TECHNICAL REVIEW AND EVALUATION FOR
ARIZONA PORTLAND CEMENT COMPANY
AIR QUALITY PERMIT NO. 38592
(SIGNIFICANT REVISION TO OPERATING PERMIT NO. M190310P1-00)

I. INTRODUCTION

Arizona Portland Cement Company and other subsidiaries of California Portland Cement Company own and operate a limestone quarry, a Portland cement manufacturing plant, and a rock and stone aggregate plant in Rillito, Arizona.

Company Information

Facility Name:	Arizona Portland Cement Company
Facility Address:	11115 N. Casa Grande Highway Rillito, Pima County, Arizona 85654
Mailing Address:	P.O. Box 338 Rillito, AZ 85654

The Permittee was issued Permit Number M190310P1-00, a Class I operating permit, on October 7, 2003. The present application for a significant permit revision was received on December 14, 2005. The proposed significant revision, Permit Number 38592, will provide for the construction of the "Kiln 6 Project," a major modification of the existing major stationary source. The new conditions will be considered an alternate operating scenario and will be contained in Attachment "E" to the Operating Permit. The requirements in Attachment "E" will become applicable on the earlier of the first calendar day when the Kiln 6 production rate exceeds 6,480 tons of cement clinker, or on the 180th day following initial firing of fuel in Kiln 6.

The existing major source is located in an area that is classified as nonattainment with respect to particulate matter with aerodynamic diameter less than 10 microns ("PM-10") and is either classified attainment or unclassifiable with respect to all remaining criteria pollutants.

II. FACILITY DESCRIPTION

A. EXISTING FACILITY

The existing major stationary source includes a limestone quarry, a Portland cement manufacturing plant, and a rock and stone aggregate plant. The existing Portland cement plant includes four cement kilns and clinker coolers, with a total clinker production capacity of 264 tons per hour, and ancillary equipment for fuel receiving and handling, feed materials receiving and handling, clinker grinding, and Portland cement manufacturing and shipping.

The existing source has the potential to emit several regulated air pollutants at rates exceeding the major source thresholds at A.A.C. R18-2-101(64)(b)(i) and R18-2-401(9). Therefore, the facility is classified as a major source as defined in A.A.C. R18-2-101(64) and is a major stationary source for the purposes of A.A.C. R18-2-403 and -406.

B. PROPOSED MODIFICATION

The present significant permit revision application is for the construction of the Kiln 6 Project. This proposed project involves significant changes to the Portland cement manufacturing plant, including the following major items:

- A new pyroprocessing system featuring a dry process, preheater/precalciner kiln with in-line raw mill, tire-derived fuel firing system, clinker cooler, and air pollution control systems. The new pyroprocessing line will have a clinker production capacity of 300 tons per hour, approximately 14 percent more than the total capacity of the four existing kilns;
- Revisions to the rail unloading, handling, and storage facilities for coal and petroleum coke;
- New solid fuel grinding system;
- Expanded and upgraded facilities for raw materials storage and reclaim, milling, and homogenizing;
- Expanded and upgraded facilities for clinker storage and handling;
- Expanded and upgraded facilities for cement milling, storage, and handling; and
- A new Diesel-powered emergency generator.

The utilization of the quarry will increase as a result of the Kiln 6 Project, but no physical or operational changes will be made to the quarry equipment. The Kiln 6 Project will not have any effect on the rock and stone aggregate plant.

Additional detail regarding the proposed modification is provided in Section 2.0 of the December 2005 permit application.

III. EMISSIONS

The proposed Kiln 6 Project will result in a net increase in PM-10 emissions of 45.8 tons per year ("tpy"), in excess of the PM-10 significant level of 15 tpy as defined at A.A.C. R18-2-101(106)(a). Therefore, the proposed modification is a major modification with respect to PM-10 emissions pursuant to the Nonattainment New Source Review (NNSR) rule at A.A.C. R18-2-403(A).

The proposed Kiln 6 Project will result in a net increase in SO_2 emissions of 127.2 tpy, in excess of the SO_2 significant level of 40 tpy as defined at A.A.C. R18-2-101(106)(a). Therefore, the proposed modification is a major modification with respect to SO_2 emissions pursuant to the Prevention of Significant Deterioration (PSD) rule at A.A.C. R18-2-406(A). In addition, because the project will result in a significant increase in PM-10 emissions, the project is considered a major modification under the PSD rule with respect to PM-2.5 emissions.[1] Net emissions increases of all other regulated

[1] PM-2.5 is a criteria pollutant, and the proposed project site is in an area designated as unclassifiable/attainment

air pollutants are less than the corresponding significant levels.

The emissions increases from the proposed Kiln 6 Project and the new facility-wide potential to emit are summarized in Table 1. Detailed documentation of the emissions calculations and net emissions increase determinations is provided in the December 2005 permit application and in the April 2007 supplement to the permit application.

TABLE 1: EMISSIONS CHANGES FROM KILN 6 PROJECT

Pollutant	Net Emissions Increase or Decrease	Potential to Emit
PM-10	45.8	482.3
SO_2	127.2	186.4
NO_X	-1,674.1	2,302.4
CO	-762.0	3,783.7
VOC	35.4	42.6
Fluorides	0.4	0.95
PM	-2.8	936.9
Lead	0.0	0.03
Sulfuric Acid Mist	0.9	2.3

IV. APPLICABLE REGULATIONS

A. APPLICABILITY SUMMARY

Table 2 summarizes the findings of the Department with respect to the applicability or non-applicability of specific regulations to emission units proposed to be constructed or modified as part of the Kiln 6 Project.

TABLE 2: REGULATORY ANALYSIS

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with respect to the PM-2.5 National Ambient Air Quality Standard, so PM-2.5 is a regulated pollutant under the PSD rule. Pending further rulemaking, the Department and the U.S. EPA are implementing applicable new source review requirements for PM-10 emissions as a surrogate for PM-2.5 emissions.

Unit ID	Regulation(s)	Applicable? (Y/N)	Verification
Entire Project	PSD A.A.C R18-2-406	Y	Project will result in significant net emissions increases of SO_2 and PM-10 (as surrogate for PM-2.5). Project will not result in significant net emissions increases of other PSD regulated pollutants. See Table 1.
	NNSR A.A.C R18-2-403	Y	Project will result in significant net emissions increase of PM-10.
Kiln 6	New Source Performance Standards (NSPS) A.A.C R18-2-901	N	Unit is subject to 40 CFR 63 subpart LLL and is exempt from NSPS pursuant to 40 CFR § 63.1356(a).
	National Emission Standards for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing A.A.C. R18-2-1101(B)(50)	Y	The Permittee has indicated that the facility is a major source of Hazardous Air Pollutant (HAP) emissions and that Kiln 6 and the raw mill will comprise an in-line kiln/raw mill under 40 CFR § 63.1341. The facility is subject to applicable emission standards for new inline kiln/raw mills at major sources.
	Compliance Assurance Monitoring 40 CFR 64	Y	The kiln is subject to PM-10 emission limits, uses a control device to comply with those limits, and has the uncontrolled potential to emit PM-10 in amounts greater than 100 tons per year.
Raw Mill	NESHAP for Portland Cement Manufacturing A.A.C. R18-2-1101(B)(50)	Y	The Permittee has indicated that Kiln 6 and the raw mill will comprise an in-line kiln/raw mill under 40 CFR § 63.1341. Accordingly, the raw mill is prohibited from operating independently of the kiln and is not subject to the separate standards for raw mills and raw material dryers.

Unit ID	Regulation(s)	Applicable? (Y/N)	Verification
Clinker Cooler	NESHAP for Portland Cement Manufacturing A.A.C. R18-2-1101(B)(50)	Y	Facility meets the definition of a clinker cooler under 40 CFR § 63.1341.
	Compliance Assurance Monitoring 40 CFR 64	Y	The kiln is subject to PM-10 emission limits, uses a control device to comply with those limits, and has the uncontrolled potential to emit PM-10 in amounts greater than 100 tons per year.
Finish Mills, Raw Material and Clinker Storage and Handling, Bulk Unloading and Loading, and Bagging Systems	NESHAP for Portland Cement Manufacturing A.A.C. R18-2-1101(B)(50)	Y	Several facilities within the cement plant meet the affected source definitions under 40 CFR §§ 63.1340 and 63.1341.
Coal Preparation Plant	New Source Performance Standards (NSPS) for Coal Preparation Plants A.A.C R18-2-901(32)	Y	The Permittee has indicated that both coal mills and several coal conveying systems will be modified, constructed, or reconstructed. Coal mills use heated air to dry the coal and are considered thermal dryers under 40 CFR § 60.251.
Quarry and Limestone Processing	NSPS for Nonmetallic Mineral Processing Plants A.A.C R18-2-901(66)	N	No new, modified, or reconstructed limestone crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, or enclosed truck or railcar loading stations.
	A.A.C R18-2-702(B)(1)	Y	Equipment is subject to the generally applicable opacity emission standard because it is not subject to any other opacity standard.
	P.C.C. § 17.16.370.B.1	Y	Limestone processing equipment includes rock crushers, screens, conveyors and conveyor transfer points, stackers, reclaimers, and rock storage piles.

Unit ID	Regulation(s)	Applicable? (Y/N)	Verification
Emergency Generator	NSPS for Stationary Compression Ignition Internal Combustion Engines 40 CFR 60 subpart IIII	Y	Unit is an emergency engine and an affected facility and must meet emission specifications for CO, PM, and total NO_X plus nonmethane hydrocarbons.
	NESHAP for Stationary Reciprocating Internal Combustion Engines 40 CFR 63 subpart ZZZZ	Y	Engine meets the applicability criteria but is subject only to recordkeeping requirements because it is an emergency engine.

B. PSD APPLICABILITY

As provided by A.A.C. R18-2-306.01, the Permittee has voluntarily proposed several emission limits and operational requirements that have the effect of constraining the emissions increases from the Kiln 6 project. As a result, the project will not cause significant emissions increases and will not be subject to applicable requirements under the PSD program with respect to emissions of NO_X, PM, CO, or VOC. The Permittee's PSD applicability analysis for these pollutants is presented in Section 6.0 of the December 2005 Class I permit application. These "synthetic minor" permit terms include the following:

- The existing Kilns 1-4, associated Clinker Coolers, and numerous other emissions units are required to shut down concurrently with the Kiln 6 project. These emissions units are currently authorized to operate under Sections I through VIII of Attachment "B" of the Class I Permit Number M190310P1-00. The shutdown requirements are effected in the permit by superseding those sections; only the emissions units that are authorized to continue to operate are carried forward into the new Attachment "E."
- The production of cement clinker in Kiln 6 is limited to 2.3 million tons per year.
- The Kiln 6 Stack will be limited to emission rates of 28.03 lbs of PM-10 per hour; 2,245.5 tons of NO_X per year; 3,680 tons of CO per year; and 44.25 tons of VOC per year. [2]
- All baghouses and dust collectors other than the Kiln 6 baghouse will be limited to a PM-10 emission rate of 0.005 grains per dry standard cubic foot and to corresponding limits on mass emission rate.
- The operations at the quarry, including the number of blasts, the use of explosives, and the amount of limestone quarried, are subject to enforceable limits.
- The Permittee is required to implement an improved dust control plan, sufficient to

[2] These mass emission limits are enforceable only in terms of mass emission rate, regardless of clinker production rate. For reference purposes, the Department notes that, assuming constant operation at the allowable clinker production rate of 2.3 million tons per year, these emission rates are equivalent to 0.11 lb of PM-10, 1.95 lbs of NO_X, 3.2 lbs of CO, and 0.04 lb of VOC per ton of clinker produced. At lower clinker production rates, the allowable emissions per ton of clinker are higher.

ensure a minimum 85 percent control efficiency for PM and PM-10 emissions from unpaved roads.

V. CONTROL TECHNOLOGY DETERMINATIONS

A. Best Available Control Technology (BACT) for SO_2 Emissions

As noted in Section III, the Kiln 6 project is a major modification subject to PSD review with respect to SO_2 emissions increases. Pursuant to A.A.C. R18-2-406(A)(2), for a major modification, BACT is required for "each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit." This includes the new Kiln 6 inline kiln/raw mill and the new emergency generator.

1. SO_2 BACT Analysis for Kiln 6 Inline Kiln/Raw Mill

The Permittee submitted an SO_2 BACT analysis for Kiln 6 in its April 2007 supplement to the Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that BACT is an SO_2 emission limit of 0.16 lb per ton of clinker, based on a 30-day rolling average. This BACT determination is based on the following key points:

- The SO_2 emissions are primarily dependent on the sulfur content of the feed materials and on the inherent SO_2 removal in the raw mill.
- SO_2 emissions from Kiln 6 will be higher than those from the existing Kiln 4 because a smaller fraction of the exhaust gas from the kiln and preheater will be routed through the raw mill.
- The raw mill does not operate continuously.
- The continuously achievable SO_2 emission limit, based on feed material sulfur content and SO_2 removal in the raw mill, is 0.16 lb per ton of clinker, as determined on a 30-day rolling average.
- Additional SO_2 control could be achieved with a flue gas desulfurization system, but the SO_2 emission reductions achievable with such technology are outweighed by the adverse environmental, energy, and economic impacts.

2. SO_2 BACT Analysis for Emergency Generator

The Permittee submitted an SO_2 BACT analysis for the Diesel-powered emergency generator internal combustion engine in its April 2007 supplement to the Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that BACT is a fuel specification requiring the use of fuel meeting the requirements of 40 CFR § 80.510(b), including a sulfur limit of 15 parts per million by weight.

B. Lowest Achievable Emission Rate (LAER) for PM-10 Emissions

As noted in Section III, the Kiln 6 project is a major modification subject to NNSR with respect to PM-10 emissions increases. Pursuant to A.A.C. R18-2-403(A)(1), LAER is required for each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit. This includes the new Kiln 6 inline kiln/raw mill; numerous dust collectors serving the limestone processing, coal preparation, and cement plant operations; fugitive emission sources associated with materials handling; and the new emergency generator.

1. PM-10 LAER Analysis for Kiln 6 Inline Kiln/Raw Mill

The Permittee submitted a PM-10 LAER analysis for Kiln 6 in its December 2005 Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that LAER is a PM-10 emission limit of 0.008 grain per dry standard foot of exhaust gas. This emission rate is more stringent than any emission limitation achieved in practice or contained in a State Implementation Plan for any similar source.

2. PM-10 LAER Analysis for Clinker Cooler

The Permittee submitted a PM-10 LAER analysis for the new Clinker Cooler in its December 2005 Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that LAER is a PM-10 emission limit of 0.005 grain per dry standard foot of exhaust gas. This emission rate is more stringent than any emission limitation achieved in practice or contained in a State Implementation Plan for any similar source.

Of particular note with regard to the Clinker Cooler LAER analysis is the Permittee's evaluation of ventless Clinker Cooler technology as documented in the April 2007 supplement to the Class I permit application. The Department requested that the Permittee perform this evaluation pursuant to a comment from U.S. EPA during its review of the Kiln 6 permit application. The Permittee concluded, and the Department concurs, that the emissions limitations achievable with this technology do not represent LAER. This conclusion is based primarily on the fact that the California facility using ventless clinker cooler technology does not achieve more stringent emission limitations than that proposed by the Permittee. The filterable PM emission limit for that facility's combined exhaust, through which both the kiln and the clinker cooler are exhausted, is equal to approximately 0.25 lb per ton of clinker produced. The limits for the kiln and clinker cooler being installed as part of the proposed Kiln 6 project are equal to approximately 0.12 lb per ton of clinker produced, including both filterable and condensible PM-10. In addition, the ventless clinker cooler system is not technically feasible for the proposed Kiln 6 without significantly redefining the design of the process.

3. PM-10 LAER Analysis for Materials Handling Dust Collectors

The Permittee submitted a PM-10 LAER analysis for the new and modified non-fugitive materials handling sources in its December 2005 Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that LAER for each of these units is a PM-10 emission limit of 0.005 grain per dry standard foot of exhaust gas. This emission rate is more stringent than any emission limitation achieved in practice or contained in a State Implementation Plan for any similar sources.

4. PM-10 LAER Analysis for Materials Handling Fugitive Dust

The Permittee submitted a PM-10 LAER analysis for the new and modified equipment for handling of solid fuels that will emit fugitive dust in an August 29, 2007, supplement to its Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that LAER for these activities is the use of water sprays to keep the material sufficiently moist. The Department is not aware of any more stringent emission limitation achieved in practice or contained in a State Implementation Plan for any similar sources.

5. PM-10 LAER Analysis for Emergency Generator

The Permittee submitted a PM-10 LAER analysis for the Diesel-powered emergency generator internal combustion engine in its April 2007 supplement to the Class I permit application. The Department concurs with this analysis, including the Permittee's conclusion that LAER is a PM-10 emission limit of 0.20 grams per kilowatt-hour, determined in accordance with the certification requirements at 40 CFR § 60.4202.

VI. EMISSIONS OFFSET REQUIREMENTS

As noted in Section III, the Kiln 6 project is a major modification subject to NNSR with respect to PM-10 emissions increases. Pursuant to A.A.C. R18-2-403(A)(3) and R18-2-404, PM-10 emission reductions meeting certain criteria are required to be obtained as a condition of the Class I permit. As described more fully in the December 2005 Class I permit application and the April 2007 supplement to that application, the PM-10 emissions increases from the Kiln 6 project are 294.3 tons per year. The emissions offset and net air quality benefit requirements are met using emission reductions totaling 298.9 tons per year, determined as follows:

- 249.2 tons per year from emissions decreases occurring at the Arizona Portland Cement plan as a result of the Kiln project, primarily involving shutdown of existing equipment; and
- 49.7 tons per year from emissions decreases achieved by Arizona Portland Cement Company by installing gates to preclude public vehicle access to a segment of the unpaved road crossing the facility's property.

VII. ALTERNATIVES ANALYSIS

As noted in Section III, the Kiln 6 project is a major modification subject to NNSR with respect to PM-10 emissions increases. Pursuant to A.A.C. R18-2-403(B), the Permittee performed an analysis of alternative sites, sizes, production processes, and environmental control techniques for the proposed Kiln 6 project. This analysis is presented in Section 6.0 of the April 2007 supplement to the Class I permit application. The Department has reviewed this analysis and has determined that the benefits of the project significantly outweigh the environmental and social costs imposed as a result of its plant's modification at its existing location. Of particular importance in the Department's determination are the following key points:

- The proposed modification of the existing plant will result in substantial reductions in NO_X and CO emissions. If the proposed Kiln 6 were sized differently or located at a different site, these emission reductions at the Rillito site would likely not be realized.
- The proposed Kiln 6 inline kiln/raw mill will use state-of-the-art technology for Portland cement production, and no known alternative production process would have less environmental impact.

VIII. STATEWIDE COMPLIANCE CERTIFICATION

As noted in Section III, the Kiln 6 project is a major modification subject to NNSR with respect to PM-10 emissions increases. Pursuant to A.A.C. R18-2-403(A)(2), the Permittee is required to demonstrate that that all existing major sources owned or operated by the Permittee, or any entity controlling, controlled by, or under common control with the Permittee, in Arizona are in compliance with, or on a schedule of compliance for, all conditions contained in permits of each of the sources and all other applicable emission limitations and standards under the Act and under A.A.C. title 18, chapter 2. Section 4.3 of the April 2007 supplement to the Class I permit application stated that the Rillito facility is the only existing major source in Arizona owned or operated by the Permittee, or any entity controlling, controlled by, or under common control with the Permittee. APCC certified that it is currently in compliance with all applicable requirements as identified in its Title V permit. In 2003, EPA issued a Notice of Violation (NOV) to the Permittee for violations of applicable state implementation plan requirements. The NOV has not yet been closed. A schedule of compliance is not required in this significant revision to Operating Permit No. M190310P1-00 under A.A.C. R18-2-403(A)(2) to address any issues in the NOV.

IX. MONITORING AND RECORDKEEPING REQUIREMENTS

A. KILN 6 INLINE KILN/RAW MILL

1. Portland Cement NESHAP

As noted in Table 2, the inline kiln/raw mill is an affected source under the NESHAP for Portland cement plants, subpart LLL of 40 CFR part 63. This rule, as all NESHAP regulations promulgated after 1990, includes monitoring and

recordkeeping requirements that satisfy the enhanced monitoring requirements of the 1990 Clean Air Act Amendments. The NESHAP monitoring and recordkeeping requirements included in the permit, as required by A.A.C. R18-2-306(A)(3) and R18-2-306(A)(4), include the following:

- Continuous opacity monitoring system, operated in accordance with Performance Specification 1 in appendix B to 40 CFR part 60. This system is used to determine continuous compliance with the NESHAP opacity limit of 20 percent;
- Continuous emission monitoring system for total hydrocarbon emissions, operated in accordance with Performance Specification 8a in appendix B to 40 CFR part 60. This system is used to determine continuous compliance with the NESHAP total hydrocarbon concentration limit of 20 parts per million by volume, dry basis, corrected to 7 percent oxygen;
- Continuous monitoring of the temperature of the exhaust gases at the inlet to, or upstream of, the Kiln 6 baghouse. This temperature monitoring device is used to determine continuous compliance with temperature limits that serve as surrogates for the NESHAP dioxin/furan emission limit. The temperature limits are established based on the baghouse inlet temperature during successful dioxin/furan performance testing;
- Bag leak detection system for the Kiln 6 baghouse. This monitoring is used, in conjunction with other recordkeeping described below, to determine continuous compliance with the NESHAP mercury emission standard of 41 micrograms per dry standard cubic meter, corrected to 7 percent oxygen. It should be noted that the bag leak detection system is not directly required by the subpart LLL regulation; instead, subpart LLL requires compliance with the baghouse monitoring requirements in the NESHAP for control devices, subpart SS of 40 CFR part 63, but that rule does not specify monitoring for baghouses. A bag leak detection system was proposed by the Permittee, pursuant to 40 CFR § 63.995(c), and was subsequently approved by the Department;
- Recordkeeping for fly ash derivation. This recordkeeping, including certification from the supplier of each shipment of fly ash received, is required to demonstrate continuous compliance with the conditional prohibition on burning any fly ash that is 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 NESHAP permits the use of such fly ash only if the Permittee makes a demonstration that such use will not increase mercury emissions above the level achieved without such fly ash; and
- Operations and maintenance plan. This plan is required to include adequate procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the NESHAP emission limits and operating limits.

2. Other Requirements

In addition to the NESHAP monitoring and recordkeeping requirements, the permit also includes monitoring and recordkeeping requirements sufficient to ensure continuous compliance with the limits established pursuant to PSD and NNSR program requirements as described in Sections V and XI herein, and voluntarily accepted "synthetic minor" emission limits as described in Section IV.B herein. These requirements include the following:

- Continuous monitoring of kiln feed rate to determine continuous compliance with the daily and annual clinker production rates;
- Continuous emission rate monitoring system for SO_2, to determine continuous compliance with the SO_2 BACT limit;
- Continuous emission rate monitoring systems for CO, VOC, and NO_X, to determine continuous compliance with the synthetic minor limits;
- Bag leak detection system for the Kiln 6 baghouse. This monitoring is the basis for the Compliance Assurance Monitoring plan submitted by the Permittee for determining continuous compliance with the BACT, LAER, and dispersion modeling based PM-10 emission limits.

B. CLINKER COOLER

The Clinker Cooler monitoring and recordkeeping requirements included in the permit include the following:

- Continuous opacity monitoring system, operated in accordance with Performance Specification 1 in appendix B to 40 CFR part 60. This system is used to determine continuous compliance with the NESHAP opacity limit of 10 percent;
- Bag leak detection system for the Clinker Cooler baghouse. This monitoring is the basis for the Compliance Assurance Monitoring plan submitted by the Permittee for determining continuous compliance with the BACT, LAER, and dispersion modeling based PM-10 emission limits;
- Operations and maintenance plan. This plan is required to include adequate procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the NESHAP emission limits and operating limits.

C. FINISH MILLS

The permit includes the following monitoring and recordkeeping requirements for finish mills:

- Bag leak detection systems, used to determine continuous compliance with the NESHAP opacity limit of 10 percent and the BACT, LAER, and dispersion modeling based PM-10 emission limits; and

- Operations and maintenance plan. This plan is required to include adequate procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the NESHAP emission limits and operating limits.

D. PORTLAND CEMENT PLANT STORAGE BINS, CONVEYING SYSTEM TRANSFER POINTS, BAGGING SYSTEMS, BULK UNLOADING SYSTEMS, AND BULK LOADING SYSTEMS

The permit includes the following monitoring and recordkeeping requirements for the materials handling operations within the Portland cement plant:

- Bag leak detection systems for certain dust collectors. These systems will be used to determine continuous compliance with the NESHAP opacity limit of 10 percent and the BACT, LAER, and dispersion modeling based PM-10 emission limits; and
- For all dust collectors not equipped with bag leak detection systems, continuous monitoring of pressure drop across the dust collector in conjunction with periodic visible emissions observations in order to determine continuous compliance with the NESHAP opacity limit of 10 percent and the BACT, LAER, and dispersion modeling based PM-10 emission limits; and
- Operations and maintenance plan. This plan is required to include adequate procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the NESHAP emission limits and operating limits.

E. MATERIALS HANDLING IN THE QUARRY AND LIMESTONE PROCESSING PLANT

The permit includes the following monitoring and recordkeeping requirements for the quarrying and limestone materials handling operations:

- Daily recording of the number of blasts performed in the quarry, the amount of limestone quarried, and the amount of explosive used, in order to determine continuous compliance with the operational limits on these parameters;
- Continuous monitoring of pressure drop across all dust collectors. This monitoring is used to determine continuous compliance with the BACT, LAER, and dispersion modeling based PM-10 emission limits; and
- Periodic visible emissions observations. These observations are used to determine continuous compliance with the process weight rate based PM emission limits under the Pima County Code; and the opacity limits for existing sources under Article 7.

F. MATERIALS HANDLING IN THE COAL PREPARATION PLANT

The permit includes the following monitoring and recordkeeping requirements for the coal preparation plant:

- Continuous monitoring of exhaust gas temperature at the exit of each coal mill, upstream of the coal mill dust collectors. This monitoring is required by the NSPS for coal preparation plants because the coal mills are considered thermal dryers under that regulation;
- Continuous monitoring of pressure drop across all dust collectors. This monitoring is used to determine continuous compliance with the BACT, LAER, and dispersion modeling based PM-10 emission limits;
- Periodic visible emissions observations. These observations are used to determine continuous compliance with the process weight rate based PM emission limits under the Pima County Code and the opacity limits for existing sources under the NSPS for coal preparation plants.

G. EMERGENCY GENERATOR

The permit includes the following monitoring and recordkeeping requirements for the emergency generator:

- Continuous monitoring of the operating hours of the emergency generator, using a non-resettable hour meter. This monitoring is used to determine continuous compliance with the operational limits voluntarily accepted by the Permittee in order to qualify the emergency generator internal combustion engine as an emergency engine under the applicable NSPS and NESHAP, subpart IIII of 40 CFR part 60 and subpart ZZZZ of 40 CFR part 63;
- Daily records of the type, quantity, and sulfur content of fuel used. These records are used to determine continuous compliance with the BACT and NSPS fuel restrictions; and
- Daily visible emissions observations for each day on which the generator operates, other than emergency operation. These observations are used to determine continuous compliance with the opacity limit under Article 7.

X. PERFORMANCE TESTING REQUIREMENTS

A. KILN 6 INLINE KILN/RAW MILL

1. Portland Cement NESHAP

As noted in Table 2, the inline kiln/raw mill is an affected source under the NESHAP for Portland cement plants, subpart LLL of 40 CFR part 63. The NESHAP performance testing is required to be performed within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. The NESHAP performance testing requirements included in the permit, as required by A.A.C. R18-2-306(A)(3), include the following:

- Performance testing for PM emissions using EPA Reference Method 5, with separate tests run with and without the raw mill in operation;
- Performance testing for opacity of visible emissions, based on the data gathered by the continuous opacity monitoring system described in Section IX.A.1 herein, concurrent with the PM performance tests described above;
- Performance testing for dioxin/furan emissions using EPA Reference Method 23, with separate tests run with and without the raw mill in operation. This testing is required to be repeated once every thirty months;
- Performance testing for total hydrocarbons emissions, using the data gathered by the total hydrocarbon continuous emission monitoring system described in Section IX.A.1 herein, with separate tests run with and without the raw mill in operation; and
- Performance testing for mercury emissions using either EPA Reference Method 29 or ASTM Method D6784-02, with separate tests run with and without the raw mill in operation.

2. Other Requirements

In addition to the NESHAP performance testing requirements, the permit also requires performance testing to demonstrate compliance with the PM-10 emission limits established pursuant to PSD and NNSR program requirements as described in Sections V and XI herein. Separate tests are required to be run with and without the raw mill in operation. This testing, as the NESHAP performance testing, is required to be performed once within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. Testing is required to be repeated annually. The Permittee has several options for the test methods to be used:

- EPA Reference Methods 5 or 201a for filterable PM emissions, plus;
- EPA Reference Method 202 or EPA Other Test Method 28 (OTM-28) for condensable PM-10 emissions.

B. CLINKER COOLER

1. Portland Cement NESHAP

The NESHAP performance testing is required to be performed within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. The permit includes the following NESHAP performance testing requirements:

- Performance testing for PM emissions using EPA Reference Method 5, with separate tests run with and without the raw mill in operation; and
- Performance testing for opacity of visible emissions, based on the data gathered by the continuous opacity monitoring system described in Section

IX.B herein, concurrent with the PM performance tests described above.

2. Other Requirements

In addition to the NESHAP performance testing requirements, the permit also requires performance testing to demonstrate compliance with the PM-10 emission limits established pursuant to PSD and NNSR program requirements as described in Sections V and XI herein. This testing, as the NESHAP performance testing, is required to be performed once within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. Testing is required to be repeated annually. The Permittee has several options for the test methods to be used:

- EPA Reference Methods 5 or 201a for filterable PM emissions, plus;
- EPA Reference Method 202 or EPA Other Test Method 28 (OTM-28) for condensable PM-10 emissions.

C. PORTLAND CEMENT PLANT FINISH MILLS, STORAGE BINS, CONVEYING SYSTEM TRANSFER POINTS, BAGGING SYSTEMS, BULK UNLOADING SYSTEMS, AND BULK LOADING SYSTEMS

The permit includes the following performance testing requirements for the finish mills and materials handling operations within the Portland cement plant:

- Initial performance testing for opacity of visible emissions, using EPA Reference Method 9, to demonstrate compliance with the NESHAP opacity limits. This performance testing is required to be performed within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. The 180-day deadline applies to the Method 9 performance test pursuant to 40 CFR §§ 63.7(a)(2)(ii) and 63.1349(b)(2).
- Performance testing for PM emissions, using EPA Reference Method 5, to demonstrate compliance with the PM emission limits required under BACT, LAER, and dispersion modeling requirements. This testing is required to be performed once within 60 days after achieving the maximum production rate at which the affected source will be operated, or within 180 days after initial startup, whichever is earlier. In addition, if there are three years or more remaining in the term of the Class I permit at the time the initial testing is performed, the permit requires that this performance testing be repeated once during the permit term, not more than 12 months prior to permit expiration.

D. MATERIALS HANDLING IN THE QUARRY AND LIMESTONE PROCESSING PLANT

The permit includes performance testing requirements for each dust collector associated with

the limestone processing plant in order to determine compliance with the BACT, LAER, and dispersion modeling based PM-10 emission limits and the process weight rate based PM emission limits under the Pima County Code. The testing is required to be conducted in accordance with EPA Reference Methods 1-4, plus EPA Reference Method 5 for PM. The Permittee has the option using the Method 5 test results to demonstrate compliance with the PM-10 emission limits, or conducting separate tests using EPA Reference Methods 201 or 201a for filterable PM-10 emissions. Because the limestone processing operations occur at ambient temperatures, no condensible particulate matter is expected and no testing for that fraction is required.

For each dust collector, the testing is required to be performed within 60 days after achieving the maximum production rate at which the affected facility will be operated, or within 180 days after initial startup, whichever is earlier.

E. MATERIALS HANDLING IN THE COAL PREPARATION PLANT

The permit includes performance testing requirements for each dust collector and each conveyor transfer point associated with the coal preparation plant in order to determine compliance with the PM emission limits required under BACT, LAER, NSPS, and dispersion modeling requirements. The testing is required to be conducted in accordance with EPA Reference Methods 1-5 for PM and EPA Reference Method 9 for opacity. The initial testing is required to be performed within 60 days after achieving the maximum production rate at which the affected facility will be operated, or within 180 days after initial startup, whichever is earlier. If there are three years or more remaining in the term of the Class I permit at the time the initial testing is performed, the permit requires that the performance testing be repeated once during the permit term, not more than 12 months prior to permit expiration.

XI. PSD AIR QUALITY IMPACTS ANALYSIS

As noted in Section III, the Kiln 6 project is a major modification subject to PSD review with respect to SO_2 emissions increases. Accordingly, the Permittee conducted an ambient air quality impact analysis as required by A.A.C. R18-2-406(A)(5) and R18-2-407. This analysis was submitted as part of the April 2007 supplement to the Class I permit application. As detailed below, the Department has reviewed this analysis and concurs with the Permittee's conclusions.

A. GROWTH ANALYSIS

Pursuant to A.A.C. R18-2-407(I), the Permittee was required to perform an analysis of general commercial, residential, industrial, and other growth associated with the proposed modification. The projected growth is required to be considered in other portions of the the ambient air quality impact analysis, as described below. The Permittee submitted, in Section 8.3.5 of the April 2007 supplement to the Class I permit application, a brief analysis showing that the Kiln 6 Project will not require any additional employees over the current workforce to operate the cement plant. Because no additional workforce is needed, there will be no associated growth.

B. DEMONSTRATION OF COMPLIANCE WITH AMBIENT STANDARDS

The Permittee conducted dispersion modeling analyses in order to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and PSD increments. The results of this analysis were submitted in the December 2005 permit application and in Section 8 of the April 2007 supplement to the permit application. The Department has reviewed this analysis and has determined that it was performed in accordance with Section 5.0 of the Department's "Air Dispersion Modeling Guidelines for Arizona Air Quality Permits."

1. Model Description and Data Processing

Based on recommendations from the Department, the Permittee's dispersion modeling analysis used U.S. EPA's refined model ISCPRIME (version 04269) with the regulatory default option set. This option requires the use of terrain elevation data, stack-tip downwash, sequential date checking, and does not permit the use of the model in the SCREEN mode. In the regulatory default mode, pollutant half life or decay options are not employed . The non-guideline model OBODM (Open Burning/Open Detonation Model) was also used to assess impacts from Quarry blasting.

Receptor density was adequate to demonstrate assessment of maximum concentrations. Receptor elevations were calculated from USGS DEM data.

2. Emission and Stack Data

Table 3a presents a summary of the modeled emission rates and stack parameters for each major point source. Additionally there were over 90 baghouse emission points modeled for PM-10 emissions throughout the facility, having a total maximum hourly emission rate of 42 lbs/hour. Numerous area and volume sources were also included to portray various handling and haul road emissions These are summarized in Table 3b.

The Permittee's dispersion modeling analysis included a Good Engineering Practice (GEP) stack height analysis. The latest version of U.S. EPA's BPIP-PRIME program was used to calculate GEP stack heights. The GEP heights were compared to actual stack heights to demonstrate compliance with the stack height regulations codified at 40 CFR part 51. For any stack that was calculated to be less than GEP height, the BPIP downwash parameters were included in the ISCPRIME analysis.

TABLE 3a: MAJOR POINT SOURCE MODELING PARAMETERS

Stack ID	Stack Height (m)	Exit T (k)	Exit velocity (m/s)	Exit Diam (m)	SO_2 Emissions (lb/hr)	NO_2 Emissions (lb/hr)	CO Emissions (lbs/hr)	PM-10 Emissions (lbs/hr)
H5GB	39.624	477.59	14.578	4.877	53.02	512.0159	167.57	28.0279
HEATBOIL	12.192	533	7.831	0.152	0.0004	0.0651	0.0069	0.0048
DFH1	1.83	Ambient	Horizontal	0.001	0.0009	0.1587	0.017	0.0119
DFH2	1.83	Ambient	Horizontal	0.001	0.0009	0.1587	0.017	0.0119
D5PC	40.54	366.48	20.3	1.22	0.0063	1.1112	0.117	1.22
DGEN	2.438	814.82	155.61	0.67	0.0002	0.5794	1.21	0.5540
POO	2.438	814.82	155.61	0.67	0.0002	0.0000	NA	NA

TABLE 3b: SUMMARY OF FUGITIVE EMISSIONS

	PM-10 Emissions TPY	PM-10 Emissions lbs/hr
Area Sources	4.3	2962
Volume Sources	162	148
Total	166.3	3,110

3. Ambient Background Concentration Data

Ambient background concentrations are added to the maximum modeled concentrations to determine compliance with the NAAQS. In Arizona, ambient monitoring is conducted by a number of governmental agencies and regulated industries. As recommended by the Department's Modeling Guidelines, the Permittee's NAAQS demonstration used background air quality concentrations that were derived from the latest three years of available monitoring data from the nearest representative monitoring stations for CO, SO_2, and NO_2. The selected background concentrations are presented in Table 4.

A refined method was used to calculate the PM-10 ambient background data, based upon the daily monitored values. The procedure used to determine the background 24-hour average PM-10 concentration for the NAAQS modeling, as approved by the Department, added modeled impacts to day-specific background concentrations measured at the Pima County DEQ's Tangerine monitoring station. The day-specific 24-hour average PM-10 background concentrations were determined as either the monitored value for that specific day, or the greater of the two surrounding monitored values. The value listed in Table 4 below is the maximum day-specific ambient PM-10 background value used.

TABLE 4: AMBIENT BACKGROUND CONCENTRATIONS

Pollutant	Station	Background Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
NO_2 Annual ($\mu g/m^3$)	Pima Co	32.3	100
PM-10 24-hr ($\mu g/m^3$)	Tangerine	81	150
PM-10 Annual ($\mu g/m^3$)	Tangerine	19	50
SO_2 3-hr ($\mu g/m^3$)	Pima Co	26.2	1,300
$SO_2$24-hr ($\mu g/m^3$)	Pima Co	10.5	365
SO_2 Annual ($\mu g/m^3$)	Pima Co	4.0	80
CO 1-hr ($\mu g/m^3$)	Pima Co	4,923	40,000
CO 8-hr ($\mu g/m^3$)	Pima Co	2,176	10,000

4. Modeling Results

The NAAQS modeling results for the facility are presented in Table 5a. The total modeled impacts (modeled concentrations plus background concentrations) are less than the corresponding NAAQS.

PSD Class II SO_2 Increment modeling was performed. The project impacts were above the significant impact levels (SIL's) for the 3-hr and 24-hr SO_2 averaging intervals, therefore cumulative SO_2 PSD increment consumption modeling was performed. The Significant Impact Area was less than two kilometers from the plant. Since there are no major SO_2 PSD sources within 50 km of the APCC Rillito cement plant, only the Permittee's sources were included in the SO_2 Class II PSD increment analysis.

Table 5b shows that maximum predicted impacts are below PSD Class II increment levels.

TABLE 5A: NAAQS MODELING RESULTS

Pollutant	Averaging Interval	NAAQS ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)		Exceeds NAAQS
			Source Only	Including Background	
NO_2	Annual	100	4.97	37.3	No
SO_2	3-Hour	1300	95.7	121.7	No
	24-Hour	365	17.1	27.1	No
	Annual	80	0.4	4.4	No
PM-10	24-Hour [1]	150	126.2	135.2	No
	Annual	50	26.5	45.5	No
CO	1-Hour	40,000	3,209	8,133	No
	8-Hour	10,000	493	2,669	No

[1] – The maximum values shown are the source-only predicted concentration impact and the total predicted concentration corresponding to the day with the highest sixth high. As described in Section XI.B.3, day-specific ambient 24-hour background PM-10 concentration values were used in the NAAQS analysis.

TABLE 5B: PSD CLASS II INCREMENT MODELING RESULTS

Pollutant	Averaging Interval	PSD Increment ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)		SIA (km)	SIL ($\mu g/m^3$)
			Source Only [1]	Including PSD Inventory [2]		
SO_2	3-Hour	512	35.7	34.4	1.2	25
	24-Hour	91	8.8	6.0	1.4	5
	Annual	20	0.4	NA	NA	1

[1] – Highest concentration
[2] – High second-highest

5. Class I PSD Increment

The Permittee's facility is located within 200 kilometers of seven Class I areas. Because the proposed major modification will result in a significant net increase in SO_2 emissions, the Permittee performed an analysis to demonstrate that the project would not cause or contribute to a violation of a PSD Class I increment in any of these areas. This analysis is documented in Section 8.4 of the April 2007 supplement to the permit application of PSD. The Class I areas evaluated are as follows:

- Saguaro National Park
- Chiricahua Wilderness Area
- Chiricahua National Monument
- Galiuro National Monument
- Mount Baldy Wilderness Area
- Sierra Ancha Wilderness Area
- Superstition Wilderness Area

Because the boundary of Saguaro National Park is within 50 kilometers of the Permittee's facility, the ISCPRIME model was used to determine air quality impacts at that park. All other Class I areas are greater than 50 kilometers, and have been modeled using the CALPUFF air quality model, with three years of MM5 gridded data (2002-2004).

Modeling demonstrated that the Class I SO_2 SIL for the 3-hour and 24-hour averaging periods were exceeded at the nearby Saguaro National Park western unit. No other SIL's were reached at any other Class I. Table 6 lists the significant Impact Results for PSD Class I SO_2 Increment analysis.

Therefore, cumulative modeling analyses were done using all PSD increment consuming sources in the Saguaro National Park western unit. Sulfur dioxide emission sources within 300 km of the Saguaro National Park western unit were evaluated initially to determine the sources to include in the cumulative Class I increment modeling. These source data were incorporated from Maricopa County, Pinal County, Pima County, NEI, and the New Mexico Environment Department's databases. Based on guidance from the National Park Service, only sources with an SO_2 emission rate, in tons per year that exceeded 0.8 times the distance from the Saguaro National Park western unit, in kilometers were included in the modeling.

Cumulative PSD increment results show impacts to be less than the Class I PSD Increment levels, as shown in Table 7.

TABLE 6: CLASS I SO_2 INCREMENT SIL RESULTS

Area	Averaging Period			
		Maximum	**SIL ($\mu g/m3$)(2)**	Above SIL?
Chiricahua WA	3-hour	**0.060**	1.0	No
	24-hour	**0.019**	0.2	No
	Annual	**0.001**	0.1	No
Chiricahua NM	3-hour	**0.045**	1.0	No
	24-hour	**0.012**	0.2	No
	Annual	**0.001**	0.1	No
Galiuro WA	3-hour	**0.239**	1.0	No
	24-hour	**0.056**	0.2	No
	Annual	**0.006**	0.1	No
Mt. Baldy WA	3-hour	**0.023**	1.0	No
	24-hour	**0.004**	0.2	No
	Annual	**0.000**	0.1	No
Sierra Ancha WA	3-hour	**0.062**	1.0	No
	24-hour	**0.010**	0.2	No
	Annual	**0.001**	0.1	No
Superstition WA	3-hour	**0.147**	1.0	No
	24-hour	**0.033**	0.2	No
	Annual	**0.002**	0.1	No

Saguaro NP West	3-hour	**11.06**	1.0	**Yes**
	24-hour	**1.90**	0.2	**Yes**
	Annual	**0.09**	0.1	No
Saguaro NP East	3-hour	**0.98**	1.0	No
	24-hour	**0.16**	0.2	No
	Annual	**0.02**	0.1	No

TABLE 7: CLASS I INCREMENT SO_2 IMPACTS AT SAGUARO NP

Pollutant	Averaging Interval	PSD Class I Increment ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)	
			Plant Only [1]	Including PSD Inventory [2]
SO_2	3-Hour	25	11.1	10.1
	24-Hour	5	1.9	1.4

[1] – Highest concentration
[2] – High second-highest

G. SOILS, VEGETATION, AND VISIBILITY IMPACTS ANALYSIS

Pursuant to A.A.C. R18-2-407(A)(1), the Permittee performed an analysis of the project's impacts on soils and vegetation in the vicinity of the project site. This analysis included dispersion modeling with ISCPRIME and showed that maximum predicted impacts for SO_2 were less than six percent of the EPA's screening threshold values for sensitive species. The analysis is presented in detail in Section 8.3.4 of the April 2007 supplement to the Class I permit application. The Department has reviewed this analysis and agrees with the Permittee's conclusions. In particular, the Department notes that the Permittee's analysis was conservative, as it did not take into account the significant NO_X emission reductions to be achieved, and the resultant benefits in terms of synergistic impacts of SO_2 and NO_X ambient concentrations.

XII. CLASS I AREA IMPACTS ANALYSIS

The Permittee submitted Class I Air Quality Related Values (AQRV) impact analyses in its April 2007 supplement to the permit application. This analysis included assessment of both visibility and deposition impacts. This analysis is reviewed by the Federal Land Manager (FLM) responsible for each affected Class I areas, in this case the U.S. Forest Service and the National Park Service. The Department transmitted the Class I permit application, including the Class I AQRV impact analyses, to the FLM agencies and to date has not received any comments indicating concerns regarding adverse impacts on any AQRV's.

XIII. ARIZONA AMBIENT AIR QUALITY GUIDELINES (AAAQG)

The Permittee conducted a dispersion modeling analysis in order to demonstrate compliance with the AAAQG and submitted the results of this analysis as Appendix G to the December 2005 permit application. The Department has reviewed this analysis, has determined that it was performed in accordance with Section 5.0 of the Department's "Air Dispersion Modeling Guidelines for Arizona Air Quality Permits."

The AAAQG modeling results are presented in Table 8. The modeled impacts from the plant were below all the AAAQG threshold levels. Therefore, the Department has concluded that the Permittee's AAAQG modeling results are acceptable.

TABLE 8: AAAQG MODELING RESULTS

	Modeled Ambient Concentration ($\mu g/m^3$)			AAAQG ($\mu g/m^3$)		
	Annual	24-Hour	1-Hour	Annual	24-Hour	1-Hour
Acetaldehyde	3.24E-05	7.80E-04	4.45E-03	5.00E-01	1.40E+03	2.30E+03
Aluminum	6.00E-04	1.44E-02	8.24E-02	--	1.50E+02	4.50E+02
Ammonia	2.29E-02	5.52E-01	3.15E+00	--	1.40E+02	--
Arsenic	7.98E-06	1.92E-04	1.10E-03	2.00E-04	7.30E-02	2.80E-01
Barium	2.12E-03	5.12E-02	2.92E-01	--	4.00E+00	1.5-E+01
Benzene	4.03E-03	9.71E-02	5.54E-01	1.40E-01	5.10E+01	6.30E+02
Benz(a)anthracene	2.44E-07	5.88E-06	3.35E-05	5.70E-04	2.10E-02	7.90E-02
Benzo(a)pyrene	1.56E-08	3.76E-07	2.15E-06	5.70E-04	2.10E-01	7.90E-01
Beryllium	1.60E-05	3.84E-04	2.19E-03	5.00E-04	1.60E-02	6.00E-02
Cadmium	4.36E-05	1.05E-03	6.00E-03	2.90E-04	1.10E-01	1.70E+00
Chlorobenzene	3.15E-04	7.57E-03	4.32E-02	--	2.56E+03	
Chromium	8.10E-06	1.95E-04	1.11E-03	--	3.80E+00	1.10E+01
Copper	6.82E-05	1.64E-03	9.38E-03	--	7.50E-01	2.30E+00
Ethylbenzene	6.82E-04	1.64E-02	9.37E-02	--	3.50E+03	4.50E+03
Formaldehyde	2.05E-02	4.94E-01	2.82E+00	8.00E-02	1.20E+01	2.00E+01
Hydrogen Chloride	4.75E-02	1.14E+00	6.52E+00	7.00E+00	5.60E+01	2.10E+02
Hydrogen Fluoride	3.16E-03	7.61E-02	4.35E-01	--	1.88E+02	5.63E+02
Iron	5.99E-04	1.44E-02	8.24E02	--	4.00E+01	8.30E+01
Manganese	3.14E-02	7.56E-01	4.31E+00	--	8.00E+00	2.50E+01
Mercury	1.81E-05	4.35E-04	2.48E-03	--	4.00E-01	1.50E+00
Methylene Chloride	1.83E-04	4.40E-03	2.51E-02	5.60E+00	2.00E+03	7.60E+03
Molybolenum	1.25E-05	3.02E-04	1.72E-03	--	4.00E-01	8.30E+01
Napththalene	5.94E-04	1.43E-02	8.16E-02	--	4.00E+02	6.30E+02
Nickel	2.15E-05	5.18E-04	2.96E-03	4.00E-03	1.50E+00	5.70E+00
Pentachlorophenol	1.56E-05	3.76E-04	2.15E-03	--	4.00E+00	1.30E+01
Phenol	1.21E-04	2.91E-03	1.66E-02	--	1.50E+02	3.20E+02
Polychlorinated Biphenyls	4.22E-06	1.02E-04	5.80E-04	6.10E-04	7.90E-02	3.00E-01
Selenium	1.60E-05	3.84E-04	2.19E-03	--	1.60E+00	6.00E+00

	Modeled Ambient Concentration (µg/m^3)			AAAQG (µg/m^3)		
	Annual	24-Hour	1-Hour	Annual	24-Hour	1-Hour
Silver	1.40E-05	3.37E-05	1.92E-04	--	7.90E-02	3.00E-01
Sulfuric Acid Mist	4.54E-03	1.09E-01	6.24E-01	--	7.50E+00	2.25E+1
2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.30E-09	1.28E-07	7.28E-07	2.40E-05	1.10E-02	4.30E-02
Thallium	1.24E-05	2.98E-04	1.70E-03	--	7.90E-01	3.00E+00
Toluene	8.46E-04	2.04E-02	1.16E-01	--	3.00E+03	4.70E+03
m-& p-Xylenes	3.10E-04	7.47E-03	4.26E-02	--	3.50E+03	5.50E+03
O-Xylenes	1.36E-04	3.28E-03	1.87E-02	--	3.50E+03	5.50E+03
Xylenes	4.46E-04	1.07E-02	6.13E-02	--	3.50E+03	5.50E+03
Zinc (Total Dust)	1.57E-03	3.79E-02	2.16E-01	--	8.00E-01	3.00E+02