2-DC12)	C2-DC12
Discharge of C2-BC10 to C2-BC11	Transfer Point, 155 tons per hour	Dust Collector (C2-DC12)	C2-DC12
Discharge of C2-BC11A to C2-SB5	Transfer Point, 155 tons per hour	Dust Collector (C2-DC9)	C2-DC9
Discharge of C2-BC10 to C2-SB3	Transfer Point, 155 tons per hour	Dust Collector (C2-DC7)	C2-DC7
Discharge of C2-BC11 to C2-SB1	Transfer Point, 155 tons per hour	Dust Collector (C2-DC5)	C2-DC5
Discharge of D2-SB2 to D2-BS2	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS2 to D2-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-SB4 to D2-BS4	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS4 to D2-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-SB6 to D2-BS6	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS6 to D2-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-SB5 to D2-BS5	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS5 to D2-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-SB3 to D2-BS3	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS3 to D2-BS1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-SB1 to D2-BS1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BS1 to D2-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of D2-BC1 to D2-BC2	Transfer Point, 155 tons per hour	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-DC1 to D2-BC2	Transfer Point	Dust Collector (D2-DC1)	D2-DC1
Discharge of D2-BC2 to D2-BC6	Transfer Point, 155 tons per hour	Dust Collector (D2-DC3)	D2-DC3
Discharge of D2-DC3 to D2-BC6	Transfer Point	Dust Collector (D2-DC3)	D2-DC3
Discharge of H2-PF1 to H2-SB1	Transfer Point	Dust Collector (H2-DC3)	H2-DC3
Discharge of H2-PF1 to H2-PF2	Transfer Point	Dust Collector (H2-DC3)	H2-DC3
Discharge of H2-DC3 to H2-PF1	Transfer Point	Dust Collector (H2-DC3)	H2-DC3
Discharge of H2-PF2 to H2-PF3	Transfer Point	Dust Collector (J2-SD1-DC1)	J2-SD1-DC1
Clinker Dome J2-SD1	Storage Bin	Dust Collector (J2-SD1-DC1)	J2-SD1-DC1
Clinker Dome J2-SD2	Storage Bin	Dust Collector (J2-SD2-DC1)	J2-SD2-DC1
Discharge of J3-SD1-VF1 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-SD1-VF2 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-SD1-VF3 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-SD1-VF4 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-SD1-VF5 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-DC1 to J3-BC1	Transfer Point	Dust Collector (J3-DC1)	J3-DC1
Discharge of J3-SD2-VF1 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-SD2-VF2 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-SD2-VF3 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-SD2-VF4 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-SD2-VF5 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-DC2 to J3-BC1	Transfer Point	Dust Collector (J3-DC2)	J3-DC2
Discharge of J3-BC1 to J3-BC2	Transfer Point	Dust Collector (J3-DC3)	J3-DC3

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of J3-DC3 to J3-BC1	Transfer Point	Dust Collector (J3-DC3)	J3-DC3
Discharge of J3-BC2 to J3-BC3	Transfer Point	Dust Collector (J3-DC4)	J3-DC4
Discharge of JS-DC4 to J3-BC2	Transfer Point	Dust Collector (J3-DC4)	J3-DC4
Discharge of J3-BC3 to J3-BC4	Transfer Point	Dust Collector (J3-DC5)	J3-DC5
Clinker Storage Building	Storage Bin	Dust Collector (RS-DC1)	RS-DC1
Discharge of H2-DC2-SC1 to D3-1-BC1	Transfer Point, 150 tons per hour	Dust Collector (H2-DC2)	H2-DC2
Discharge of CM7-BS1-VF to CM7-RP1	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-BS1-VF to CM7-RP2	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Roll Crusher CM7-RP1	Finish Mill, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Roll Crusher CM7-RP2	Finish Mill, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-RP1 to CM7-BS1	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-RP2 to CM7-BS1	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7 Gypsum Bin to CM7-BS2	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7 Limestone Bin to CM7-BS3	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-BS1 to CM7-M	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC1)	CM7-DC1
Discharge of CM7-BS2 to CM7-BC1	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-BC3 to CM7-BC1	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC2)	CM7-DC2
Discharge of CM7-BC1 to CM7-M	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC1)	CM7-DC1
Discharge of CM7-AS7 to CM7-M	Transfer Point, 69 tons per hour	Dust Collector (CM7-DC1)	CM7-DC1
Discharge of CM7-DC2 to CM7-M	Transfer Point	Dust Collector (CM7-DC1)	CM7-DC1
Finish Mill CM7-M	Finish Mill, 69 tons per hour	Dust Collectors (CM7-DC2 & CM7-DC3)	CM7-DC2 & CM7-DC3
Discharge of D2-1-AS1 to D2-FP1	Transfer Point, 155 tons per hour	Dust Collector (D2-DC4)	D2-DC4
Discharge of D2-BC6 to D2-1-BC1	Transfer Point, 155 tons per hour	Dust Collector (D2-1-DC1)	D2-1-DC1

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of D2-1-BC1 to D2-1-M	Transfer Point, 155 tons per hour	Dust Collector (D2-1-DC1)	D2-1-DC1
Finish Mill D2-1-M	Finish Mill, 155 tons per hour	Dust Collector (D2-1-DC1)	D2-1-DC1
Discharge of H2-DC2-SC1 to D3-1-BC1	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of CLINKER BIN to D3-1-BS1	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BS1 to D3-1-BC1	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-VB1 to D3-1-BS2	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BS2 to D3-1-BC1	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BC1 to D3-1-BC2	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-VB to D3-1-BC2	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BE1 to D3-1-BC3	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BC3 to D3-1-BC4	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BC3-SC to D3-1-BC4	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BC4 to D3-1-HRP	Transfer Point, 150 tons per hour	Dust Collectors (D3-1-DC1 & D3-1-DC3)	D3-1-DC1 & D3-1-DC3
Discharge of D3-1-BC4 to D3-1-BE5	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Discharge of D3-1-BC4-SC to D3-1-BE5	Transfer Point, 150 tons per hour	Dust Collector (D3-1-DC3)	D3-1-DC3
Finish Mill D3-1-M	Finish Mill, 150 tons per hour	Dust Collectors (D3-1-DC1 & D3-1-DC2)	D3-1-DC1 & D3-1-DC2
Roll Press D3-1-HRP1	Finish Mill, 150 tons per hour	Dust Collector (D3-1-DC1)	D3-1-DC1
Roll Press D3-1-HRP2	Finish Mill, 150 tons per hour	Dust Collector (D3-1-DC1)	D3-1-DC1
Discharge of D5-SB1 to D5-WF1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-WF1 to D5-BC1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-SB2 to D5-WF2	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-WF2 to D5-BC1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of D5-SB3 to D5-WF3	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-WF3 to D5-BC1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-DC1 to D5-BC1	Transfer Point	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-BC1 to D5-BE1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-BE1 to D5-BC2	Transfer Point, 160 tons per hour	Dust Collector (D5-DC2)	D5-DC2
Discharge of D5-BC2 to D5-SB5	Transfer Point, 160 tons per hour	Dust Collector (D5-DC2)	D5-DC2
Discharge of D5-DC2 to D5-SB4	Transfer Point	Dust Collector (D5-DC2)	D5-DC2
Discharge of D5-SB1 to D5-BC3	Transfer Point, 160 tons per hour	Dust Collector (D5-DC2)	D5-DC2
Discharge of D5-FM to D5-FM-VB	Transfer Point, 160 tons per hour	Dust Collector (D5-PC)	D5-PC
OK-4 Roller Mill D5-FM with Air Heater D5-HTR	Finish Mill, 160 tons per hour	Dust Collector (D5-PC)	D5-PC
Discharge of D5-FM-VB to D5-BC4	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of D5-BC4 to D5-BE1	Transfer Point, 160 tons per hour	Dust Collector (D5-DC1)	D5-DC1
Discharge of Airslide to CS-SB1	Transfer Point	Dust Collector (CM-DC12)	CM-DC12
Discharge of Airslide to CS-SB2	Transfer Point	Dust Collector (CM-DC12)	CM-DC12
Discharge of Airslide to CS-SB3	Transfer Point	Dust Collector (CM-DC12)	CM-DC12
Discharge of Airslide to CS-SB4	Transfer Point	Dust Collectors (CM-DC14 & CM-DC10)	CM-DC14 & CM-DC10
Discharge of Airslide to CS-SB5	Transfer Point	Dust Collectors (CM-DC14 & CM-DC10)	CM-DC14 & CM-DC10
Discharge of Airslide to CS-SB6	Transfer Point	Dust Collectors (CM-DC14 & CM-DC10)	CM-DC14 & CM-DC10
Discharge of Airslide to CS-SB7	Transfer Point	Dust Collector (CM-DC11)	CM-DC11
Discharge of Airslide to CS-SB8	Transfer Point	Dust Collector (CM-DC11)	CM-DC11
Discharge of Airslide to CS-SB9	Transfer Point	Dust Collector (CM-DC11)	CM-DC11
Discharge of Airslide to CS-SB10	Transfer Point	Dust Collectors (CM-DC15 & CM-DC11)	CM-DC15 & CM-DC11

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of Airslide to CS-SB11	Transfer Point	Dust Collectors (CM-DC15 & CM-DC10)	CM-DC15 & CM-DC10
Discharge of Airslide to CS-SB12	Transfer Point	Dust Collectors (CM-DC15 & CM-DC10)	CM-DC15 & CM-DC10
Discharge of Airslide to CS-SB13	Transfer Point	Dust Collectors (CM-DC15 & CM-DC9)	CM-DC15 & CM-DC9
Discharge of Airslide to CS-SB14	Transfer Point	Dust Collectors (CM-DC15 & CM-DC9)	CM-DC15 & CM-DC9
Discharge of Airslide to CS-SB15	Transfer Point	Dust Collectors (CM-DC15 & CM-DC9)	CM-DC15 & CM-DC9
Discharge of Airslide to CS-SB16	Transfer Point	Dust Collectors (CM-DC14 & CM-DC9)	CM-DC14 & CM-DC9
Discharge of Airslide to CS-SB17	Transfer Point	Dust Collectors (CM-DC14 & CM-DC9)	CM-DC14 & CM-DC9
Discharge of Airslide to CS-SB18	Transfer Point	Dust Collectors (CM-DC14 & CM-DC9)	CM-DC14 & CM-DC9
Discharge of Airslide to CS-SB19	Transfer Point	Dust Collectors (CM-DC8, CM-DC16 & CM-DC17)	CM-DC8, CM-DC16 & CM-DC17
Discharge of Airslide to CS-SB20	Transfer Point	Dust Collectors (CM-DC8, CM-DC16 & CM-DC17)	CM-DC8, CM-DC16 & CM-DC17
Discharge of Airslide to CS-SB21	Transfer Point	Dust Collectors (CM-DC8, CM-DC16 & CM-DC17)	CM-DC8, CM-DC16 & CM-DC17
Discharge of Airslide to CS-SB22	Transfer Point	Dust Collectors (CM-DC8, CM-DC16 & CM-DC17)	CM-DC8, CM-DC16 & CM-DC17
Discharge of Airslide to CS-SB23	Transfer Point	Dust Collectors (CM-DC8, CM-DC16 & CM-DC17)	CM-DC8, CM-DC16 & CM-DC17
Discharge of CS-SB1 to PH-SC1	Transfer Point, 276 tons per hour	Dust Collector (PH-DC1)	PH-DC1
Discharge of CS-SB2 to PH-SC1	Transfer Point, 276 tons per hour	Dust Collector (PH-DC1)	PH-DC1
Discharge of CS-SB3 to PH-SC1	Transfer Point, 276 tons per hour	Dust Collector (PH-DC1)	PH-DC1
Discharge of CS-SB4 to PH-SC1	Transfer Point, 276 tons per hour	Dust Collector (PH-DC1)	PH-DC1
Discharge of CS-SB5 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC1)	BL-DC1
Discharge of CS-SB6 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC1)	BL-DC1
Discharge of CS-SB16 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC1)	BL-DC1

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of CS-SB17 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC1)	BL-DC1
Discharge of CS-SB18 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC1)	BL-DC1
Discharge of CS-SB7 to PH-SC3	Transfer Point, 276 tons per hour	Dust Collector (PH-DC2)	PH-DC2
Discharge of CS-SB8 to PH-SC3	Transfer Point, 276 tons per hour	Dust Collector (PH-DC2)	PH-DC2
Discharge of CS-SB9 to PH-SC3	Transfer Point, 276 tons per hour	Dust Collector (PH-DC2)	PH-DC2
Discharge of CS-SB10 to PH-SC3	Transfer Point, 276 tons per hour	Dust Collector (PH-DC2)	PH-DC2
Discharge of CS-SB11 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC2)	BL-DC2
Discharge of CS-SB12 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC2)	BL-DC2
Discharge of CS-SB13 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC2)	BL-DC2
Discharge of CS-SB14 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC2)	BL-DC2
Discharge of CS-SB15 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC2)	BL-DC2
Discharge of CS-SB19 to PH-SC9	Transfer Point, 276 tons per hour	Dust Collector (PH-DC3)	PH-DC3
Discharge of CS-SB20 to PH-SC9	Transfer Point, 276 tons per hour	Dust Collector (PH-DC3)	PH-DC3
Discharge of CS-SB21 to PH-SC9	Transfer Point, 276 tons per hour	Dust Collector (PH-DC3)	PH-DC3
Discharge of CS-SB22 to PH-SC9	Transfer Point, 276 tons per hour	Dust Collector (PH-DC3)	PH-DC3
Discharge of CS-SB23 to PH-SC9	Transfer Point, 276 tons per hour	Dust Collector (PH-DC3)	PH-DC3
Discharge of CS-SB19 to BL-SC1A	Transfer Point, 276 tons per hour	Dust Collectors (BL-DC3 & BL-DC4)	BL-DC3 & BL-DC4
Discharge of CS-SB20 to BL-SC1A	Transfer Point, 276 tons per hour	Dust Collectors (BL-DC3 & BL-DC4)	BL-DC3 & BL-DC4
Discharge of CS-SB21 to BL-SC1A	Transfer Point, 276 tons per hour	Dust Collectors (BL-DC3 & BL-DC4)	BL-DC3 & BL-DC4
Discharge of CS-SB22 to BL-SC1A	Transfer Point, 276 tons per hour	Dust Collectors (BL-DC3 & BL-DC4)	BL-DC3 & BL-DC4
Discharge of CS-SB23 to BL-SC1B	Transfer Point, 276 tons per hour	Dust Collectors (BL-DC3 & BL-DC4)	BL-DC3 & BL-DC4
Discharge of BL-SC6 to BL-SB1	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of BL-SC6 to BL-SB2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC6 to BL-SB3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC6 to BL-SB4	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC7 to BL-SB1	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC7 to BL-SB2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC7 to BL-SB3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-SC7 to BL-SB4	Transfer Point, 276 tons per hour	Dust Collector (BL-DC7)	BL-DC7
Discharge of BL-BE3 to BL-SB5	Transfer Point, 450 tons per hour	Dust Collector (BL-SB5-DC1)	BL-SB5-DC1
Discharge of Pneumatic Line to BL-SB5	Transfer Point	Dust Collector (BL-SB5-DC1)	BL-SB5-DC1
Discharge of BL-SB3-SC to Rail Cars	Bulk Loading System, 276 tons per hour	Dust Collector (BL-DC5)	BL-DC5
Discharge of BL-AS2A to Trucks	Bulk Loading System, 276 tons per hour	Dust Collector (BL-DC6)	BL-DC6
Discharge of BL-AS2B to Trucks	Bulk Loading System, 276 tons per hour	Dust Collector (BL-DC6)	BL-DC6
Discharge of BL-SB5-AS1 to Trucks	Bulk Loading System, 276 tons per hour	Dust Collector (BL-SB5-DC2)	BL-SB5-DC2
Discharge of Pneumatic Line to C2-SB24	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB25	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB26	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB24	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB25	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB26	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB24	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB25	Transfer Point	Dust Collector (CM-DC18)	CM-DC18
Discharge of Pneumatic Line to C2-SB26	Transfer Point	Dust Collector (CM-DC18)	CM-DC18

Emission Unit/Affected Source Name	Emission Unit/ Affected Source Description (Nominal Capacity)	Control Measure (Control Device ID Number)	Emission Point ID Number
Discharge of BL-SC8 to BL-SC3	Transfer Point, 276 tons per hour	Dust Collector (BL-DC8)	BL-DC8
Discharge of BL-SC8 to BL-SC2	Transfer Point, 276 tons per hour	Dust Collector (BL-DC8)	BL-DC8
Discharge of BL-DC8 to BL-SC3	Transfer Point	Dust Collector (BL-DC8)	BL-DC8
Discharge of BL-DC8 to BL-SC2	Transfer Point	Dust Collector (BL-DC8)	BL-DC8
Discharge of Pneumatic Line to BL-SB7	Transfer Point	Dust Collector (BL-SB7-DC1)	BL-SB7-DC1
Discharge of BL-BE3 to BL-SB7	Transfer Point, 450 tons per hour	Dust Collector (BL-SB7-DC1)	BL-SB7-DC1
Discharge of BL-SB7-SPT (WEST)	Bulk Loading System, 450 tons per hour	Dust Collector (BL-SB7-DC1)	BL-SB7-DC1
Discharge of BL-SB7-SPT (EAST)	Bulk Loading System, 450 tons per hour	Dust Collector (BL-SPT-DC)	BL-SPT-DC
Truck Unloading to Mortar Additive Bins MA-B1, MA-B2, and MA-B3	Bulk Unloading System	Dust Collector (CM-MA-DC1)	CM-MA-DC1
Discharge of PH-P3	Bagging System, 276 tons per hour	Dust Collector (PH-DC1)	PH-DC1
Discharge of PH-P4	Bagging System, 276 tons per hour	Dust Collector (PH-DC2)	PH-DC2
Bagging Operation	Bagging System	Dust Collectors (PH-DC4 & PH-DC5)	PH-DC4 & PH-DC5

B. Particulate Matter Emission Standards

1. The Permittee shall not cause or allow to be emitted into the atmosphere from any emission unit listed in Condition V.A any gases which exhibit opacity greater than 10 percent.

[A.A.C. R18-2-1101(B)(50) {40 CFR §§ 63.1347 and 63.1348}]

2. The Permittee shall maintain and operate Dust Collectors CM7-DC1, CM7-DC3, D2-1-DC1, D2-PC, D3-1-DC1, D3-1-DC2, D5-PC, H4-DC2, and RS-DC1 such that the alarm of the associated Bag Leak Detection System, as required by Condition V.D.2.a, is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month block period.

[A.A.C. R18-2-406(A)(4), R18-2-406(A)(5), and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(9)}]

3. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector listed in Condition V.A any gases which contain PM-10 in excess of 0.005 gr/dscf, based on an average of three test runs of a minimum one hour duration each.

[A.A.C. R18-2-406(A)(4)]

4. The Permittee shall not cause or allow to be emitted into the atmosphere from any Dust Collector gases which contain PM-10 in excess of the following emission rates, based on an average of three test runs of a minimum one hour duration each.

Emission Point ID Number	PM-10 Emission Limit (lbs/hr)
BL-DC1	0.11
BL-DC2	0.10
BL-DC3	0.12
BL-DC4	0.14
BL-DC5	0.15
BL-DC6	0.16
BL-DC7	0.10
BL-DC8	0.21
BL-SB5-DC1	0.20
BL-SB5-DC2	0.06
BL-SB5-DC3	0.06
BL-SB7-DC1	0.17
BL-SPT-DC	0.10
C2-DC2	0.12
C2-DC3	0.20
C2-DC4	0.11
C2-DC5	0.47
C2-DC6	0.08
C2-DC7	0.10
C2-DC8	0.11
C2-DC9	0.07
C2-DC10	0.11
C2-DC11	0.11
C2-DC12	0.11
C2-DC13	0.12
C2-DC14	0.12
CM7-DC1	0.46
CM7-DC2	0.27
CM7-DC3	1.13
CM-DC10	0.25
CM-DC11	0.14
CM-DC12	0.25
CM-DC14	0.22

Emission Point ID Number	PM-10 Emission Limit (lbs/hr)
CM-DC15	0.22
CM-DC16	0.22
CM-DC17	0.16
CM-DC18	0.41
CM-DC8	0.16
CM-DC9	0.25
CM-MA-DC1	0.04
D2-1-DC1	0.50
D2-DC1	0.89
D2-DC3	0.04
D2-DC4	0.06
D2-PC	3.15
D3-1-DC1	0.70
D3-1-DC2	3.78
D3-1-DC3	0.50
D4-DC1	0.27
D4-DC2	0.19
D5-DC1	0.28
D5-DC2	0.41
D5-PC	1.72
F2-DC1	0.29
F3-DC1	0.06
F3-DC2	0.07
F4-DC1	0.75
F5-DC1	0.28
H2-DC1	0.17
H2-DC2	0.01
H2-DC3	0.38
H4-DC1	0.08
H4-DC2	1.07
H5-DC1	0.20
J2-SD1-DC1	0.69
J2-SD2-DC1	0.69
J3-DC1	0.34
J3-DC2	0.34
J3-DC3	0.12
J3-DC4	0.12

Emission Point ID Number	PM-10 Emission Limit (lbs/hr)
J3-DC5	0.10
PH-DC1	0.20
PH-DC2	0.22
PH-DC3	0.15
PH-DC4	0.10
PH-DC5	0.27
RS-DC1	2.41

[A.A.C. R18-2-306.01 and R18-2-406(A)(5)}]

C. Air Pollution Control Requirements

At all times when any Emission Unit listed in Condition V.A is in operation, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, install, maintain and *operate the associated Dust Collector(s), Water Spray, Wind Screen, or Enclosure in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(d) and (e), R18-2-331(B), and R18-2-406(A)(4)]
Material Permit Conditions are indicated with underline and italics.

D. Monitoring, Recordkeeping, and Reporting Requirements

1. Operations and Maintenance Plans

a. The Permittee shall prepare written operations and maintenance plans for each Emission Unit listed in Condition V.A.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)}]

b. Each plan required by Condition V.D.1.a shall be submitted to the Director for review and approval using the appropriate permit revision mechanism in Title 18, Chapter 2, Article 3 of the Arizona Administrative Code.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)}]

c. Each plan required by Condition V.D.1.a shall include procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits of Condition V.B.1.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(1)}]

d. For each Storage Bin, Conveying System Transfer Point, Bagging System, Bulk Unloading System, and Bulk Loading System listed in Condition V.A, the plan required by Condition V.D.1.a shall include procedures to be used to periodically monitor the affected source. Such procedures must include the provisions of Condition V.D.3.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)}]

e. Failure to comply with any provision of an operations and maintenance plan approved by the Director in accordance with Condition V.D.1.b shall be a violation.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(b)}]

2. Monitoring and Recordkeeping for Finish Mill and Certain Other Dust Collectors

a. *The Permittee shall install, calibrate,* maintain, *and operate Bag Leak Detection Systems for detecting leaks in Dust Collectors CM7-DC1, CM7-DC3, D2-1-DC1, D2-PC, D3-1-DC1, D3-1-DC2, D5-PC, H4-DC2, and RS-DC1.* This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-306(A)(3)(c) and (d), R18-2-331(A)(3)(c), R18-2-331(B), and R18-2-1101(B)(50) {40 CFR § 63.1350(m)}]

Material Permit Conditions are indicated with underline and italics.

b. Each Bag Leak Detection System required by Condition V.D.2.a shall meet the requirements of Conditions V.D.2.b(1) through V.D.2.b(11).

(1) Each Bag Leak Detection System must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.0044 grains per actual cubic foot or less. "Certify" shall mean that the instrument manufacturer has tested the instrument on gas streams having a range of particle size distributions and confirmed by means of valid filterable PM tests that the minimum detectable concentration limit is 0.0044 grains per actual cubic foot or less.

[A.A.C. R18-2-306(A)(3)(c) and (d) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(1)}]

(2) The sensor on each Bag Leak Detection System must provide output of relative PM emissions.

[A.A.C. R18-2-306(A)(3)(c) and (d) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(2)}]

(3) Each Bag Leak Detection System must have an alarm that will activate automatically when it detects a significant increase in relative PM emissions greater than a preset level.

[A.A.C. R18-2-306(A)(3)(c) and (d) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(3)}]

(4) The presence of an alarm condition should be clearly apparent to facility operating personnel.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(4)}]

(5) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.

[A.A.C. R18-2-306(A)(3)(c) and (d) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(5)}]

(6) Each Bag Leak Detection System must be installed, operated, adjusted, and maintained so that it is based on the manufacturer's written specifications and recommendations.

[A.A.C. R18-2-306(A)(3)(c) and (d) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(6)}]

(7) The baseline output of each Bag Leak Detection System must be established as follows:

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(7)}]

(a) Adjust the range and the averaging period of the device; and

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(7)(i)}]

(b) Establish the alarm set points and the alarm delay time.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(7)(ii)}]

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations and maintenance plan required by Condition V.D.1.a. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 1 calendar year period unless a responsible official as defined in 40 CFR § 63.2 certifies in writing to the Director that the Dust Collector has been inspected and found to be in good operating condition.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(8)}]

(9) The Permittee shall continuously record the output from the Bag Leak Detection System during periods of normal operation. Normal operation does not include periods when the Bag Leak Detection System is being maintained or during startup, shutdown or malfunction.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(9)}]

(10) Except as provided in Condition V.D.2.b(11), each time the alarm activates, alarm time will be counted as the actual amount of time taken by the Permittee to initiate corrective actions.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(9)}]

(11) If inspection of the Dust Collector demonstrates that no corrective actions are necessary, no alarm time will be counted.

[A.A.C. R18-2-306(A)(3)(c) and R18-2-1101(B)(50) {40 CFR § 63.1350(m)(9)}]

c. Each 6-month block period for which the Bag Leak Detection System alarm time, as determined in accordance with Conditions V.D.2.b(9) through V.D.2.b(11), exceeds the limit established in Condition V.B.2 shall be considered a period of excess emissions.

[A.A.C. R18-2-306(A)(5)(b)]

d. The Permittee shall report excess emissions and deviations in accordance with Sections XII.A and XII.B, respectively, in Attachment "A" of this permit.

[A.A.C. R18-2-306(A)(5)(b)]

3. Periodic Visible Emissions Observations

For each Bagging System, Bulk Loading System, Bulk Unloading System, Storage Bin, and Transfer Point, listed in Condition V.A, the Permittee shall conduct periodic visible emissions observations in accordance with Conditions V.D.3.a through V.D.3.g. This requirement does not apply to affected sources or associated dust collectors that utilize Bag Leak Detection Systems installed and operated in accordance with the requirements of Condition V.D.2.

a. Except as provided in Condition V.D.3.e, the Permittee must conduct a monthly 1-minute visible emissions test of the affected source in accordance with Method 22 of appendix A to 40 CFR part 60. The test must be conducted while the affected source is in operation.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(i)}]

b. If no visible emissions are observed in six consecutive monthly tests for an affected source, the Permittee may decrease the frequency of testing from monthly to semi-annually for that affected source. If visible emissions are observed during any semi-annual test, the Permittee must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(ii)}]

c. If no visible emissions are observed during the semi-annual test for an affected source, the Permittee may decrease the frequency of testing from semi-annually to annually for that affected source. If visible emissions are observed during any annual test, the Permittee must resume testing of that affected source on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(iii)}]

d. If visible emissions are observed during any Method 22 test, the Permittee must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to 40 CFR part 60. The Method 9 test must begin within one hour of any observation of visible emissions.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(iv)}]

e. The requirement to conduct Method 22 visible emissions monitoring under this paragraph shall not apply to any totally enclosed conveying system transfer point, regardless of the location of the transfer point. "Totally enclosed conveying system transfer point" shall mean a conveying system transfer point that is enclosed on all sides, top, and bottom. The enclosures for these transfer points shall be operated and maintained as total enclosures on a continuing basis in accordance with the facility operations and maintenance plan.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(v)}]

f. If any partially enclosed or unenclosed conveying system transfer point is located in a building, the Permittee shall have the option to conduct a

Method 22 visible emissions monitoring test according to the requirements of Conditions V.D.3.a through V.D.3.d for each such conveying system transfer point located within the building, or for the building itself, according to Condition V.D.3.g.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(vi)}]

g. If visible emissions from a building are monitored pursuant to Condition V.D.3.f, the requirements of Conditions V.D.3.a through V.D.3.d apply to the monitoring of the building, and the Permittee must also test visible emissions from each side, roof and vent of the building for at least 1 minute. The test must be conducted under normal operating conditions.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1350(a)(4)(vii)}]

4. Recordkeeping, Reporting, and Notification Requirements for HAP Emission Standards

a. The Permittee shall maintain the following records:

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)}]

(1) All records as required by 40 CFR §§ 63.10(b)(2) and (b)(3).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)}]

(2) All documentation supporting initial notifications and notifications of compliance status under 40 CFR § 63.9.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(1)}]

(3) All records of applicability determination, including supporting analyses.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(2)}]

(4) If the Permittee has been granted a waiver under 40 CFR § 63.8(f)(6), any information demonstrating whether the source is meeting the requirements for a waiver of recordkeeping or reporting requirements.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(b)(3)}]

b. The Permittee shall comply with the reporting requirements specified in 40 CFR § 63.10 as follows:

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)}]

(1) As required by 40 CFR § 63.10(d)(2), the Permittee shall report the results of performance tests as part of the notification of compliance status.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(1)}]

(2) As required by 40 CFR § 63.10(d)(3), the Permittee shall report the opacity results from tests required by Conditions V.E.4.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(2)}]

(3) As required by 40 CFR § 63.10(d)(5), if actions taken by the Permittee during a startup, shutdown, or malfunction (including

actions taken to correct a malfunction) are consistent with the procedures specified in the Permittee's startup, shutdown, and malfunction plan specified in 40 CFR § 63.6(e)(3), the Permittee shall state such information in a semi-annual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(4)}]

(4) Any time an action taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the Permittee shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (fax) transmission. The immediate report shall be followed by a letter, certified by the Permittee, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(5)}]

(5) As required by 40 CFR § 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR § 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(6)}]

(6) As required by 40 CFR § 63.10(e)(3), the Permittee shall submit an excess emissions and continuous monitoring system performance report for any event when the data provided by the continuous monitoring system indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(8)}]

(7) The Permittee shall submit a summary report semiannually, along with the compliance certification, which contains the information specified in 40 CFR § 63.10(e)(3)(vi). In addition, the summary report shall include all failures to comply with any provision of any operation and maintenance plan required by Condition V.D.1.a.

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(9)}]

(8) If the total continuous monitoring system downtime for any continuous monitoring system is 10 percent or greater of the total operating time for the reporting period, the Permittee shall submit an excess emissions and continuous monitoring system

performance report along with the summary report required by Condition V.D.4.b(7).

[R18-2-1101(B)(50) {40 CFR § 63.1354(b)(10)}]

c. The Permittee shall comply with the notification requirements in 40 CFR § 63.9 as follows:

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)}]

(1) Notification of performance tests, as required by 40 CFR §§ 63.7 and 63.9(e).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(2)}]

(2) Notification of opacity and visible emission observations required by Condition V.E.4 in accordance with 40 CFR §§ 63.6(h)(5) and 63.9(f).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(3)}]

(3) Notification of compliance status, as required by 40 CFR § 63.9(h).

[R18-2-1101(B)(50) {40 CFR § 63.1353(b)(5)}]

d. The Permittee shall maintain files of all information (including all reports and notifications) required in a form suitable and readily available for inspection and review as required by 40 CFR § 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two years of data shall be retained on site. The remaining three years of data may be retained off site. The files may be maintained on microfilm, on a computer, on floppy disks, on magnetic tape, or on microfiche.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1355(a)}]

5. Monitoring and Recordkeeping for Other Dust Collectors

For each Dust Collector listed in Condition V.A, the Permittee shall perform monitoring in accordance with Conditions V.D.5.a through V.D.5.d. This requirement does not apply to affected sources or associated dust collectors that utilize Bag Leak Detection Systems installed and operated in accordance with the requirements of Condition V.D.2.

a. The Permittee shall conduct a monthly visible emissions observation of the exhaust from each dust collector listed in Condition V.A, in accordance with EPA Reference Method 22. If visible emissions are observed during the monthly visible emissions observation, the Permittee shall initiate investigation of the dust collector within 24 hours of the occurrence, to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Conditions V.B.3 and V.B.4.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

b. *The Permittee shall install, calibrate*, maintain, and operate, according to the manufacturer's specifications, *a device for monitoring and recording the pressure drop across each dust collector*. This condition is not material in the event failure to comply is due to a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a startup or shutdown, or resulted from upset of operations.

[A.A.C. R18-2-331(A)(3)(c), R18-2-331(B), R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]
Material Permit Conditions are indicated with underline and italics.

c. The Permittee shall perform monthly inspections of each dust collector and the associated pressure drop continuous parameter monitoring system in accordance with the manufacturers' recommended procedures. The Permittee shall take corrective action following the discovery of any abnormal operation or required maintenance of any dust collector or the associated pressure drop continuous parameter monitoring system as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions, but no later than within 24 hours following detection.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

d. If a monthly inspection performed pursuant to Condition V.D.5.b indicates that the pressure drop across any dust collector is outside the range established pursuant to Condition V.E.5.b, the Permittee shall initiate investigation of the control equipment within 24 hours of the occurrence to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the emission standards in Conditions V.B.3 and V.B.4.

[A.A.C. R18-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

6. Notification Requirements for Kiln 6 Project

a. On or before the date that Section V of Attachment "E" becomes effective, the Permittee shall submit written notification of the schedule for shutting down or modifying the emissions units covered by Sections VI and VIII of Attachment "B."

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

b. The notification required by Condition V.D.6.a shall include an updated PM netting analysis and an updated PM-10 emissions offset analysis for the Kiln 6 project.

[A.A.C. R18-2-306.01, R18-2-403(A)(2)]

E. Testing Requirements

1. The Permittee shall perform initial and periodic performance tests in accordance with Conditions V.E.2 through V.E.5. Initial performance tests shall be performed within 180 days after initial startup of the affected source.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4) and R18-2-1101(B)(1) {40 CFR §§ 63.6(h)(5) and 63.7(a) }]

2. For each performance test required pursuant to Condition V.E.1, the Permittee shall submit a test plan to the Director in accordance with Condition XVIII.D of Attachment "A."

[A.A.C. R18-2-312(B) and R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

3. Performance test results shall be documented in complete test reports that contain the information required by Conditions V.E.3.a through V.E.3.k.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

a. A brief description of the process and the air pollution control system;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(1)}]

b. Sampling location description(s);

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(2)}]

c. A description of sampling and analytical procedures and any modifications to standard procedures;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(3)}]

d. Test results;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(4)}]

e. Quality assurance procedures and results;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(5)}]

f. Records of operating conditions during the test, preparation of standards, and calibration procedures;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(6)}]

g. Raw data sheets for field sampling and field and laboratory analyses;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(7)}]

h. Documentation of calculations;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(8)}]

i. All data recorded and used to establish parameters for compliance monitoring;

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(9)}]

j. Any other information required by the test method; and

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)(10)}]

k. All other relevant information.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), R18-2-1101(B)(50) {40 CFR § 63.1349(a)}]

4. Test Methods and Procedures for Opacity of Visible Emissions

a. The Permittee shall demonstrate initial compliance with Condition V.B.1 by conducting tests in accordance with Method 9 of appendix A to 40 CFR part 60.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)}]

b. Each performance test required by Condition V.E.4.a shall be conducted under the conditions that exist when the affected source is operating at the representative performance conditions in accordance with 40 CFR § 63.7(e).

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)}]

c. The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the opacity standard.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)}]

d. The duration of the Method 9 performance test shall be 3 hours (thirty 6-minute averages), except that the duration of the Method 9 performance test may be reduced to 1 hour if Conditions V.E.4.d(1) and V.E.4.d(2) are met:

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)}]

(1) There are no individual readings greater than 10 percent opacity;

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)(i)}]

(2) There are no more than three readings of 10 percent for the first 1-hour period.

[A.A.C. R18-2-1101(B)(50) {40 CFR § 63.1349(b)(2)(ii)}]

5. Test Methods and Procedures for Particulate Matter

a. The Permittee shall demonstrate initial compliance with Conditions V.B.3 and V.B.4 by conducting performance tests as follows.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(1) The Permittee shall use any of the following test methods to determine the PM-10 concentration:

(a) Method 5 in appendix A to 40 CFR part 60;

(b) Method 201 in appendix M to 40 CFR part 51; or

(c) Method 201a in appendix M to 40 CFR part 51.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(2) Each performance test shall consist of three separate runs.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(3) Each test run shall be conducted for at least one hour, and the minimum sample volume shall be 30 dscf.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

(4) The average of the three runs shall be used to determine compliance.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

b. For each dust collector subject to the requirements of Condition V.D.5, during each performance test conducted pursuant to Condition V.E.5.a, the Permittee shall determine a range of pressure drop values for the dust collector using the following procedures:

(1) During each performance test run, continuously monitor and record the pressure drop across the dust collector as required under Condition V.D.5.a;

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

(2) Determine a range of dust collector pressure drop values and associated averaging time, based on the pressure drop data monitored during the performance test. The maximum pressure drop (i.e., the high end of the range) shall be 3.0 in. w.c. greater than the arithmetic average of the pressure drop readings during the performance test. The minimum pressure drop (i.e., the low end of the range) shall be either one-half the arithmetic average of the pressure drop readings during the performance test or 3.0 in. w.c. less than the arithmetic average of the pressure drop readings during the performance test, whichever is greater.

[A.A.C. R18-2-306(A)(3)(c), R18-2-403(A)(1), R18-2-406(A)(4), and R18-2-406(A)(5)]

c. For any affected facility for which the initial performance tests required by Condition V.E.5.a are performed with more than three years remaining in the permit term, the performance tests required by Condition V.E.5.a shall be repeated once during the permit term.

[A.A.C. R18-2-403(A)(1), R-18-406(A)(4) and R-18-406(A)(5)]

F. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR part 63 subpart LLL.

[A.A.C. R18-2-325]

XIII. EMERGENCY GENERATOR

The requirements of this section (Section XIII of Attachment "E") shall apply beginning on the first date when the emissions unit listed in Condition XIII.A becomes operational. The unit listed in Condition XIII.A shall be deemed operational on the first calendar day following on-site installation.

A. List of Emission Units

Emission Unit Name (Equipment ID Number)	Emission Unit Description	Control Measure (Control Device ID Number)
Emergency Generator	Reciprocating internal combustion engine, diesel fuel-fired, driving emergency electrical generator, 1249 kW output	Not applicable

B. Emission Limits/Standards

1. The Permittee shall not cause or allow the operation of the Emergency Generator to exceed the limits listed in Conditions XIII.B.1.a and XIII.B.1.b.

[A.A.C. R18-2-306.01]

a. *The Permittee shall not cause or allow the Emergency Generator to operate in excess of 50 non-emergency hours per year. The following shall be excluded from consideration in determining compliance with this limitation:*

(1) Operation for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine.

(2) Operation in emergency situations.

[A.A.C. R18-2-306.01(A) and R18-2-331(A)(3)(a)]
Material Permit Conditions are indicated with underline and italics.

b. The Permittee shall not cause or allow the Emergency Generator to operate except for emergency operation as provided in Condition XIII.B.1.b(1) and maintenance and testing as provided by Condition XIII.B.1.b(2).

(1) Except as provided in Condition XIII.B.1.a, there is no time limit on the use of the Emergency Generator in emergency situations.

(2) The Emergency Generator may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing are limited to 100 hours per year.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), 40 CFR § 60.4211(e)]

2. The Permittee shall not install or operate an Emergency Generator internal combustion engine unless said engine has been certified by the engine manufacturer to meet the certification emission standards for new nonroad compression ignition engines for the same model year and maximum engine power in 40 CFR § 89.112 and 40 CFR § 89.113 for all pollutants beginning in model year 2007. The engine must be installed and configured according to the manufacturer's specifications.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), 40 CFR §§ 60.4205(b) and 60.4211(c)]

3. The Permittee shall operate and maintain the Emergency Generator internal combustion engine according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine. The Permittee may change only those settings that are permitted by the engine manufacturer.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), 40 CFR §§ 60.4206 and 60.4211(a)]

4. The Permittee shall not combust in the emergency generator internal combustion engine any fuel other than diesel fuel that meets the requirements of 40 CFR § 80.510(b).

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), 40 CFR § 60.4207(b)]

5. The Permittee shall not cause or allow to be emitted to the atmosphere from the Emergency Generator smoke for any period greater than 10 consecutive seconds which exceeds 40 percent opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.

[A.A.C. R18-2-719(E)]

6. Except as provided by Conditions XIII.B.6.a and XIII.B.6.b, fuel shall not be combusted in the Emergency Generator internal combustion engine except during periods when a valid visible emissions observation can be conducted in accordance with EPA Reference Method 9.

   a. Condition XIII.B.6 shall not apply to periods of emergency usage.

   b. Operation of the Emergency Generator may occur during periods when a valid visible emissions observation in accordance with EPA Reference Method 9 is not possible, provided that the requirements of Conditions XIII.C.1.a and XIII.C.1.b are met for that calendar day.

[A.A.C. R18-2-306(A)(3)]

C. Monitoring, Recordkeeping, and Reporting Requirements

1. The Permittee shall demonstrate compliance with the opacity limitation in Condition XIII.B.5 as follows:

   a. A certified EPA Reference Method 9 observer shall conduct visible emissions observations on the Emergency Generator internal combustion engine. All visible emissions observations shall be conducted in accordance with EPA Reference Method 9.

   b. Except as provided by Conditions XIII.C.1.c and XIII.C.1.d, visible emissions observations required by Condition XIII.C.1.a shall be

conducted for the Emergency Generator internal combustion engine for at least one six-minute period each calendar day.

c. Visible emissions observations shall not be required for the Emergency Generator internal combustion engine for any calendar day on which no fuel is combusted in the Emergency Generator.

d. Visible emissions observations shall not be required for the Emergency Generator for any calendar day on which the only fuel combustion in the Emergency Generator occurs during emergency operation.

[A.A.C. R18-2-306(A)(3)]

2. The Permittee shall maintain on-site, and readily available for inspection, a record of each visible emissions observation conducted as required by Conditions XIII.C.1.a and XIII.C.1.b. Each visible emissions observation record shall include the following:

a. The emissions unit for which the visible emissions observation was performed;

b. Location, date, and time of the visible emissions observation;

c. The results of the visible emissions observation;

d. The operating conditions existing at the time of the visible emissions observation; and

e. The name of the observer.

[A.A.C. R18-2-306(A)(3)]

3. The Permittee shall maintain readily available records of the following:

a. Records of the type and quantity of fuel combusted in the Emergency Generator.

(1) Records required by Condition XIII.C.3.a shall be created and maintained for each calendar day on which fuel is combusted in the Emergency Generator.

(2) Records required by Condition XIII.C.3.a shall indicate the sulfur content of the fuel combusted and the method of determination.

b. Records of all maintenance performed on the internal combustion engine. These records shall be created and maintained for each calendar day on which maintenance is performed on the Emergency Generator.

[A.A.C. R18-2-306(A)(3)]

4. The Permittee shall install a non-resettable hour meter prior to startup of the Emergency Generator internal combustion engine.

[A.A.C. R18-2-403(A)(1), R18-2-406(A)(4), 40 CFR § 60.4209(a)]

5. The Permittee shall submit the initial notification in 40 CFR § 63.9 (b) by the date specified. The notification should include the following:

   a. The information in 40 CFR §§ 63.9(b)(2)(i) through (v).

   b. A statement that the internal combustion engine has no additional requirements.

   c. An explanation of the basis of the exclusion (i.e., that it operates exclusively as an emergency, stationary, reciprocating internal combustion engine).

[40 CFR §§ 63.6590(b) and 63.6645(d)]

D. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR 60 subpart IIII, 40 CFR part 63 subpart ZZZZ, A.A.C. R18-2-719(E).

[A.A.C. R18-2-325]

Appendix 1 to Attachment "E"
Equipment List for Kiln 6 Alternate Operating Scenario

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
Quarry Crusher System						
B2-OC1	Overhead crane	1200 tph	1971	P&H/Harnishferger	N/A	CH23842
B2-OC2	Overhead crane	1200 tph	1971	P&H/Harnishferger	N/A	CH23843
Truck Dump	Hopper	150 ton	1971	N/A	N/A	N/A
B2-PF1	Pan feeder	1200 tph	1971	Stephens Adamson	N/A	N/A
B2-VG1	Vibrating grizzly	1200 tph	1971	Allis Chalmers	N/A	B40565
B2-IC1	Impact crusher	1200 tph	1971	Hazemag	N1000	N/A
B2-BF1	Belt feeder	1200 tph	1971	Stephens Adamson	N/A	N/A
B2-BC1	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B3-BC1	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B3-BC2	Belt Conveyor	1200 tph	1971	N/A	N/A	N/A
B3-BC3	Belt Conveyor	1200 tph	N/A	N/A	N/A	N/A
B3-BC4	Shuttle Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B2-DC1-SC1	Screw Conveyor	1200 tph	1972	N/A	N/A	N/A
B2-DC1-SC2	Screw Conveyor	1200 tph	1972	N/A	N/A	N/A
B3-DC1-SC	Screw Conveyor	1200 tph	1972	N/A	N/A	N/A
B3-VS1	Vibrating screen	1200 tph	1971	Hewitt-Robbins	VS7856	N/A
B2-DC1	Dust Collector	N/A	1972	Mikropul	2G3-96	70-H-1931
B3-DC1	Dust Collector	N/A	1972	Mikropul	1F3-24	70-H-1934
Overland Conveyor System						
B5-VF1 through B5-VF12	Vibrating feeders	1200 tph	1971	Eriez Magnetics	95A	RD4-109 through RD4-120
B5-BC1	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B5-BC2	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B5-BC3	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A
B5-BC4	Belt Conveyor	1200 tph	N/A	N/A	N/A	N/A
B5-DC1	Dust Collector	N/A	1972	Mikropul	36S-8-30	70-H-1935
B5-DC2	Dust Collector	N/A	1972	Mikropul	36S-8-30	70-H-1936
B5-DC3	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-390
Stacker/Reclaimer and Storage Area						
B6-BC1	Belt Conveyor	600 tph	1971	Rex Chain Belt	N/A	N/A
B7-BC1	Belt Conveyor	1200 tph	1971	Rex Chain Belt	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
B7-BC2	Drag Belt Conveyor	1200 tph	N/A	N/A	N/A	N/A
B7-BC3	Stacker Boom Conveyor	1200 tph	N/A	N/A	N/A	N/A
B8-BC1	Belt Conveyor	450 tph	1971	N/A	N/A	N/A
B8-BC1A	Belt Conveyor	500 tph	1971	N/A	N/A	N/A
C2-BC4	Belt Conveyor	500 tph	1971	Rex Chain Belt	N/A	N/A
D4-HOP	Hopper	50 Tons	2000	N/A	N/A	N/A
D4-BF1	Belt Feeder	100 tph	2000	N/A	N/A	N/A
C2-VF2	Vibrating Feeder	N/A	N/A	N/A	N/A	N/A
C2-TR1	Reclaimer	500 tph	1971	MIAG	N/A	N/A
B7-TS	Stacker	1200 tph	1971	MIAG	N/A	N/A
B7-DC1	Dust Collector	N/A	1972	Mikropul	80S-8-20	N/A
B8-DC1	Dust Collector	N/A	1972	Mikropul	80S-8-20	N/A
B8-DC2	Dust Collector	N/A	1972	Mikropul	80S-8-20	N/A
Kiln 6 - Roller Mill Feed Bin Addition						
C2-SB9	Bin	250 tons	K6	N/A	N/A	N/A
C2-SB10	Bin	250 tons	K6	N/A	N/A	N/A
D4-BC2	Belt Conveyor	525 stph	K6	N/A	N/A	N/A
D4-BC3	Belt Conveyor	525 stph	K6	N/A	N/A	N/A
D4-VB9	Bin Vibrator	525 stph	K6	N/A	N/A	N/A
D4-VB10	Bin Vibrator	525 stph	K6	N/A	N/A	N/A
C2-BC12	Belt Conveyor	525 tph	K6	N/A	N/A	N/A
C2-BC13	Belt Conveyor	525 tph	K6	N/A	N/A	N/A
D4-BS7	Belt Scale	525 tph	K6	N/A	N/A	N/A
D4-BS8	Belt Scale	525 tph	K6	N/A	N/A	N/A
Roller Mill Feed Area						
D4-SB3	Additive Bin	150 tons	2000	N/A	N/A	N/A
D4-SB4	Additive Bin	150 tons	2000	N/A	N/A	N/A
D4-SB5	Additive Bin	150 tons	2000	N/A	N/A	N/A
D4-SB6	Additive Bin	150 tons	2000	N/A	N/A	N/A
Future Additive Bin	Additive Bin	150 tons	N/A	N/A	N/A	N/A
C2-BC1	Belt Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-BC2	Belt Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-BC3	Belt Conveyor	460/525 tph	1971	Rex Chain Belt	N/A	N/A
C2-BC7	Belt Conveyor	460/525 tph	2000	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D4-BC1	Belt Conveyor	460/525 tph	2000	N/A	N/A	N/A
D4-BC1-ML	Metal Detector	460/525 tph	2000	N/A	N/A	N/A
C2-BC3-BF1	Belt Feeder	460/525 tph	1971	N/A	N/A	N/A
C2-BC3-BS	Belt Scale	460/525 tph	1971	N/A	N/A	N/A
D4-BS1	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
D4-BS2	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
D4-BS3	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
D4-BS4	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
D4-BS5	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
D4-BS6	Belt Scale	460/525 tph	2000	N/A	N/A	N/A
Future Belt scale	Belt Scale	460/525 tph	N/A	N/A	N/A	N/A
D4-BE1	Bucket Elevator	460/525 tph	2000	N/A	N/A	N/A
C2-DR1	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-DR1A-D	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-DR1B-D	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-DR2	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-DR2A-D	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-DR2B-D	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
D4-DR1	Drag Conveyor	460/525 tph	2000	N/A	N/A	N/A
C2-BE3	Bucket Elevator	460/525 tph	N/A	N/A	N/A	N/A
C2-BE4	Bucket Elevator	460/525 tph	N/A	N/A	N/A	N/A
C2-SB7	Storage Bin	250 tons	2000	N/A	N/A	N/A
C2-SB8	Storage Bin	250 tons	2000	N/A	N/A	N/A
D4-VB1	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
D4-VB2	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
D4-VB3	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
D4-VB4	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
D4-VB5	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
D4-VB6	Bin Vibrator	460/525 tph	2000	N/A	N/A	N/A
C2-DC1	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-1631
C2-DC3	Dust Collector	N/A	2000	N/A	N/A	N/A
D4-DC1	Dust Collector	N/A	2000	N/A	N/A	N/A
D4-DC2	Dust Collector	N/A	2000	N/A	N/A	N/A
Roller Mill						
D4-RM1	Roller Mill	460/525 tph	2000/K6	Polysius Quadropol	RMR 45/23	N/A
D4-SS1	Separator	460/525 tph	2000/K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D4-SB1	Storage Bin	460/525 tph	2000	N/A	N/A	N/A
D4-VF1	Vibrating Feeder	460/525 tph	2000	N/A	N/A	N/A
D4-RM1-OC1	Overhead Crane	460/525 tph	2000	N/A	N/A	N/A
D4-RM1-OC2	Overhead Crane	460/525 tph	2000	N/A	N/A	N/A
D4-RM1-OC3	Overhead Crane	460/525 tph	2000	N/A	N/A	N/A
D4-BE2	Bucket Elevator	460/525 tph	2000/K6	N/A	N/A	N/A
D4-CC1	Cyclone	460/525 tph	2000	N/A	N/A	N/A
D4-CC2	Cyclone	460/525 tph	2000	N/A	N/A	N/A
D4-CC3	Cyclone	460/525 tph	2000	N/A	N/A	N/A
D4-CC4	Cyclone	460/525 tph	2000	N/A	N/A	N/A
D4-CC-BL1	Fan	460/525 tph	2000/K6	N/A	N/A	N/A
D4-AS1	Air Slide	460/525 tph	2000	N/A	N/A	N/A
D4-AS2	Air Slide	460/525 tph	2000	N/A	N/A	N/A
D4-AS3	Air Slide	460/525 tph	2000	N/A	N/A	N/A
D4-RM1-HTR	Air Heater	N/A	2000	N/A	N/A	N/A
Homogenizing and Kiln Feed Silos						
F2-AS1	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F2-AS2	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F2-AS3	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F2-AS5	Air Slide	460 TPH	2000	N/A	N/A	N/A
F2-OT-AS	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F3-AS1	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F3-AS2	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F3-AS3	Air Slide	461 TPH	N/A	N/A	N/A	N/A
F3-AS4	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F3-AS6	Air Slide	460 TPH	N/A	N/A	N/A	N/A
F2-BE1	Bucket Elevator	460 TPH	N/A	N/A	N/A	N/A
F3-BE1	Bucket Elevator	460 TPH	1971	N/A	N/A	N/A
HS-1	Homogenizing Silo	3300 tons	1971	N/A	N/A	N/A
F3-SB1	Kiln Feed Storage Silo	3000 Tons	1971	N/A	N/A	N/A
F3-SB2	Kiln Feed Storage Silo	3000 Tons	1971	N/A	N/A	N/A
H4-SB-KS	Raw Mix Bin	25 tons	1971	N/A	N/A	N/A
H4-SC2	Screw Conveyor	460 TPH	N/A	N/A	N/A	N/A
H4-BS	Weighbelt Feeder	460 TPH	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
H4-FP1	Pneumatic Conveyance System	460 TPH	K6	N/A	N/A	N/A
H4-FC1	Compressor	460 TPH	K6	N/A	N/A	N/A
H4-DC1	Dust Collector	N/A	1972	Mikropul	25S-8-30B	79318
F2-DC1	Dust Collector	N/A	2000	N/A	N/A	N/A
F3-DC1	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-392
F3-DC2	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-393
Kiln 6 - Homogenizing Silo						
D4-AS3-DG1	Gate	525 stph	K6	N/A	N/A	N/A
D4-AS4	Air Slide	525 stph	K6	N/A	N/A	N/A
D4-BE3	Bucket Elevator	525 stph	K6	N/A	N/A	N/A
D4-AS5	Airslide	525 stph	K6	N/A	N/A	N/A
F4-HS	Homogenizing Silo	12,500 tons	K6	N/A	N/A	N/A
F4-AS1	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-AS2	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-AS3	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-AS4	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-AS5	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-AS6	Airslide	464 TPH	K6	N/A	N/A	N/A
F4-BL1	Blower	464 TPH	K6	N/A	N/A	N/A
F4-BL2	Blower	464 TPH	K6	N/A	N/A	N/A
F4-BL3	Blower	464 TPH	K6	N/A	N/A	N/A
F4-BL4	Blower	464 TPH	K6	N/A	N/A	N/A
F4-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
F5-SB1	Calibration Bin	464 TPH	K6	N/A	N/A	N/A
F5-AS1	Airslide	464 TPH	K6	N/A	N/A	N/A
F5-AS2	Airslide	464 TPH	K6	N/A	N/A	N/A
F5-AS3	Airslide	464 TPH	K6	N/A	N/A	N/A
F5-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
Raw Feed Materials to Rock Storage						
Crusher Hopper	Hopper	500 tph	N/A	N/A	N/A	N/A
B9-PF1	Pan Conveyor	500 tph	N/A	N/A	N/A	N/A
B9-OC1	Overhead Crane	N/A	N/A	N/A	N/A	N/A
RS-OC1	Overhead Crane	N/A	N/A	N/A	N/A	N/A
RS-OC2	Overhead Crane	N/A	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
B9-IC	Impact Crusher	500 tph	1952	Hewitt Robbins	N/A	N/A
B9-VS1	Vibrating Screen	500 tph	1952	Hewitt Robbins	N/A	N/A
B9-VS2	Vibrating Screen	500 tph	1952	Hewitt Robbins	N/A	N/A
B9-BC1	Belt Conveyor	500 tph	N/A	N/A	N/A	N/A
B9-BC2	Belt Conveyor	500 tph	N/A	N/A	N/A	N/A
B9-BC3	Belt Conveyor	500 tph	1949	Stephens Adamson	5-S4	N/A
B9-BC4	Belt Conveyor	500 tph	N/A	N/A	N/A	N/A
B9-BC4-BF	Belt feeder	500 tph	N/A	N/A	N/A	N/A
B9-BC4-BF-Hopper	Hopper	500 tph	N/A	N/A	N/A	N/A
B9-BC5	Belt Conveyor	500 tph	1951	N/A	N/A	N/A
B9-BC6	Belt Conveyor	500 tph	N/A	N/A	N/A	N/A
B9-DC1	Dust Collector	N/A	1985	Nordblow	BA-12	949-106
B9-DC2	Dust Collector	N/A	1985	Mikropul	80F3-10	855192H1
B9-DC3	Dust Collector	N/A	1985	Mikropul	80F2-10	855193H1
B9-DC5	Dust Collector	N/A	1985	Mikropul	36S-8-30	71-H-1622
Kiln 6 - Preheater and Kiln						
H4-KF	Fan	300 tph	K6	N/A	N/A	N/A
H4-WST	Gas Conditioning Tower	300 tph	K6	N/A	N/A	N/A
H4-HC1	Air compressor	N/A	K6	N/A	N/A	N/A
H4-HC2	Air compressor	N/A	K6	N/A	N/A	N/A
H4-DRC1	Drag Chain Conveyor	300 tph	K6	N/A	N/A	N/A
H4-DRC2	Drag Chain Conveyor	300 tph	K6	N/A	N/A	N/A
H5-BE1	Bucket Elevator	300 tph	K6	N/A	N/A	N/A
H5-SB1	Bin	365 tons	K6	N/A	N/A	N/A
H5-AS	Airslide	300 tph	K6	N/A	N/A	N/A
H5-FP1	Pneumatic Conveyor	300 tph	K6	N/A	N/A	N/A
H5-FC1	Blower	300 tph	K6	N/A	N/A	N/A
H5-FP2	Pneumatic Conveyor	300 tph	K6	N/A	N/A	N/A
H5-FC2	Blower	300 tph	K6	N/A	N/A	N/A
F5-SB1	Bin	300 tph	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
F5-AS1	Kiln Feed System	300 tph	K6	N/A	N/A	N/A
F5-AS2	Kiln Feed System	300 tph	K6	N/A	N/A	N/A
F5-AS3	Airslide	300 tph	K6	N/A	N/A	N/A
F5-A	Alleviator	300 tph	K6	N/A	N/A	N/A
F5-AL	Airlift Conveyor	300 tph	K6	N/A	N/A	N/A
F5-AL-BL3	Blower	300 tph	K6	N/A	N/A	N/A
F5-AL-BL2	Blower	300 tph	K6	N/A	N/A	N/A
F5-AL-BL1	Blower	300 tph	K6	N/A	N/A	N/A
H4-A	Alleviator	300 tph	K6	N/A	N/A	N/A
H4-AS1	Airslide	300 tph	K6	N/A	N/A	N/A
H4-AS4	Airslide	300 tph	K6	N/A	N/A	N/A
H4-AS2	Airslide	300 tph	K6	N/A	N/A	N/A
H4-AS3	Airslide	300 tph	K6	N/A	N/A	N/A
H4-AS5	Airslide	300 tph	K6	N/A	N/A	N/A
H4-CC1A	Preheater Stage 1	300 tph	K6	N/A	N/A	N/A
H4-CC2A	Preheater Stage 2	300 tph	K6	N/A	N/A	N/A
H4-CC3A	Preheater Stage 3	300 tph	K6	N/A	N/A	N/A
H4-CC4A	Preheater Stage 4	300 tph	K6	N/A	N/A	N/A
H4-CC5A	Preheater Stage 5	300 tph	K6	N/A	N/A	N/A
H4-CC1B	Preheater Stage 1	300 tph	K6	N/A	N/A	N/A
H4-CC2B	Preheater Stage 2	300 tph	K6	N/A	N/A	N/A
H4-CC3B	Preheater Stage 3	300 tph	K6	N/A	N/A	N/A
H4-CC4B	Preheater Stage 4	300 tph	K6	N/A	N/A	N/A
H4-CC5B	Preheater Stage 5	300 tph	K6	N/A	N/A	N/A
H4-CI	Calciner	300 tph	K6	N/A	N/A	N/A
H3-K6	Kiln	300 tph	K6	N/A	N/A	N/A
H3-CB	Kiln Burner	300 tph	K6	N/A	N/A	N/A
H4-TDF	Tire Handling System	300 tph	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
H4-SNCR	SNCR system	300 tph	K6	N/A	N/A	N/A
H4-DC2	Dust Collector	N/A	K6	N/A	N/A	N/A
H5-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
H5-GB	Dust Collector	N/A	K6	N/A	N/A	N/A
Kiln 6 - Clinker Cooler						
H2-QC	Clinker Cooler	300 tph	K6	N/A	N/A	N/A
H2-QC-BL1	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL2	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL3	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL4	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL5	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL6	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL7	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-BL8	Fan	300 tph	K6	N/A	N/A	N/A
H2-QC-RB	Clinker Roll Crusher	300 tph	K6	N/A	N/A	N/A
H2-HXC	Heat Exchanger	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF1	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF2	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF3	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF4	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF5	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF6	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF7	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF8	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF9	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF10	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF11	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A
H2-HXC-CF12	Cooling Air Fans	300 tph	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
H2-HXC-SC1	Screw Conveyor	300 tph	K6	N/A	N/A	N/A
H2-HXC-SC2	Screw Conveyor	300 tph	K6	N/A	N/A	N/A
H2-HXC-SC3	Screw Conveyor	300 tph	K6	N/A	N/A	N/A
H2-HXC-SC4	Screw Conveyor	300 tph	K6	N/A	N/A	N/A
H2-GB	Dust Collector	N/A	K6	N/A	N/A	N/A
Clinker/Gypsum Transport and Finish Mill Feed Bins						
C2-BC5	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
C2-BC6	Belt Conveyor	155 tph	1977	N/A	N/A	N/A
C2-BC6A	Belt Conveyor	155 tph	1977	N/A	N/A	N/A
C2-BC8	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
C2-BC9	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
C2-BC10	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
C2-BC11	Belt Conveyor	155 tph	1977	N/A	N/A	N/A
C2-BC11A	Belt Conveyor	155 tph	1977	N/A	N/A	N/A
D2-BC1	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
D2-BC2	Belt Conveyor	155 tph	2001	Rex Chain Belt	N/A	N/A
D2-BC6	Belt Conveyor	155 tph	2001	Rex Chain Belt	N/A	N/A
C2-BC5-BS	Belt Scale	155 tph	1971	Rex Chain Belt	N/A	N/A
D2-BS1	Belt Scale	155 tph	1971	Merrick	430	WLL9699
D2-BS2	Belt Scale	155 tph	1972	Merrick	430	WLL9696
D2-BS3	Belt Scale	155 tph	1973	Merrick	430	WLL9701
D2-BS4	Belt Scale	155 tph	1974	Merrick	430	WLL9698
D2-BS5	Belt Scale	155 tph	1975	Merrick	430	WLL9700
D2-BS6	Belt Scale	155 tph	1976	Merrick	430	WLL9697
C2-SC1	Screw Conveyor	155 tph	1972	N/A	N/A	N/A
C2-SB1	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-SB2	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-SB3	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-SB4	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-SB5	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-SB6	Storage Bin	360 tons	1971	N/A	N/A	N/A
C2-VF1	Vibrating Feeder	155 tph	N/A	N/A	N/A	N/A
C2-DC2	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-632
C2-DC4	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-1622
C2-DC5	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-394
C2-DC6	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-395

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
C2-DC7	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-396
C2-DC8	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-397
C2-DC9	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-398
C2-DC10	Dust Collector	N/A	1972	Mikropul	25S-8-30	71-H-399
C2-DC11	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-633
C2-DC12	Dust Collector	N/A	1986	Mikropul	25S-10-30	870085H1
C2-DC13	Dust Collector	N/A	1986	Mikropul	25S-10-30	870085H2
C2-DC14	Dust Collector	N/A	K6	N/A	N/A	N/A
D2-DC1	Dust Collector	N/A	1972	Mikropul	1F2	71-H-816
D2-DC3	Dust Collector	N/A	1972	Mikropul	36S-8-30	71-H-822
Kiln 6 - Clinker Storage						
H2-PF1	Metallic conveyor	N/A	K6	N/A	N/A	N/A
H2-PF2	Pan Conveyor	N/A	K6	N/A	N/A	N/A
H2-PF3	Pan Conveyor	N/A	K6	N/A	N/A	N/A
J2-SD1	Clinker Dome	N/A	K6	N/A	N/A	N/A
J3-SD1-VF1	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD1-VF2	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD1-VF3	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD1-VF4	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD1-VF5	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J2-SD2	Clinker Dome	N/A	K6	N/A	N/A	N/A
J3-SD2-VF1	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD2-VF2	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD2-VF3	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD2-VF4	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
J3-SD2-VF5	Vibrating Feeder	N/A	K6	N/A	N/A	N/A
H2-SB1	Clinker Bin	N/A	K6	N/A	N/A	N/A
H2-SB1-SPT	Loading Spout	N/A	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
J3-BC1	Belt Conveyor	N/A	K6	N/A	N/A	N/A
J3-BC2	Belt Conveyor	N/A	K6	N/A	N/A	N/A
J3-BC3	Belt conveyor	N/A	K6	N/A	N/A	N/A
J3-BC4	Belt conveyor	N/A	K6	N/A	N/A	N/A
H2-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
H2-DC3	Dust Collector	N/A	K6	N/A	N/A	N/A
J2-SD1-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
J2-SD2-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC2	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC3	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC4	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC5	Dust Collector	N/A	K6	N/A	N/A	N/A
J3-DC6	Dust Collector	N/A	K6	N/A	N/A	N/A
H2-DC2-SC1	Screw Conveyor	207 tph	2000	N/A	N/A	N/A
H2-DC2-SC2	Screw Conveyor	207 tph	2000	N/A	N/A	N/A
H2-DC2	Dust Collector	N/A	2000	N/A	N/A	N/A
RS-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
Finish Milling - CM Area						
CM7-AS1A	Air Slide	69 tph	1997	Bayshore	N/A	N/A
CM7-AS1B	Air Slide	69 tph	1997	Bayshore	N/A	N/A
CM7-AS1-MT	Metal Trap	69 tph	1997	Bayshore	N/A	N/A
CM7-AS2	Air Slide	69 tph	1997	Bayshore	N/A	N/A
CM7-AS3	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-AS4	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-AS5	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-AS6	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-AS7	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-DC1-AS	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-DC3-AS	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-CX-AS	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-BC1	Belt Conveyor	69 tph	N/A	N/A	N/A	N/A
CM7-BS1	Belt Scale	69 tph	1982	N/A	N/A	N/A
CM7-BS2	Belt Scale	69 tph	1982	N/A	N/A	N/A
CM7-BS3	Belt Scale	69 tph	N/A	N/A	N/A	N/A
CM7-BE1	Bucket Elevator	69 tph	1998	Rexnord	N/A	N/A
CM7-BE2	Bucket Elevator	69 tph	1998	Rexnord	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
CM-FP3	Pneumatic Conveyor	69 tph	N/A	N/A	N/A	N/A
CM-FP3-AS	Air Slide	69 tph	N/A	N/A	N/A	N/A
CM7-MT1	Material Trap	69 tph	N/A	N/A	N/A	N/A
CM7-MT1-BL1	Material Trap	69 tph	N/A	N/A	N/A	N/A
CM7-M	Mill	69 tph	1970	Allis Chalmers	N/A	B11915
CM7-CX	Mill Cooler	69 tph	1970	N/A	N/A	N/A
CM7-SC1	Screw Conveyor	69 tph	N/A	N/A	N/A	N/A
CM-OC1	Overhead Crane	N/A	N/A	N/A	N/A	N/A
CM7-RP1	Roll Crusher	69 tph	N/A	N/A	N/A	N/A
CM7-RP2	Roll Crusher	69 tph	N/A	N/A	N/A	N/A
CM-MA-SC1	Screw Conveyor	69 tph	N/A	N/A	N/A	N/A
CM-MA-SC2	Screw Conveyor	69 tph	N/A	N/A	N/A	N/A
CM-MA-SCF1	Scew Feeder	69 tph	N/A	N/A	N/A	N/A
CM-MA-SCF2	Screw Feeder	69 tph	N/A	N/A	N/A	N/A
CM-MA-SCF3	Screw Feeder	69 tph	N/A	N/A	N/A	N/A
CM7-SS	Separator	69 tph	1997	N/A	N/A	N/A
CM7 Clinker Bin	Storage Bin	N/A	1970	N/A	N/A	N/A
CM7 Gypsum Bin	Storage Bin	N/A	1970	N/A	N/A	N/A
CM7 Limestone Bin	Storage Bin	N/A	1982	N/A	N/A	N/A
CM-MA-BIN1	Storage Silo	150 tons	1970	N/A	N/A	N/A
CM-MA-BIN2	Storage Silo	150 tons	1970	N/A	N/A	N/A
CM-MA-BIN3	Storage Silo	150 tons	1970	N/A	N/A	N/A
CM7-BS1-VF1	Vibrating Feeder	69 tph	N/A	N/A	N/A	N/A
CM7-DC1	Dust Collector	N/A	1997	Amerex	N/A	N/A
CM7-DC2	Dust Collector	N/A	1998	Amerex	N/A	N/A
CM7-DC3	Dust Collector	N/A	1997	Amerex	N/A	N/A
CM-MA-DC1	Dust Collector	N/A	1970	Mikropul	16S-8-30	270-H-250
Finish Milling - D2 Area						
D2-AS1	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-AS2	Air Slide	155 tph	2001	N/A	N/A	N/A
D2-AS3	Air Slide	155 tph	2001	N/A	N/A	N/A
D2-1-AS1	Air Slide	155 tph	2001	N/A	N/A	N/A
D2-1-AS1A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS1B	Air Slide	155 tph	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D2-1-AS1C	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS2	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS3A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS3B	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS4A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS4B	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS4C	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS5A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS5B	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-AS8A	Air Slide	155 thp	N/A	N/A	N/A	N/A
D2-1-DC1-AS	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-PC-AS1A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-PC-AS1B	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-PC-AS2A	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-PC-AS2B	Air Slide	155 tph	N/A	N/A	N/A	N/A
D2-1-BE3	Bucket Elevator	155 tph	1971	Rex Chain Belt	N/A	N/A
D2-1-BE4	Bucket Elevator	155 tph	1971	Rex Chain Belt	N/A	N/A
D2-1-BC1	Belt Conveyor	155 tph	1971	Rex Chain Belt	N/A	N/A
D2-CX	Cement Cooler	155 tph	Future	N/A	N/A	N/A
D2-FP1	Pnuematic Pump	155 tph	N/A	N/A	N/A	N/A
D2-FC1	Compressor	155 tph	N/A	N/A	N/A	N/A
D2-FC2	Compressor	155 tph	N/A	N/A	N/A	N/A
D2-OC1	Overhead Crane	N/A	N/A	N/A	N/A	N/A
D2-1-M	Raw Mill	155 tph	1971	Allis Chalmers	N/A	B-16786
D2-1-SS	Separator	155 tph	PI	N/A	N/A	N/A
D2-PC	Product Collector	N/A	N/A	N/A	N/A	N/A
D2-DC4	Dust Collector	N/A	N/A	N/A	N/A	N/A
D2-1-DC1	Dust Collector	N/A	1975	Mikropul	283-96	71-H-612
Finish Milling - D3 Area						
D3-1-AS1	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS2A	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS2B	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS3	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS4A	Air Slide	150 tph	1973	Fuller	N/A	N/A
D3-1AS4B	Air Slide	150 tph	1987	Fluidor	N/A	N/A
D3-1-AS5A	Air Slide	150 tph	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D3-1-AS5B	Air Slide	150 tph	1987	Fluidor	N/A	N/A
D3-1-AS5B-MT	Material Trap	150 tph	N/A	N/A	N/A	N/A
D3-1-AS5B-MT-BL	Material Trap Blower	150 tph	N/A	N/A	N/A	N/A
D3-1-AS6	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS7	Air Slide	150 tph	1987	Fluidor	N/A	N/A
D3-1-AS8	Air Slide	150 tph	1987	Fluidor	N/A	N/A
D3-1-AS9	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS10	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-AS11	Air Slide	150 tph	1987	Fluidor	N/A	N/A
D3-1-AS12	Air Slide	150 tph	1973	Fuller	N/A	N/A
D3-1-AS13	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-DC2-AS1A	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-DC2-AS2A	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-DC2-AS1B	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-DC2-AS2B	Air Slide	150 tph	N/A	N/A	N/A	N/A
D3-1-BC1	Belt Conveyor	150 tph	1987	Rex Chain Belt	N/A	N/A
D3-1-BC2	Belt Conveyor	150 tph	1973	Rexnord	N/A	N/A
D3-1-BC3	Belt Conveyor	150 tph	1987	Polysius	N/A	N/A
D3-1-BC4	Belt Conveyor	150 tph	N/A	N/A	N/A	N/A
D3-1-BS1	Belt Scale	150 tph	1988	Thayer	N/A	N/A
D3-1-BS2	Belt Scale	150 tph	1973	Merrick	N/A	N/A
D3-1-BC2-BS	Belt Scale	150 tph	1973	Merrick	N/A	N/A
D3-1-BE1	Bucket Elevator	150 tph	1987	Rexnord	N/A	N/A
D3-1-BE2	Bucket Elevator	150 tph	1987	N/A	N/A	N/A
D3-1-BE3	Bucket Elevator	150 tph	1987	N/A	N/A	N/A
D3-1-BE4	Bucket Elevator	150 tph	1973	Rex Chain Belt	N/A	N/A
D3-1-BE5	Bucket Elevator	150 tph	1987	Rexnord	N/A	N/A
D3-1-CX	Cement Cooler	150 tph	N/A	N/A	N/A	N/A
D3-1-FP1	Pnuematic Pump	150 tph	N/A	N/A	N/A	N/A
D3-1-FC1	Compressor	150 tph	N/A	N/A	N/A	N/A
D3-1-FC2	Compressor	150 tph	N/A	N/A	N/A	N/A
D3-1-WC1	Cooling Tower	150 tph	N/A	N/A	N/A	N/A
D3-1-SS-CC	Cyclone	150 tph	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D3-1-M	Finish Mill	150 tph	1973	Allis Chalmers	N/A	B40131
D3-1-OC	Overhead Crane	150 tph	N/A	N/A	N/A	N/A
D3-1-HRP1	Roll Press	150 tph	1987	Polysius	N/A	450-4
D3-1-HRP2	Roll Press	150 tph	N/A	N/A	N/A	N/A
D3-1-BC3-SC	Screw Conveyor	150 tph	N/A	N/A	N/A	N/A
D3-1-BC4-SC	Screw Conveyor	150 tph	N/A	N/A	N/A	N/A
D3-1-DC1-SC1	Screw Conveyor	150 tph	1974	N/A	N/A	N/A
D3-1-DC1-SC2	Screw Conveyor	150 tph	1974	N/A	N/A	N/A
D3-1-DC3-SC	Screw Conveyor	150 tph	1987	N/A	N/A	N/A
D3-1-SC1	Screw Conveyor	150 tph	N/A	N/A	N/A	N/A
D3-1-SS	Separator	150 tph	N/A	Polysius	Sepol 290	N/A
D3-1-SB1	Storage Bin	150 tph	N/A	N/A	N/A	N/A
D3-1-SB2	Storage Bin	150 tph	N/A	N/A	N/A	N/A
D3-1-SB3	Storage Bin	150 tph	K6	N/A	N/A	N/A
D3-1-VB	Variable Feeder	150 tph	N/A	N/A	N/A	N/A
D3-1-VB1	Variable Feeder	150 tph	N/A	N/A	N/A	N/A
D3-1-BC5-HOP	Hopper	150 tph	N/A	N/A	N/A	N/A
D3-1-BC5	Belt Feeder	150 tph	N/A	N/A	N/A	N/A
D3-1-DC1	Dust Collector	N/A	1974	Mikropul	289S-10-20-T	72-H-2337
D3-1-DC2	Dust Collector	N/A	1987	Mikropul	289S-10-20-T	N/A
D3-1-DC3	Dust Collector	N/A	1987	Mikropul	289S-10-20-T	N/A
Kiln 6 - D5 Finish Mill System						
D5-SB1	Clinker Storage Bin	500 tons	K6	N/A	N/A	N/A
D5-SB2	Gypsum Storage Bin	250 tons	K6	N/A	N/A	N/A
D5-SB3	Additive/LS Storage Bin	250 tons	K6	N/A	N/A	N/A
D5-SB4	Mill Feed Storage Bin	30 tons	K6	N/A	N/A	N/A
D5-SB5	Bin - Rejects	20 tons	K6	N/A	N/A	N/A
D5-WF1	Belt Weigh Feeder	160 tph	K6	N/A	N/A	N/A
D5-WF2	Belt Weigh Feeder	160 tph	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
D5-WF3	Belt Weigh Feeder	160 tph	K6	N/A	N/A	N/A
D5-BC1	Belt Conveyor	160 tph	K6	N/A	N/A	N/A
D5-BE1	Bucket Elevator	160 tph	K6	N/A	N/A	N/A
D5-BC2	Belt Conveyor	160 tph	K6	N/A	N/A	N/A
D5-BC2-MGT	Magnetic Separator	N/A	K6	N/A	N/A	N/A
D5-BC2-ML	Metal Detector	N/A	K6	N/A	N/A	N/A
D5-DG1	Diverter Gate	160 tph	K6	N/A	N/A	N/A
D5-BC3	Belt Conveyor	160 tph	K6	N/A	N/A	N/A
D5-FM-RF	Rotary Airlock	160 tph	K6	N/A	N/A	N/A
D5-FM	OK-4 Roller Mill	160 tph	K6	N/A	N/A	N/A
D5-SS1	Separator	160 tph	K6	N/A	N/A	N/A
D5-FM-VB	Vibrating Feeder	160 tph	K6	N/A	N/A	N/A
D5-BC4	Belt Conveyor	160 tph	K6	N/A	N/A	N/A
D5-CC1	Cyclone	160 tph	K6	N/A	N/A	N/A
D5-CC2	Cyclone	160 tph	K6	N/A	N/A	N/A
D5-HTR	Natural Gas Heater	N/A	K6	N/A	N/A	N/A
D5-AS1	Air slide	160 tph	K6	N/A	N/A	N/A
D5-AS2	Air slide	160 tph	K6	N/A	N/A	N/A
D5-CX1	Powder cooler	160 tph	K6	N/A	N/A	N/A
D5-CX2	Powder cooler	160 tph	K6	N/A	N/A	N/A
D5-FP1	FK Pump	160 tph	K6	N/A	N/A	N/A
D5-FC1	FK Compressor	160 tph	K6	N/A	N/A	N/A
D5-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
D5-DC2	Dust Collector	N/A	K6	N/A	N/A	N/A
D5-PC	Product Collector	N/A	K6	N/A	N/A	N/A
Product Storage and Bulk Loadout						
BL-AS1	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS1B	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS2	Air Slide	400 tph	N/A	N/A	N/A	N/A
BL-AS2A	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS2B	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS3	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS3A	Air Slide	276 tph	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
BL-AS3B	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS4	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS5	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-AS6	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-DC3-AS1	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-DC4-AS1	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-SB5-AS1	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-SB5-AS2	Air Slide	276 tph	N/A	N/A	N/A	N/A
BL-SB6-OTAS	Air Slide	276 tph	N/A	N/A	N/A	N/A
CM-A1	Alleviator	276 tph	1970	N/A	N/A	N/A
CM-A2	Alleviator	276 tph	1971	N/A	N/A	N/A
CM-A3	Alleviator	276 tph	1971	N/A	N/A	N/A
CM-A4	Alleviator	276 tph	1971	N/A	N/A	N/A
CM-A5	Alleviator	276 tph	1971	N/A	N/A	N/A
CM-A1-AS13 through CM-A1-AS18	Air slides	276 tph	1971	N/A	N/A	N/A
CM-A2-AS13 through CM-A2-AS18	Air slides	276 tph	1971	N/A	N/A	N/A
CM-A3-AS13 through CM-A3-AS18	Air slides	276 tph	1971	N/A	N/A	N/A
CM-A4-AS13 through CM-A4-AS18	Air slides	276 tph	1971	N/A	N/A	N/A
CM-A5-AS13 through CM-A5-AS18	Air slides	276 tph	1971	N/A	N/A	N/A
BL-BE1	Bucket Elevator	450 tph	1959	N/A	N/A	N/A
BL-BE2	Bucket Elevator	450 tph	1959	N/A	N/A	N/A
BL-BE3	Bucket Elevator	450 tph	1999	N/A	N/A	N/A
BL-RS1	Rotary Screen	276 tph	N/A	N/A	N/A	N/A
BL-RS2	Rotary Screen	276 tph	N/A	N/A	N/A	N/A
BL-RS3	Rotary Screen	276 tph	N/A	N/A	N/A	N/A
BL-SC1A	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-SC1B	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-SC2	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
BL-SC3	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
BL-SC4	Screw Conveyor	276 tph	1959	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
BL-SC5	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
BL-SC6	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-SC7	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-SB3-SC	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-AS5-SC1	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-AS5-SC2	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
CM-SC5	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
BL-SB1	Storage Bin	150 Tons	N/A	N/A	N/A	N/A
BL-SB2	Storage Bin	150 Tons	N/A	N/A	N/A	N/A
BL-SB3	Storage Bin	150 Tons	N/A	N/A	N/A	N/A
BL-SB4	Storage Bin	150 Tons	N/A	N/A	N/A	N/A
BL-SB5	Storage Bin	850 Tons	1975	N/A	N/A	N/A
BL-SB6	Storage Bin	100 tons	N/A	N/A	N/A	N/A
CS-SB1	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB2	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB3	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB4	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB5	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB6	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB7	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB8	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB9	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB10	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB11	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB12	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB13	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB14	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB15	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB16	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB17	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB18	Storage Silo	1300 Tons	1955	N/A	N/A	N/A
CS-SB19	Storage Silo	3100 Tons	pre 1970	N/A	N/A	N/A
CS-SB20	Storage Silo	3100 Tons	pre 1970	N/A	N/A	N/A
CS-SB21	Storage Silo	3100 Tons	pre 1970	N/A	N/A	N/A
CS-SB22	Storage Silo	3100 Tons	pre 1970	N/A	N/A	N/A
CS-SB23	Storage Silo	3100 Tons	pre 1970	N/A	N/A	N/A
BL-SB5-DC1	Dust Collector	N/A	1980	Mikropul	36S-8-30	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
BL-SB5-DC2	Dust Collector	N/A	1980	Mikropul	25S-8-30	79261H
BL-SB5-DC3	Dust Collector	N/A	1980	Mikropul	25S-8-30	79318H1
BL-DC1	Dust Collector	N/A	1984	Mikropul	49S-8-20	845034H1
BL-DC2	Dust Collector	N/A	1984	Mikropul	49S-8-20	845038H1
BL-DC3	Dust Collector	N/A	1984	Mikropul	100S-8-20	845060H1
BL-DC4	Dust Collector	N/A	1984	Mikropul	100S-8-20	845060H2
BL-DC5	Dust Collector	N/A	1950's	Nordblow	BA-12	960-20
BL-DC6	Dust Collector	N/A	1986	Mikropul	100S-8-20	860058
BL-DC7	Dust Collector	N/A	1984	Mikropul	49S-10-20B	79545H1
CM-DC8	Dust Collector	N/A	1980	Mikropul	144S-6-20	76583H1
CM-DC9	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1179
CM-DC10	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1179
CM-DC11	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1180
CM-DC12	Dust Collector	N/A	1973	Mikropul	130S-8-20	71-H-1981
CM-DC14	Dust Collector	N/A	1987	Fuller	196C10	N/A
CM-DC15	Dust Collector	N/A	1987	Fuller	196C10	N/A
CM-DC16	Dust Collector	N/A	1987	Fuller	196C10	N/A
CM-DC17	Dust Collector	N/A	2001	N/A	N/A	N/A
Kiln 6- Cement Silos						
CS-SB24	Silo	6700 tons	K6	N/A	N/A	N/A
CS-SB25	Silo	6700 tons	K6	N/A	N/A	N/A
CS-SB26	Silo	6700 tons	K6	N/A	N/A	N/A
BL-SC8	Screw Conveyor	300 tph	K6	N/A	N/A	N/A
CM-DC18	Dust Collector	N/A	K6	N/A	N/A	N/A
BL-DC8	Dust Collector	N/A	K6	N/A	N/A	N/A
Kiln 6- Bulk Loading						
BL-SB7	Storage Bin	500 tons	K6	N/A	N/A	N/A
BL-SB7-AS	Air Slide	500 tph	K6	N/A	N/A	N/A
BL-SB7-SPT	Loading Spout	500 tph	K6	N/A	N/A	N/A
BL-SB7-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
BL-SPT-DC	Dust Collector	N/A	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
Cement Packhouse						
PH-DC-AS	Air Slide	276 tph	N/A	N/A	N/A	N/A
PH-PK3-BC1	Belt Conveyor	276 tph	1950	St. Regis	N/A	N/A
PH-PK3-BC2	Belt Conveyor	276 tph	1969	St. Regis	N/A	N/A
PH-PK3-BC4	Belt Conveyor	276 tph	1969	St. Regis	N/A	N/A
PH-PK3-BC5	Belt Conveyor	276 tph	1969	St. Regis	N/A	N/A
PH-PK4-BC1	Belt Conveyor	276 tph	1950	St. Regis	N/A	N/A
PH-BC2	Belt Conveyor	276 tph	1969	St. Regis	N/A	N/A
PH-PZ2-BC1	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PZ2-BC2	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PZ2-BC3	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PZ2-BC4	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PZ2-BC5	Belt Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-BE1	Bucket Elevator	276 tph	1948	N/A	N/A	N/A
PH-BE2	Bucket Elevator	276 tph	1952	N/A	N/A	N/A
PH-FP1	Pneumatic Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-FC1	Pneumatic Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-FC2	Pneumatic Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PK3	Cement Packer	276 tph	2003	Mollers	N/A	N/A
PH-PK4	Cement Packer	276 tph	1950	N/A	N/A	N/A
PH-PZ2	Palletizer	N/A	1999	Mollers	N/A	N/A
PH-PZ3	Palletizer	N/A	1999	Mollers	N/A	N/A
PH-PZ2-GRC	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A
PH-PZ2-PRC1	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A
PH-PZ2-PRC2	Roller Conveyor	276 tph	1999	Mollers	N/A	N/A
PH-RS1	Rotary Screen	276 tph	N/A	N/A	N/A	N/A
PH-RS2	Rotary Screen	276 tph	N/A	N/A	N/A	N/A
PH-PK3-SC1	Screw Conveyor	276 tph	1950	N/A	N/A	N/A
PH-SC1	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
PH-SC2	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-SC3	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
PH-SC4	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-SC5	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-SC6	Screw Conveyor	276 tph	1969	N/A	N/A	N/A
PH-SC8N	Screw Conveyor	276 tph	1959	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
PH-SC8S	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
PH-SC9	Screw Conveyor	276 tph	1959	N/A	N/A	N/A
PH-PZ2-SC1	Screw Conveyor	276 tph	N/A	N/A	N/A	N/A
PH-PK3-SE1A	Sack Elevator	276 tph	1950	N/A	N/A	N/A
PH-PK3-SE1B	Sack Elevator	276 tph	1950	N/A	N/A	N/A
PH-PZ2-SE1A	Sack Elevator	276 tph	N/A	N/A	N/A	N/A
PH-PZ2-SE1B	Sack Elevator	276 tph	N/A	N/A	N/A	N/A
PH-SB1	Storage Bin	N/A	N/A	N/A	N/A	N/A
PH-SB2	Storage Bin	N/A	N/A	N/A	N/A	N/A
PH-DC1	Dust Collector	N/A	1979	Mikropul	144S-10-20	79296H1
PH-DC2	Dust Collector	N/A	1979	Mikropul	144S-10-20	79296H2
PH-DC3	Dust Collector	N/A	1985	Mikropul	100S-8-20	855258H1
PH-DC4	Dust Collector	N/A	1985	Mikropul	100S-8-20	855259
PH-DC5	Dust Collector	N/A	1975	Mikropul	100S-8-20	N/A
Solid Fuel (Coal/Coke) System						
R6-BC2	Belt Conveyor	50 tph	N/A	N/A	N/A	N/A
R6-BC3	Belt Conveyor	50 tph	N/A	N/A	N/A	N/A
R6-BC3-BS	Belt Scale	50 tph	N/A	N/A	N/A	N/A
H3-K4-CM	Coal Mill	25 tph	N/A	Raymond	713	N/A
H3-K4-CM-SS	Separator	25 tph	N/A	Raymond	N/A	N/A
H3-K4-CM-CC	Cyclone	25 tph	N/A	C.E.	N/A	N/A
R6-OC	Overhead Crane	N/A	N/A	N/A	N/A	N/A
R6-RP1	Rotary Crusher	50 tph	N/A	N/A	N/A	N/A
R6-SC1	Screw Conveyor	50 tph	N/A	N/A	N/A	N/A
R6-SC2	Screw Conveyor	50 tph	N/A	N/A	N/A	N/A
R6-SB	Silo	2500 tons	N/A	N/A	N/A	N/A
H3-K4-CM-SB	Storage Bin	150 tons	N/A	N/A	N/A	N/A
R6-VF1	Vibrating Feed Hopper	50 tph	N/A	N/A	N/A	N/A
R6-VF2	Vibrating Feed Hopper	50 tph	N/A	N/A	N/A	N/A
R6-VF3	Vibrating Feed Hopper	50 tph	N/A	N/A	N/A	N/A
R6-VF4	Vibrating Feed Hopper	50 tph	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
R6-VF5	Vibrating Feed Hopper	50 tph	N/A	N/A	N/A	N/A
R6-BA1	Vibrating Feeder	50 tph	N/A	N/A	N/A	N/A
R6-BA2	Vibrating Feeder	50 tph	N/A	N/A	N/A	N/A
R6-BA3	Vibrating Feeder	50 tph	N/A	N/A	N/A	N/A
H3-K4-BS1	Weigh Belt Feeder	25 tph	N/A	Thayer	N/A	N/A
H3-K4-BS1-SC	Scavenging Screw	25 tph	N/A	N/A	N/A	N/A
R6-BC1A	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BC1B	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BC4	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BC5	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BC6	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BC7	Belt Conveyor	300 tph	K6	N/A	N/A	N/A
R6-BE1	Bucket Elevator	300 tph	K6	N/A	N/A	N/A
R6-RDS	Stacker	300 tph	K6	N/A	N/A	N/A
R6-RP2	Rotary Crusher	300 tph	K6	N/A	N/A	N/A
H3-SB1	Storage Bin	1000 tons	K6	N/A	N/A	N/A
H3-SB2	Storage Bin	670 tons	K6	N/A	N/A	N/A
H3-SB3	Storage Bin	75 tons	K6	N/A	N/A	N/A
H3-SB4	Storage Bin	10 tons	K6	N/A	N/A	N/A
H3-BC1	Belt Conveyor	40 tph	K6	N/A	N/A	N/A
H3-BC2	Belt Conveyor	40 tph	K6	N/A	N/A	N/A
H3-BC3	Belt Conveyor	40 tph	K6	N/A	N/A	N/A
H3-BC3-DG	Diverter Gate	40 tph	K6	N/A	N/A	N/A
H3-MGT	Magnetic Separator	N/A	K6	N/A	N/A	N/A
H3-ML	Metal Detector	N/A	K6	N/A	N/A	N/A
H3-CM1-SCF	Screw Feeder	40 tph	K6	N/A	N/A	N/A
H3-CC1	Cyclone	40 tph	K6	N/A	N/A	N/A
H3-CM1	Coal Mill	40 tph	K6	N/A	N/A	N/A
H3-CM1-SS	Separator	40 tph	K6	N/A	N/A	N/A
H3-SC1	Screw Conveyor	40 tph	K6	N/A	N/A	N/A
H3-WF1	Rotor Scale	40 tph	K6	N/A	N/A	N/A
H3-WF2	Rotor Scale	40 tph	K6	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
H3-WF1-BL	Conveying Blower	40 tph	K6	N/A	N/A	N/A
H3-WF2-BL	Conveying Blower	40 tph	K6	N/A	N/A	N/A
H3-WF-BL	Conveying Blower	40 tph	K6	N/A	N/A	N/A
H3-DC1-SC	Screw Conveyor	40 tph	K6	N/A	N/A	N/A
H3-CO2	CO2 Inerting System	N/A	K6	N/A	N/A	N/A
H3-K4-WF1-SB	Storage Bin	10 tons	N/A	N/A	N/A	N/A
H3-K4-WF2-SB	Storage Bin	10 tons	N/A	N/A	N/A	N/A
H3-K4-WF1	Fuel Feeder	207 stph	N/A	Pfister	N/A	N/A
H3-K4-WF2	Fuel Feeder	207 stph	N/A	Pfister	N/A	N/A
H3-K4-DC1	Dust Collector	N/A	1990	Mikropul	N/A	N/A
H3-K4-DC1-SC	Screw Conveyor	40tph	1990	N/A	N/A	N/A
H3-K4-DC2	Dust Collector	N/A	1990	Mikropul	N/A	N/A
H3-DC1	Dust Collector	N/A	K6	N/A	N/A	N/A
H3-DC2	Dust Collector	N/A	K6	N/A	N/A	N/A
H3-DC3	Dust Collector	N/A	K6	N/A	N/A	N/A
Fuel Burning Equipment						
Bunker C boiler	Natural Gas Boiler	6.275 MMBtu/hr	N/A	N/A	N/A	N/A
D4-RM1-HTR	Natural Gas Heater	75 MMBtu/hr	N/A	N/A	N/A	N/A
D5-HTR	Natural Gas Heater	11.3 MMBtu/hr	K6	N/A	N/A	N/A
Emergency Generator	Diesel	13 MMBtu/hr	N/A	N/A	N/A	N/A
Direct fired heaters (2)	Natural Gas	2 MMBtu/hr	N/A	N/A	N/A	N/A
Heating boiler	Natural Gas Boiler	0.825 MMBtu/hr	N/A	N/A	N/A	N/A
Petroleum Storage Tanks/Vessels						
Used Oil	Above ground	800 gallons	N/A	N/A	N/A	N/A
Diesel	Above ground	50,000 gallons	pre-1980	N/A	N/A	N/A
Lube Tank (3)	Above ground	1,000 gallons	N/A	N/A	N/A	N/A
Gasoline	Underground	12,000 gallons	1986	N/A	N/A	N/A
On-specification Used Oil	Above ground	31,000 gallons	N/A	N/A	N/A	N/A

EQUIPMENT ID NUMBER	EQUIPMENT TYPE	MAX. CAPACITY	YEAR INSTALLED	MANU-FACTURER	MODEL	SERIAL NUMBER
On-specification Used Oil (2)	Above ground	28,700 gallons	N/A	N/A	N/A	N/A
Bunker C	Aboveground	50,000 bbl	1972	N/A	N/A	N/A
Insignificant Activity						
Radiant heaters (7)	Natural Gas	0.03 MMBtu/hr	N/A	N/A	N/A	N/A
Carpenter Shop Unit Heater	Natural Gas	0.1 MMBtu/hr	N/A	N/A	N/A	N/A
Office Furnaces (2)	Natural Gas	0.08 MMBtu/hr	N/A	N/A	N/A	N/A
Office Furnace	Natural Gas	0.05 MMBtu/hr	N/A	N/A	N/A	N/A
Office Furnace	Natural Gas	0.18 MMBtu/hr	N/A	N/A	N/A	N/A
Furnaces (3)	Natural Gas	0.04 MMBtu/hr	N/A	N/A	N/A	N/A
Furnaces (3)	Natural Gas	0.025 MMBtu/hr	N/A	N/A	N/A	N/A
Unit heater (3)	Natural Gas	0.25 MMBtu/hr	N/A	N/A	N/A	N/A
Unit heater (2)	Natural Gas	0.075 MMBtu/hr	N/A	N/A	N/A	N/A
Unit heater	Natural Gas	0.3 MMBtu/hr	N/A	N/A	N/A	N/A
Water heater	Natural Gas Boiler	0.04 MMBtu/hr	N/A	N/A	N/A	N/A
Water heater	Natural Gas Boiler	0.075 MMBtu/hr	N/A	N/A	N/A	N/A
Water heater	Natural Gas Boiler	0.046 MMBtu/hr	N/A	N/A	N/A	N/A

Appendix 2 to Attachment "E"
Other Test Method 28 (OTM 28) - Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources

DRY IMPINGER METHOD FOR DETERMINING CONDENSABLE PARTICULATE EMISSIONS FROM STATIONARY SOURCES

1. Scope and Application

1.1 Scope. The U.S. Environmental Protection Agency (U.S. EPA or "we") developed this method to describe the procedures that the stack tester ("you") must follow to measure condensable particulate matter (CPM) emissions from stationary sources. This method includes procedures for measuring both organic and inorganic CPM.

1.2 Applicability. You can use this method to measure CPM from stationary source emissions after filterable particulate matter has been removed. CPM is measured in the emissions after removal from the stack and after passing through a filter. You can use Method 17 to collect condensable and filterable particulate material from sources operating at stack temperatures and/or samples collected below 30°C (85°F) if the filter is treated as described in Section 8.5.4.4 and 11.2.1 of this method. You may use this method only for stationary source emission measurement.

1.3 Responsibility. You are responsible for obtaining the equipment and supplies you will need to use this method. You must also develop your own procedures for following this method and any additional procedures to ensure accurate sampling and analytical measurements.

1.4 Results. To obtain reliable results, you must have a thorough knowledge of the following test methods which are found in Appendix A-1 through A-3 and A-6 to Part 60, in Appendix M to Part 51 and in OTM-027:

(a) Method 1 - Sample and Velocity Traverses for Stationary Sources.

(b) Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube).

(c) Method 3 - Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight.

(d) Method 4 - Determination of Moisture Content in Stack Gases.

(e) Method 5 - Determination of Particulate Emissions from Stationary Sources.

(f) Method 17 – Determination of Particulate Matter Emissions from Stationary Sources

(g) Method 201A – Determination of PM_{10} Emissions (Constant Sampling Rate Procedure)

(h) OTM-027 - Determining PM_{10} AND $PM_{2.5}$ Emissions From Stationary Sources (Constant Sampling Rate Procedure)

1.5 Additional Methods. You will need additional test methods to measure filterable particulate matter. You may use this method to collect CPM in conjunction with Method 5 or 17 of

Appendix A-1 through A-3 and A-6 to Part 60, Method 201A of Appendix M to Part 51 or OTM 27 for filterable PM_{10} and $PM_{2.5}$. The sample train operation and front end recovery and analysis are conducted according to the filterable particulate method you choose. This method addresses the equipment, preparation, and analysis necessary to measure only CPM.

1.6 Limitations. You can use this method to measure emissions following a wet scrubber only when this method is combined with a filterable particulate method that operates at high enough temperature to cause water droplets sampled through the probe to become gaseous.

1.7 Conditions. You must maintain isokinetic sampling conditions to meet the requirements of the filterable particulate method used in conjunction with this method. You must sample at the required number of sampling points specified in Method 5, 17, 201A or OTM-027. Also, if you are using this method as an alternative to a required performance test method, you must receive approval from the appropriate authorities prior to conducting the test.

2.0 Summary of Method

2.1 Summary. The CPM is collected in dry impingers after filterable particulate material has been collected on filters maintained above 30°C (85°F) using Method 5, 17, or 201A. The

organic and aqueous fractions of the impingers and an out-of-stack CPM filter are then taken to dryness and weighed. The total of all fractions represents the CPM. Compared to the December 17, 1991 promulgated Method 202, this method removes water from the impingers and includes the addition of a condenser followed by a water dropout impinger immediately after the final in-stack or heated filter. This method also includes the addition of one modified Greenburg Smith impinger and a CPM filter following the water dropout impinger. Figure 1 of Section 18 presents the schematic of the sampling train configured with these changes.

2.1.1 Condensable Particulate Matter. CPM is collected in the water dropout impinger, the modified Greenburg Smith impinger, and the CPM filter of the sampling train as described in this method. The impinger contents are purged with nitrogen (N_2) immediately after sample collection to remove dissolved sulfur dioxide (SO_2) gases from the impinger. The CPM filter is extracted with water and methylene chloride. The impinger solution is then extracted with methylene chloride ($MeCl_2$). The organic and aqueous fractions are dried and the residues are weighed. The total of the aqueous and organic fractions represents the CPM.

2.1.2 Dry Impinger and Additional Filter. The potential

artifacts from SO_2 are reduced using a condenser and dropout impinger to separate CPM from reactive gases. No water is added to the impingers prior to the start of sampling. To improve the collection efficiency of CPM, an additional filter (the CPM filter) is placed between the second and third impinger.

3.0 Definitions

3.1 Primary PM (also known as direct PM) means particles that enter the atmosphere as a direct emission from a stack or an open source. Primary PM comprises two components: Filterable PM and condensable PM. These two PM components have no upper particle size limit.

3.2 Filterable PM means particles that are directly emitted by a source as a solid or liquid at stack or release conditions and captured on the filter of a stack test train.

3.3 Primary PM_{10} (also known as Direct PM_{10}, Total PM_{10}, PM_{10} or Filterable PM_{10} and Condensable PM individually) means particulate matter with an aerodynamic diameter equal to or less than 10 micrometers.

3.4 Primary $PM_{2.5}$ (also known as Direct $PM_{2.5}$, Total $PM_{2.5}$, $PM_{2.5}$ or Filterable $PM_{2.5}$ and Condensable PM individually) means solid particles emitted directly from an air emissions source or activity, or gaseous emissions or liquid droplets from an air emissions source or activity that condense to form particulate

matter at ambient temperatures. Direct $PM_{2.5}$ emissions include elemental carbon, directly emitted organic carbon, directly emitted sulfate, directly emitted nitrate, and other inorganic particles (including but not limited to crustal material, metals, and sea salt).

3.5 Condensable PM (CPM): means material that is vapor phase at stack conditions, but which condenses and/or reacts upon cooling and dilution in the ambient air to form solid or liquid PM immediately after discharge from the stack. Note that all Condensable PM is assumed to be in the $PM_{2.5}$ size fraction (Reference: Part 51, Subpart Z (51.1000)).

4.0 Interferences [Reserved]

5.0 Safety

Disclaimer: You may have to use hazardous materials, operations, and equipment while performing this method. We do not provide information on appropriate safety and health practices. You are responsible for determining the applicability of regulatory limitations and establishing appropriate safety and health practices. Handle materials and equipment properly.

6.0 Equipment and Supplies

The equipment used in the filterable particulate portion of the sampling train is described in Methods 5 and 17 of Appendix A-1 through A-3 and A-6 to Part 60, Method 201A in Appendix M to

Part 51 or OTM-027. The equipment used in the CPM portion of the train is described in this section.

6.1 Condensable Particulate Sampling Train Components. The sampling train for this method is consistent with the sampling train for collecting filterable particulate using Method 5, 17, 201A or OTM-027 with the following exceptions or additions:

6.1.1 Condenser and Impingers. You must add the following components to the filterable particulate sampling train: A Method 23 type condenser as described in Section 2.1.2 of Method 23 of Appendix A-8 to Part 60, followed by a dropout impinger or flask, followed by a modified Greenburg-Smith impinger with an open tube tip as described in Section 6.1.1.8 of Method 5.

6.1.2 CPM Filter Holder. The modified Greenburg-Smith impinger is followed by a filter holder that is either glass, stainless steel (316 or equivalent), or Teflon®-coated stainless steel. Commercial size filter holders are available depending on project requirements. Use a commercial filter holder capable of supporting 47 mm or greater diameter filters. Commercial size filter holders contain a Teflon® O-ring, stainless steel, ceramic or Teflon® filter support and a final Teflon® O-ring. At the exit of the CPM filter, install a Teflon®-coated or stainless steel encased thermocouple that is in contact with the gas

stream.

6.1.3 Long Stem Impinger Insert. You will need a long stem modified Greenburg Smith impinger insert for the dropout impinger to perform the nitrogen purge of the sampling train.

6.2 Sample Recovery Equipment.

6.2.1 Condensable Particulate Matter Recovery.

6.2.1.1 Nitrogen Purge Line. You must use inert tubing and fittings capable of delivering at least 20 liters/min of nitrogen gas to the impinger train from a standard gas cylinder (see Figure 2 of Section 18). You may use standard 0.6 cm (1/4-in.) tubing and compression fittings in conjunction with an adjustable pressure regulator and needle valve.

6.2.1.2 Rotameter. You must use a rotameter capable of measuring gas flow up to 20 L/min. The rotameter must be accurate to 5 percent of full scale.

6.2.1.3 Ultra-high Purity (UHP) Nitrogen Gas. Compressed ultra-pure nitrogen, regulator, and filter must be capable of providing at least 20 L/min purge gas for 1 hour through the sampling train.

6.3 Analysis. The following equipment is necessary for CPM sample recovery and analysis:

6.3.1 Separatory Funnel. Glass, 1 liter.

6.3.2 Weighing Tins. 50 mL.

6.3.3 Glass Beakers. 300 to 500 mL.

6.3.4 Drying Equipment. Hot plate or oven with temperature control.

6.3.5 Pipets. 5 mL.

6.3.6 Burette. Glass, 0 to 100 mL in 0.1 mL graduations.

6.3.7 Analytical Balance. Analytical balance capable of weighing 0.0001 g (0.1 milligrams). For extremely low emission sources, a balance capable of weighing 0.00001 g (0.01 milligrams) may be required.

6.3.8 pH Meter. A meter capable of determining the acidity of liquid within 0.1 pH units.

7.0 Reagents and Standards

7.1 Sample Collection. To collect a sample, you will need a Teflon® filter, crushed ice, and silica gel. You must also have water and nitrogen gas to purge the sampling train. You will find additional information on each of these items in the following summaries.

7.1.1 Filter. You must use a Teflon® membrane filter that does not have an organic binder. The filter must also have an efficiency of at least 99.95 percent (<0.05 percent penetration) on 0.5 micron particles. You may use test data from the supplier's quality control program to document filter efficiency.

If the source you are sampling has SO_2 or sulfur trioxide (SO_3) emissions, then you must use a filter that will not react with SO_2 or SO_3. Depending on your application and project data quality objectives (DQOs), filters are commercially available in 47mm and larger sizes.

7.1.2 Silica gel. Use an indicating-type silica gel of 6 to 16 mesh. We must approve other types of desiccants (equivalent or better) before you use them. Allow the silica gel to dry for 2 hours at 175°C (350°F) if it is being reused. You do not have to dry new silica gel.

7.1.3 Water. Use deionized distilled ultra-filtered water (to conform to ASTM D1193-06, Type 1 water) to recover material caught in the impinger, if required.

7.1.4 Crushed ice. Obtain from the best readily available source.

7.1.5 Nitrogen Gas. Use Ultra-High Purity (UHP) compressed nitrogen or equivalent to purge the sampling train. The Compressed nitrogen you use to purge the sampling train must contain no more than 1 ppm oxygen, 1 ppm total hydrocarbons as carbon, and 2 ppm moisture.

7.2 Sample Recovery and Analytical Reagents. You will need acetone, $MeCl_2$, anhydrous sodium sulfate, ammonia hydroxide (NH_4OH), and deionized water for the sample recovery and

analysis. Unless otherwise indicated, all reagents must conform to the specifications established by the Committee on Analytical Reagents of the American Chemical Society. If such specifications are not available, then use the best available grade. Find additional information on each of these items in the following paragraphs:

7.2.1 Acetone. Use acetone that is stored in a glass bottle. Do not use acetone from a metal container because it normally produces a high residue blank. You must use acetone with blank values < 1 ppm, by weight, residue.

7.2.2 Methylene Chloride, American Chemical Society (ACS) grade. You must use methylene chloride with a blank value < 1.5 ppm, by weight, residue.

7.2.3 Water. Use deionized distilled ultra-filtered water (to conform to ASTM D1193-06, Type 1) to recover material caught in the impinger.

7.2.4 Condensable Particulate Sample Desiccant. Use indicating-type anhydrous sodium sulfate to desiccate water and organic extract residue samples.

7.2.5 Ammonium Hydroxide. Use NIST traceable or equivalent (0.1 N) NH_4OH.

7.2.6 Standard Buffer Solutions. Use one buffer with a neutral pH and a second buffer solution with an acid pH.

8.0 Sample Collection, Preservation, Storage, and Transport

8.1 Qualifications. This is a complex test method. To obtain reliable results, you must be trained and experienced with in-stack filtration systems (such as, cyclones, impactors, and thimbles) and impinger and moisture train systems.

8.2 Preparations. You must clean glassware prior to field tests as described in Section 8.4, including baking glassware at 300°C for 6 hours prior. Cleaned baked glassware is used at the start of each new source category tested. Analyze reagent blanks (water, acetone, and methylene chloride) before field tests to verify low blank concentrations. Follow the pretest preparation instructions in Section 8.1 of Method 5.

8.3 Site Setup. You must follow the procedures required by filterable particulate sampling method setup run in conjunction with this method including:

(a) Determine the sampling site location and traverse points.

(b) Calculate probe/cyclone blockage.

(c) Verify the absence of cyclonic flow.

(d) Complete a preliminary velocity profile and select a nozzle(s).

8.3.1 Sampling Site Location and Traverse Point Determination. Follow the standard procedures in Method 1 of

Appendix A-1 to Part 60 to select the appropriate sampling site. Then you must do all of the following:

8.3.1.1 Sampling site. Choose a location that maximizes the distance from upstream and downstream flow disturbances.

8.3.1.2 Traverse points. The recommended maximum number of traverse points at any location can be found in Methods 5, 17, 201A or OTM 27, whichever is applicable to your test requirements. You must prevent the disturbance and capture of any solids accumulated on the inner wall surfaces by maintaining a 1 inch distance from the stack wall (½ inch for sampling locations less than 24 inches in diameter).

8.4 Sampling Train Preparation. A schematic of the sampling train used in this method is shown in Figure 1 of Section 18. All sampling train glassware must be cleaned prior to the test with soap and water, and rinsed using tap water, deionized water, acetone, and finally, $MeCl_2$. It is important to completely remove all silicone grease from areas that will be exposed to the $MeCl_2$ rinse during sample recovery. After cleaning, you must bake glassware at 300°C for 6 hours prior to each source type sampled. Prior to each sampling run the train glassware used to collect condensable particulate matter must be rinsed thoroughly with deionized, distilled ultra-filtered water that conforms to ASTM D1193-06, Type 1.

8.4.1 Condenser and Dropout Impinger. Add a Method 23 type condenser and a condensate dropout impinger without bubbler tube after the final in-stack or out-of-stack hot filter assembly. The Method 23 type stack gas condenser is described in Section 2.1.2 of Method 23. It must be capable of cooling the stack gas to less than 30°C (85°F).

8.4.2 Backup Impinger. The dropout impinger is followed by a modified Greenburg Smith impinger with no taper (see Figure 1 of Section 18). Place the dropout and other impingers in an insulated box with water at ≤ 30°C (≤ 85°F). At the start of the tests, the water dropout and backup impinger must be clean, without any water or reagent added.

8.4.3 CPM Filter. Place a filter holder with a filter meeting the requirements in Section 6.1.2 following the modified Greenburg-Smith impinger. The connection between the CPM filter and the moisture trap impinger includes a thermocouple fitting that provides a leak-free seal between the thermocouple and the stack gas. (Note: A thermocouple well is not sufficient for this purpose because the Teflon® or steel encased thermocouple must be in contact with the sample gas.)

8.4.4 Moisture Traps. You must use a modified Greenburg-Smith impinger containing 100 mL of water or alternative described in Method 5 followed by an impinger containing silica

gel to collect moisture that passes through the CPM filter. You must maintain the gas temperature below 20°C (68 °F) at the exit of the moisture traps.

8.4.5 Silica Gel Trap. Place 200 to 300 g of silica gel in each of several air-tight containers. Weigh each container, including silica gel, to the nearest 0.5 g, and record this weight on the filterable particulate data sheet. As an alternative, the silica gel need not be preweighed, but may be weighed directly in its impinger or sampling holder just prior to train assembly.

8.4.6 Leak-Check (Pretest). Use the procedures outlined in Method 5, 17, or 201A as appropriate to leak check the entire sampling system. Specifically, perform the following procedures:

8.4.6.1 Sampling Train. You must pretest the entire sampling train for leaks. The pretest leak-check must have a leak rate of not more than 0.02 actual cubic feet per minute (ACFM) or 4 percent of the average sample flow during the test run, whichever is less. Additionally, you must conduct the leak-check at a vacuum equal to or greater than the vacuum anticipated during the test run. Enter the leak-check results on the field test data sheet for the filterable particulate method. (Note: Conduct leak-checks during port changes only as allowed by the filterable particulate method used with this method.)

8.4.6.2 Pitot Tube Assembly. After you leak-check the sample train, perform a leak-check of the pitot tube assembly. Follow the procedures outlined in Section 8.4.1 of Method 5.

8.5 Sampling Train Operation. Operate the sampling train as described in the filterable particulate sampling method (i.e., Method 5, 17, 201A or OTM-027) with the following additions or exceptions:

8.5.1 CPM Filter Assembly. On the field data sheet for the filterable particulate method, record the CPM filter temperature readings at the beginning of each sample time increment and when sampling is halted. Maintain the CPM filter ≤30°C (≤85°F) during sample collection.

8.5.2 Leak-Check Probe/Sample Train Assembly (Post-Test). Conduct the leak rate check according to the filterable particulate sampling method used during sampling. If required, conduct the leak-check at a vacuum equal to or greater than the maximum vacuum achieved during the test run. If the leak rate of the sampling train exceeds 0.02 ACFM or 4 percent of the average sampling rate during the test run (whichever is less), then the run is invalid and you must repeat it.

8.5.3 Post-Test Nitrogen Purge. As soon as possible after the post-test leak-check, detach the probe, any cyclones, and in-stack or hot filters from the condenser and impinger train.

Leave the ice in the second impinger box to prevent removal of moisture during the purge. If necessary, add more ice during the purge to maintain the gas temperature measured at the exit of the silica gel impinger below 20°C (68°F).

8.5.3.1 If no water was collected before the CPM filter, then you may skip the remaining purge steps and proceed with sample recovery (see Section 8.5.4).

8.5.3.2 Replace the short stem impinger insert with a modified Greenberg Smith impinger insert. The impinger tip length must extend below the water level in the impinger catch. If insufficient water was collected, then you must add a measured amount of degassed deionized, distilled ultra-filtered ASTM D1193-06, Type 1 or equivalent) water until the impinger tip is at least 1 cm below the surface of the water. You must record the amount of water added to the dropout impinger (see Figure 1 of Section 18) to correct the moisture content of the effluent gas (see Figure 2 of Section 18). (Note: Prior to use, water must be degassed using a nitrogen purge bubbled through the water for at least 15 minutes to remove dissolved oxygen.)

8.5.3.3 With no flow of gas through the clean purge line and fittings, attach the line to a purged inline filter. Connect the filter outlet to the input of the impinger train (see Figure 2 of Section 18). To avoid over- or under-pressurizing

the impinger array, slowly commence the nitrogen gas flow through the line while simultaneously opening the meter box pump valve(s). Adjust the pump bypass and nitrogen delivery rates to obtain the following conditions: (1) 20 liters/min or ΔH@, and (2) a positive overflow rate through the rotameter of less than 2 L/min. Condition (2) guarantees that the nitrogen delivery system is operating at greater than ambient pressure and prevents the possibility of passing ambient air (rather than nitrogen) through the impingers. During the purge, continue operation of the condenser recirculation pump and heat or cool the water surrounding the first two impingers to maintain the gas temperature measured at the exit of the CPM filter below 30°C (85°F). Continue the purge under these conditions for 1 hour, checking the rotameter and ΔH value(s) periodically. After 1 hour, simultaneously turn off the delivery and pumping systems.

8.5.3.4 Weigh the liquid or measure the volume of the liquid collected in the dropout, impingers, and silica trap. Measure the liquid in the first impinger to within 1 mL using a clean graduated cylinder or by weighing it to within 0.5 g using a balance. Record the volume or weight of liquid present to be used to calculate the moisture content of the effluent gas in the field log notebook.

8.5.3.5 If a balance is available in the field, weight the

silica impinger to within 0.5 g. Note the color of the indicating silica gel in the last impinger to determine whether it has been completely spent, and make a notation of its condition in the field log book.

8.5.4 Sample Recovery.

8.5.4.1 Recovery of Filterable Particulate Matter. Recovery of filterable particulate matter involves the quantitative transfer of particles according to the filterable particulate sampling method (i.e., Method 5, 17, 201A or OTM-027).

8.5.4.2 CPM Container #1, Aqueous Liquid Impinger Contents. Quantitatively transfer liquid from the dropout and the impinger prior to the CPM filter into a clean sample bottle (glass or plastic). Rinse the probe extension, condenser, each impinger and the connecting glassware, and front half of the CPM filter housing twice with water. Recover the rinse water, and add it to the same sample bottle. Mark the liquid level on the bottle. CPM Container #1 holds the water soluble CPM captured in the impingers.

8.5.4.3 CPM Container #2, Organic Rinses. Follow the water rinses of the probe extension, condenser, each impinger and all of the connecting glassware and front half of the CPM filter with an acetone rinse, then repeat the entire procedure with two

rinses of $MeCl_2$ and save both solvents in a separate glass container identified as CPM Container #2. Mark the liquid level on the jar.

8.5.4.4 CPM Container #3, CPM filter Sample. Use tweezers and/or clean disposable surgical gloves to remove the filter from the CPM filter holder. Place the filter in the petri dish identified as CPM Container #3.

8.5.4.5 CPM Container #4, Cold Impinger Water. You must weight or measure the volume of the contents of CPM Container #4 either in the field or during sample analysis (see Section 11.2.3). If the water from the cold impinger has been weighed in the field, then it can be discarded. Otherwise, quantitatively transfer liquid from the cold impinger that follows the CPM filter into a clean sample bottle (glass or plastic). Mark the liquid level on the bottle. This container holds the remainder of the liquid water from the emission gases.

8.5.4.6 CPM Container #5, Silica Gel Absorbent. You must weigh the contents of CPM Container #5 in the field or during sample analysis (see Section 11.2.4). If the silica gel has been weighed in the field to measure water content, then it can be discarded. Otherwise, transfer the silica gel to its original container and seal. A funnel may make it easier to pour the silica gel without spilling. A rubber policeman may be used as

an aid in removing the silica gel from the impinger. It is not necessary to remove the small amount of dust particles that may adhere to the impinger wall and are difficult to remove. Since the gain in weight is to be used for moisture calculations, do not use any water or other liquids to transfer the silica gel.

8.5.4.7 CPM Container #6, Acetone Rinse Blank. Take 150 mL of the acetone directly from the wash bottle you used, and place it in CPM Container #6, labeled Acetone Rinse Blank (see Section 11.2.5 for analysis). Mark the liquid level on the bottle.

8.5.4.8 CPM Container #7, Water Rinse Blank. Take 150 mL of the water directly from the wash bottle you used, and place it in CPM Container #7, labeled Water Rinse Blank (see Section 11.2.6 for analysis). Mark the liquid level on the bottle.

8.5.4.9 CPM Container #8, Methylene Chloride Rinse Blank. Take 150 mL of the $MeCl_2$ directly from the wash bottle you used, and place it in CPM Container #8, labeled Methylene Chloride Rinse Blank (see Section 11.2.7 for analysis). Mark the liquid level on the bottle.

8.5.5 Transport procedures. Containers must remain in an upright position at all times during shipping. You do not have to ship the containers under dry or blue ice. However, samples must be maintained at or below 30˚C (85˚F) during shipping.

9.0 Quality Control

9.1 Daily Quality Checks. You must perform daily quality checks of field log books and data entries and calculations using data quality indicators from this method and your site-specific test plan. You must review and evaluate (1) recorded and transferred raw data, (2) calculations, and (3) documentation of testing procedures. You must initial or sign log book pages and data entry forms that were reviewed.

9.2 Calculation Verification. Verify the calculations by independent, manual checks. You must flag any suspect data and identify the nature of the problem and potential effect on data quality. After you complete the test, prepare a data summary and compile all the calculations and raw data sheets.

9.3 Conditions. You must document data and information on the process unit tested, the particulate control system used to control emissions, any non-particulate control system that may affect particulate emissions, the sampling train conditions, and weather conditions. Discontinue the test if the operating conditions may cause non-representative particulate emissions.

9.4 Health and Safety Plan. Develop a health and safety plan to ensure the safety of your employees who are on-site conducting the particulate emission test. Your plan must conform with all applicable Occupational Safety and Health Administration (OSHA), Mine Safety and Health Administration (MSHA), and

Department of Transportation (DOT) regulatory requirements. The procedures must also conform to the plant health and safety requirements.

9.5 Calibration Checks. Perform calibration check procedures on analytical balances each time they are used.

9.6 Glassware. Use class A volumetric glassware for titrations or calibrate your equipment against National Institute of Standards and Technology (NIST) traceable glassware.

9.7 Analytical Balance. Check the calibration of your analytical balance each day you weigh CPM samples. You must use NIST Class S weights at a mass approximately equal to the weight of the sample plus container you will weigh.

9.8 Reagent Blanks. You must run blanks of water, acetone, and methylene chloride used for field recovery and sample analysis. Analyze at least one sample (100 mL minimum) of each reagent that you plan to use for sample recovery and analysis before you begin testing. Running blanks before field use will verify low blank concentrations, thereby reducing the potential for a high field blank on test samples.

9.9 Field Reagent Blanks. You must run at least one field blank of water, acetone, and methylene chloride you use for field recovery. Running independent reagent field blanks will verify that low blank concentrations were maintained during field

solvent use and demonstrate that reagents have not been contaminated during field tests.

9.10 Field Train Blank. You must recover a minimum of one field train blank for each set of compliance tests at the facility. You must assemble the sampling train as it will be used for testing. Prior to the purge, you must add 100 mL of water to the first impinger. You must purge the assembled train as described in Sections 8.5.3.2. and 8.5.3.3. You must recover field train blank samples as described in Section 8.5.4. From the field sample weight, you will subtract the condensable particulate mass you determine with this blank train or 0.002 g (2.0 mg), whichever is less.

9.11 Audit Procedure. Concurrent with compliance sample analysis, and if available, analyze audit material to evaluate the technique of the analyst and the standards preparation. Use the same staff, analytical reagents, and analytical system for both compliance samples and the EPA audit sample. If this condition is met, auditing of subsequent compliance analyses for the same enforcement agency within 30 days is not required. An audit sample set may not be used to validate different sets of compliance samples under the jurisdiction of different enforcement agencies, unless prior arrangements are made with both enforcement agencies.

9.12 Audit Samples. As of the publication date of this test method, audit materials are not available. If audit materials become available, then audit samples will be supplied only to enforcement agencies for compliance tests. Audit samples can be requested by a State agency. Audit materials are requested online by authorized regulatory authorities at http://www.sscap.net/. Authorization can be obtained by contacting an EPA Emission Measurement Center QA Team Member listed on the EPA TTN Web site http://www.epa.gov/ttn/emc/email.html#qaqc. The request for the audit sample must be made at least 30 days prior to the scheduled compliance sample analysis.

9.13 Audit Results. Calculate the audit sample concentration according to the calculation procedure described in the audit instructions included with the audit sample. Fill in the audit sample concentration and the analyst's name on the audit response form included with the audit instructions. Send one copy to the EPA Regional Office or the appropriate enforcement agency.

10.0 Calibration and Standardization

Maintain a log of all condensable particulate sampling and analysis calibrations. Include copies of the relevant portions of the calibration and field logs in the final test report.

10.1 Thermocouple Calibration. You must calibrate the thermocouples using the procedures described in Section 10.1.4.1.2 of Method 2 of Appendix A-1 to Part 60. Calibrate each temperature sensor at a minimum of three points over the anticipated range of use against an NIST-traceable mercury-in-glass thermometer.

10.2 Ammonium Hydroxide. The 0.1 N NH_4OH used for titrations in this method is made as follows: Add 7 mL of concentrated (14.8 M) NH_4OH to 1 liter of water. Standardize against standardized 0.1 N H_2SO_4 and calculate the exact normality using a procedure parallel to that described in Section 5.5 of Method 6 of Appendix A-4 to 40 CFR part 60. Alternatively, purchase 0.1 N NH_4OH that has been standardized against a NIST reference material. Record the normality on the Condensable Particulate Matter Work Table (see Figure 3 of Section 18).

11.0 Analytical Procedures

11.1 Analytical data sheets. Record the filterable particulate field data on the appropriate (i.e., Method 5, 17, 201A, or OTM-027) analytical data sheets. Alternatively, data may be recorded electronically using software applications such as the Electronic Reporting Tool (ERT) http://www.epa.gov/ttn/chief/ert/ert_tool.html. Record the

condensable particulate data on the Condensable Particulate Matter Work Table (see Figure 3 of Section 18).

Measure the liquid in all containers either volumetrically to ± 1 mL or gravimetrically to ± 0.5 g. Confirm on the filterable particulate analytical data sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results.

11.2 Condensable Particulate Matter Analysis. See the flow chart in Figure 4 of Section 18 for the steps to process and combine fractions from the CPM train.

11.2.1 Container #3, CPM Filter Sample. Extract the filter recovered from the low temperature portion of the train and combine the extracts with the organic and inorganic fractions resulting from the aqueous impinger sample recovery. If the sample was collected by Method 17 because the stack temperature was below 30°C (85°F), then process the filter extracts as described in this section without combination with any other portion from the train.

11.2.1.1 Extract the water soluble (aqueous or inorganic) CPM from the CPM filter as described in this section. Fold the CPM filter in quarters and place it into a 50 mL extraction tube. Add sufficient deionized ultra-filtered water to cover the filter

(e.g., 10 mL of water). Place the extractor tube into a sonication bath and extract the water soluble material for a minimum of 2 minutes. Combine the aqueous extract with the contents of Container #1. Repeat this extraction step twice for a total of three extractions.

11.2.1.2 Extract the organic soluble CPM from the CPM filter as described in this section. Add sufficient methylene chloride to cover the filter (e.g., 10 mL of water). Place the extractor tube into a sonication bath and extract the organic soluble material for a minimum of 2 minutes. Combine the organic extract with the contents of Container #2. Repeat this extraction step twice for a total of three extractions.

11.2.2 CPM Container #1, Aqueous Liquid Impinger Contents. Analyze the water soluble CPM in Container 1 as described in this section. Place the contents of Container #1 into a separatory funnel. Add approximately 30 mL of $MeCl_2$ to the funnel, mix well, and drain off the lower organic phase. Repeat this procedure twice with 30 mL of $MeCl_2$ each time combining the organic phase from each extraction. Each time, leave a small amount of the organic/$MeCl_2$ phase in the separatory funnel, ensuring that no water is collected in the organic phase. This extraction should yield about 90 mL of organic extract.

11.2.2.1 CPM Container #2. Combine the organic extract

from Container #1 with the organic train rinse in Container 2.

11.2.2.2 Organic Fraction Weight Determination. Place the organic phase in a clean glass beaker. Evaporate the organic extract at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood to not less than 10 mL. Quantitatively transfer the beaker contents to a 50-mL preweighed tin and evaporate to dryness at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood. Following evaporation, desiccate the organic fraction for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh at intervals of at least 6 hours to a constant weight (i.e., ≤ 0.5 mg change from previous weighing) and report results to the nearest 0.1 mg on the filterable particulate analytical data sheet.

11.2.2.3 Inorganic Fraction Weight Determination. Transfer the aqueous fraction from the extraction to a clean 500-mL or smaller beaker. Evaporate to no less than 10 mL liquid on a hot plate or in the oven at 105°C and then allow to dry at room temperature (not to exceed 30°C (85°F). You must ensure that water and volatile acids have completely evaporated before neutralizing nonvolatile acids in the sample. Redissolve the residue in 100 mL of deionized distilled ultra-filtered water (ASTM D1193-06, Type 1 water or equivalent.

11.2.2.4 Use titration to neutralize acid in the sample and remove water of hydration. Calibrate the pH meter with the neutral and acid buffer solutions then titrate the sample with 0.1N NH_4OH to a pH of 7.0, as indicated by the pH meter. Record the volume of titrant used on the Condensable Particulate Matter Work Table (see Figure 3 of Section 18).

11.2.2.5 Using a hot plate or an oven at 105°C, evaporate the aqueous phase to approximately 10 mL. Quantitatively transfer the beaker contents to a 50-mL preweighed tin and evaporate to dryness at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood. Following evaporation, desiccate the residue for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh at intervals of at least 6 hours to a constant weight (i.e., ≤ 0.5 mg change from previous weighing) and report results to the nearest 0.1 mg on the filterable particulate analytical data sheet.

11.2.2.6 Calculate the correction factor to subtract the $NH4^+$ retained in the sample using Equation 1 in Section 12.

11.2.3 CPM Container #4, Cold Impinger Water. If the amount of water has not been determined in the field, note the level of liquid in the container, and confirm on the filterable particulate analytical data sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred,

either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Measure the liquid in Container #4 either volumetrically to ± 1 mL or gravimetrically to ± 0.5 g and record the volume or weight on the filterable particulate analytical data sheet.

11.2.4 CPM Container #5, Silica Gel Absorbent. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. This step may be conducted in the field. Record the weight on the filterable particulate analytical data sheet.

11.2.5 Container #6, Acetone Field Rinse Blank. Use 100 mL of acetone from the blank container for this analysis. If insufficient liquid is available or if the acetone has been lost due to container breakage, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Transfer 100 mL of the acetone to a clean 250-mL beaker. Evaporate the acetone at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood to approximately 10 mL. Quantitatively transfer the beaker contents to a 50-mL preweighed tin and evaporate to dryness at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood. Following evaporation, desiccate the residue for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh at

intervals of at least 6 hours to a constant weight (i.e., ≤ 0.5 mg change from previous weighing) and report results to the nearest 0.1 mg on the filterable particulate analytical data sheet.

11.2.6 Water Rinse Field Blank, Container #7. Use 100 mL of the water from the blank container for this analysis. If insufficient liquid is available or if the water has been lost due to container breakage, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Transfer the water to a clean 250-mL beaker and evaporate to approximately 10 mL liquid in the oven at 105°C. Quantitatively transfer the beaker contents to a clean preweighed 50-mL tin and evaporate to dryness at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood. Following evaporation, desiccate the residue for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh at intervals of at least 6 hours to a constant weight (i.e., ≤ 0.5 mg change from previous weighing) and report results to the nearest 0.1 mg on the filterable particulate analytical data sheet.

11.2.7 Methylene Chloride Field Reagent Blank, Container #8. Use 100 mL of $MeCl_2$ from the blank container for this analysis. Transfer 100 mL of the $MeCl_2$ to a clean 250-mL beaker. Evaporate the methylene chloride at room temperature

(not to exceed 30°C (85°F)) and pressure in a laboratory hood to approximately 10 mL. Quantitatively transfer the beaker contents to a 50-mL preweighed tin and evaporate to dryness at room temperature (not to exceed 30°C (85°F)) and pressure in a laboratory hood. Following evaporation, desiccate the residue for 24 hours in a desiccator containing anhydrous calcium sulfate. Weigh at intervals of at least 6 hours to a constant weight (i.e., ≤ 0.5 mg change from previous weighing) and report results to the nearest 0.1 mg on the filterable particulate analytical data sheet.

12.0 Calculations and Data Analysis

12.1 Nomenclature. Report results in International System of Units (SI units) unless the regulatory authority for compliance testing specifies English units. The following nomenclature is used.

18.03 = mg/milliequivalents for ammonium ion.

ACFM = Actual cubic feet per minute.

C_{cpm} = Concentration of the condensable particulate matter in the stack gas, dry basis, corrected to standard conditions, milligrams/dry standard cubic foot.

m_c = Mass of the NH_4^+ added to sample to form ammonium sulfate, mg.

m_{cpm} = Mass of the total condensable particulate matter,

mg.

m_{fb} = Mass of field train total CPM blank, mg

m_i = Mass of inorganic CPM matter, mg.

m_{ib} = Mass of field train inorganic CPM blank, mg.

m_o = Mass of organic CPM, mg.

m_{ob} = Mass of organic field train blank, mg.

m_r = Mass of dried sample from inorganic fraction, mg.

N = Normality of ammonium hydroxide titrant.

$V_{m(std)}$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions, dry standard cubic meter (dscm) or dry standard cubic foot (dscf) as defined in Equation 5-1 of Method 5.

V_t = Volume of NH_4OH titrant, mL.

V_p = Volume of water added during train purge.

12.2 Calculations. Use the following equations to complete the calculations required in this test method.

12.2.1 Mass of ammonia correction. Correction for ammonia added during titration of 100 mL aqueous CPM sample. This calculation assumes no waters of hydration.

$$m_c = 18.03 \times V_t \times N \qquad \text{Equation 1}$$

12.2.2 Mass of the Field Blank(mg). Per Section 9.9, the mass of the field blank, m_{fb}, shall not exceed 2.0 mg.

$$m_{fb} = m_{ib} + m_{ob} \qquad \text{Equation 2}$$

12.2.3 Mass of Inorganic CPM (mg).

$$m_i = m_r - m_c \qquad \text{Equation 3}$$

12.2.4 Total Mass of CPM (mg).

$$m_{cpm} = m_i + m_o - m_{fb} \qquad \text{Equation 4}$$

12.2.5 Concentration of CPM (mg/dscf).

$$C_{cpm} = \frac{m_{cpm}}{V_{m(std)}} \qquad \text{Equation 5}$$

12.3 Emission Test Report. Include the following list of conventional elements in the emissions test report.

(a) Emission test description including any deviations from this protocol.

(b) Summary data tables on a run-by-run basis that include the condensable particulate mass.

(c) Flowchart of the process or processes tested.

(d) Sketch of the sampling location.

(e) Preliminary traverse data sheets including cyclonic flow checks.

(f) Raw field data sheets and copies of field log pages.

(g) Laboratory analytical sheets and case narratives.

(h) Pretest and post test reagent blank results.

(i) Sample calculations.

(j) Pretest and post-test calibration data.

(k) Chain of custody forms.

(l) Documentation of process and air pollution control system data.

13.0 Method Performance [Reserved]

14.0 Pollution Prevention [Reserved]

15.0 Waste Management

Solvent and water are evaporated in a laboratory hood during analysis. No liquid waste is generated in the performance of this method. Organic solvents used to clean sampling equipment should be managed as RCRA organic waste.

16.0 Alternative Procedures [Reserved]

17.0 References

1. U.S. Environmental Protection Agency, Federal Reference Methods 1 through 5 and Method 17, 40 CFR 60, Appendix A-1 through A-3 and A-6.

2. Richards, J., T. Holder, and D. Goshaw. "Optimized Method 202 Sampling Train to Minimize the Biases Associated with Method 202 Measurement of Condensable Particulate Matter Emissions." Paper presented at Air & Waste Management Association Hazardous Waste Combustion Specialty Conference. St. Louis, Missouri. November 2-3, 2005.

3. DeWees, W.D., S.C. Steinsberger, G.M. Plummer, L.T. Lay, G.D. McAlister, and R.T. Shigehara. "Laboratory and

Field Evaluation of the EPA Method 5 Impinger Catch for Measuring Condensable Matter from Stationary Sources." Paper presented at the 1989 EPA/AWMA International Symposium on Measurement of Toxic and Related Air Pollutants. Raleigh, North Carolina. May 1-5, 1989.

4. DeWees, W.D. and K.C. Steinsberger. "Method Development and Evaluation of Draft Protocol for Measurement of Condensable Particulate Emissions." Draft Report. November 17, 1989.

5. Texas Air Control Board, Laboratory Division. "Determination of Particulate in Stack Gases Containing Sulfuric Acid and/or Sulfur Dioxide." Laboratory Methods for Determination of Air Pollutants. Modified December 3, 1976.

6. Nothstein, Greg. Masters Thesis. University of Washington. Department of Environmental Health. Seattle, Washington.

7. "Particulate Source Test Procedures Adopted by Puget Sound Air Pollution Control Agency Board of Directors." Puget Sound Air Pollution Control Agency, Engineering Division. Seattle, Washington. August 11, 1983.

8. Commonwealth of Pennsylvania, Department of Environmental Resources. Chapter 139, Sampling and Testing (Title 25, Rules and Regulations, Part I, Department of Environmental Resources, Subpart C, Protection of Natural

Resources, Article III, Air Resources). January 8, 1960.

9. Wisconsin Department of Natural Resources. Air Management Operations Handbook, Revision 3. January 11, 1988.

10. U.S. Environmental Protection Agency, "Laboratory Evaluation of Method 202 to Determine Fate of SO2 in Impinger Water," EPA Contract No. 68-D-02-061, Work Assignment 3-14, September 30, 2005.

11. [Placeholder: ERG report on evaluation of improved dry impinger modifications to Method 202.]

12. [Placeholder: EPRI report on evaluation of improved dry impinger modifications to Method 202 at conditions representative of electric power generating facilities.]

18.0 Tables, Diagrams, Flowcharts, and Validation Data

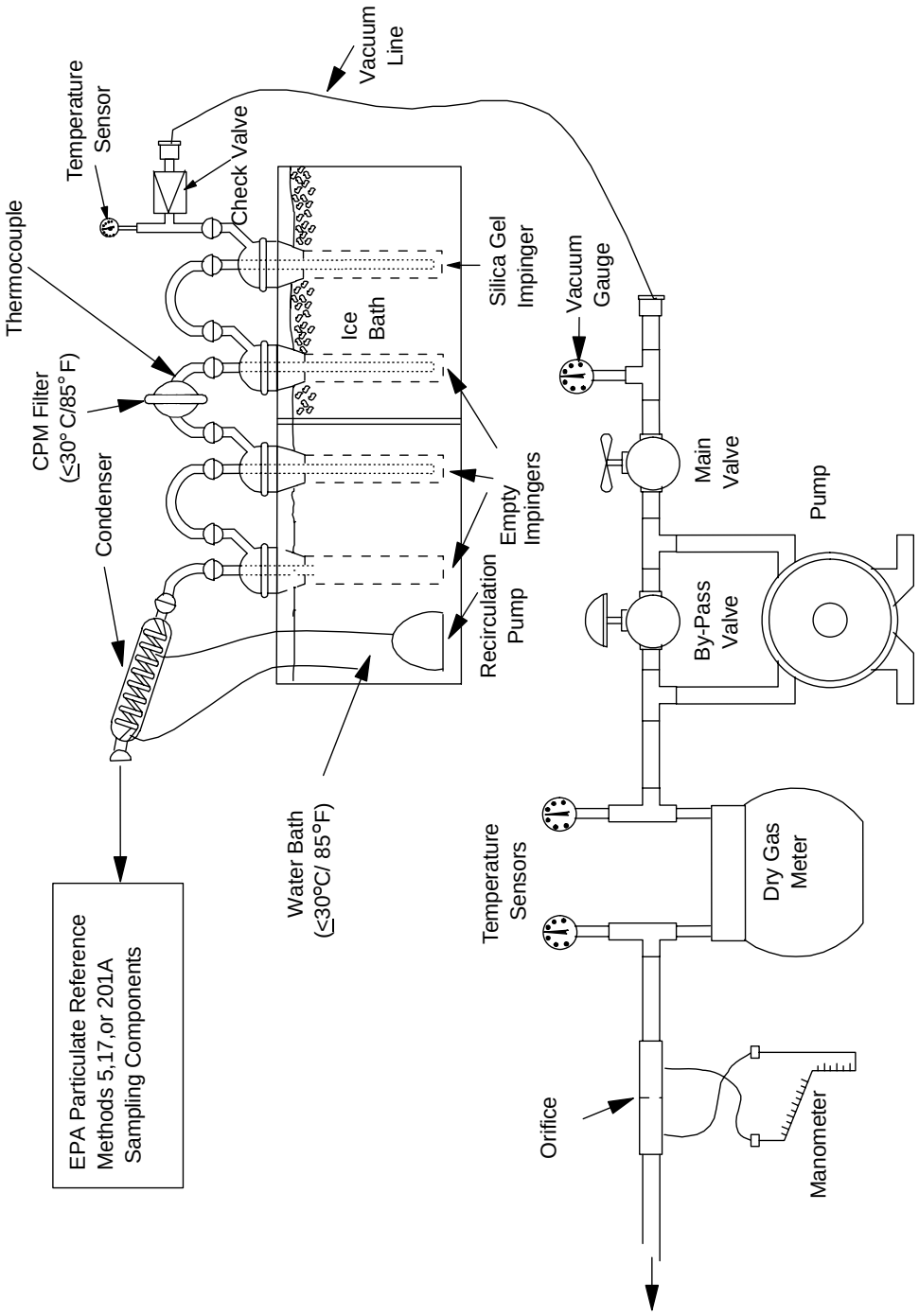

Figure 1. Schematic of Condensable Particulate Sampling Train

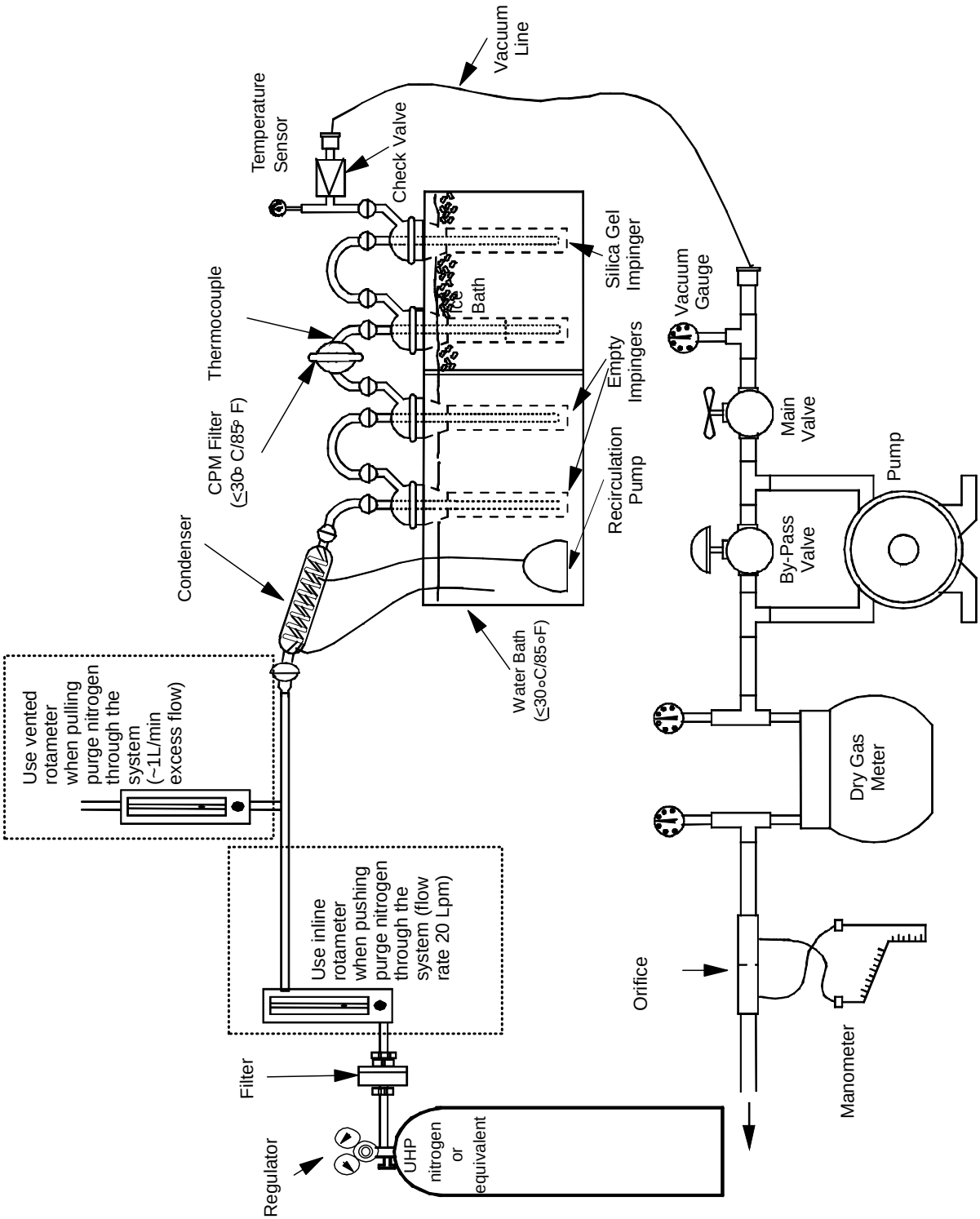

Figure 2. Nitrogen Purge Train Configuration

Field Train Blank Condensable Particulate Calculations	
Plant	
Date	
Blank No.	
CPM Filter No.	
Water volume added to purge train (V_p)	ml
Field Reagent Blank Mass	
Water (Section 11.2.6)	mg
Acetone (Section 11.2.5)	mg
Methylene Chloride (Section 11.2.7)	mg
Field Train Reagent Blank Mass	
Mass of Organic CPM (m_{ob}) (Section 11.2.2.2)	mg
Mass of Inorganic CPM (m_{ib}) (Equation 3)	mg
Mass of the Field Train Blank (not to exceed 2.0 mg) (Equation 2)	mg

Figure 3. Field Train Blank Condensable Particulate Calculations

Other Field Train Sample Condensable Particulate Data	
Plant	
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train [max 50 mL] (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train [max 50 mL] (V_p)	ml
Date	
Run No.	
CPM Filter No.	
Water volume added to purge train [max 50 mL] (V_p)	ml

Figure 4. Other Field Train Sample Condensable Particulate Data

Calculations for Recovery of Condensable Particulate Matter (CPM)

Plant _____

Date _____

Run No._____

Sample Preparation - CPM Containers No. 1 and 2 (Section 11.1)

Was significant volume of water lost during transport? Yes or No	_____	
If Yes, measure the volume received.	_____	
Estimate the volume lost during transport.	_____	mL
Was significant volume of organic rinse lost during transport? Yes or No	_____	
If Yes, measure the volume received.	_____	
Estimate the volume lost during transport.	_____	mL

For Titration

Normality of NH_4OH (N) (Section 10.2)	_____	N
Volume of titrant (V_t) (Section 11.2.2.4)	_____	mL
Mass of NH_4 added (m_c) (Equation 1)	_____	mg

For CPM Blank Weights

Inorganic Train Field Blank Mass(m_{ib}) (Section 9.9)	_____	mg
Organic Train Field blank Mass (m_{ob}) (Section 9.9)	_____	mg
Mass of Train Field Blank (M_{fb}) (max. 2 mg) (Section 9.9, Equation 2)	_____	mg

For CPM Train Weights

Mass of Organic CPM (m_o) (Section 11.2.2.2)	_____	mg
Mass of Inorganic CPM (m_i) (Equation 3)	_____	mg
Total CPM Mass (m_{cpm}) (Equation 4)	_____	mg

Figure 5. Condensable Particulate Matter Work Table

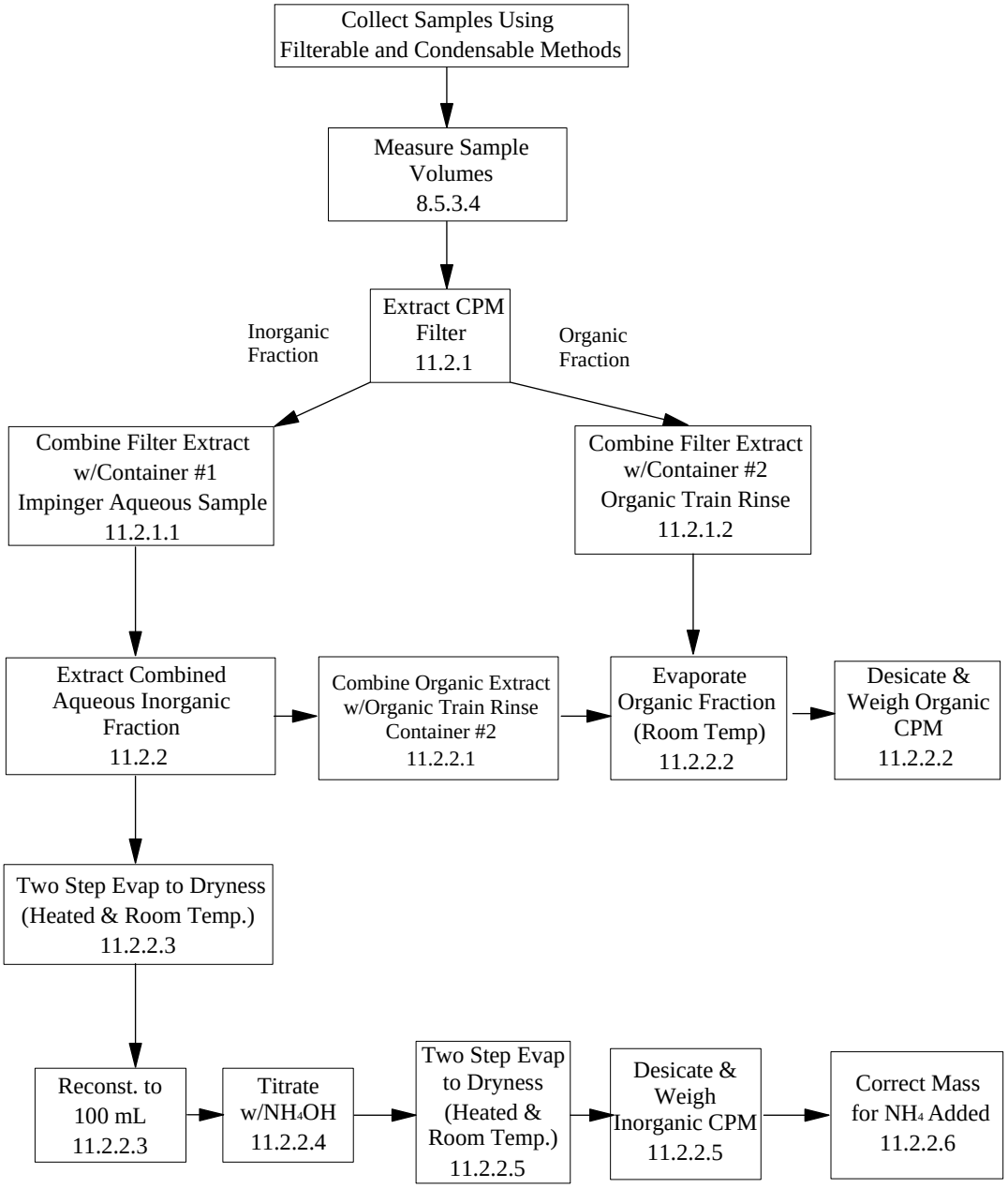

Figure 6. CPM Sample Processing Flow Chart