

Bay Area Air Quality Management District

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**Permit Evaluation
and
Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT**

**for
Owens Corning
Facility #: A0041**

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960 Central Expressway
Santa Clara, CA 95050

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit,” as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of one or more regulated air pollutants, more than 10 tons per year of one or more hazardous air pollutants and more than 25 tons per year of a combination of hazardous pollutants.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A0041.

B. Facility Description

The Owens Corning plant in Santa Clara manufactures wool glass fibers that are used in building insulation materials. Glass fiber manufacturing is the high-temperature conversion of various raw materials (predominantly borosilicates) into a homogenous melt, followed by the fabrication of this melt into glass fibers. Glass fiber production can be segmented into four phases: Raw Materials Handling, Glass Melting and Refining, Wool Glass Fiber Forming and Wool Glass Fiber Finishing.

Raw Materials Handling, Glass Batch – The primary component of glass is sand, but the batch may also contain other materials (e.g. sodium sulfate, anhydrous borax, etc.). The bulk supplies are received by rail car and/or truck. Lesser-volume supplies are received in drums, bags, or other packages. From storage, the materials are weighed according to the desired batch formulation and then blended well before their introduction into the melting unit. The weighing, mixing, and charging operations are conducted in either batch or continuous mode.

Raw Materials Handling, Binder – The binder is an aqueous solution of a thermosetting resin. Other materials may also be added, e.g. red dye, process oil, urea, etc. The bulk supplies are

received by rail car and/or truck. Lesser volume supplies are received in drums, totes, bags, or other packages. From storage some of the materials are pre-mixed into solutions. The binder raw materials, along with the pre-mixed solutions are then metered into a mix tank. The resulting binder is transferred to storage for application in the forming section.

Glass Melting and Refining – In the glass-melting furnace, the raw materials are heated to temperatures that transform them through a sequence of chemical reactions to molten glass. Electric furnaces melt glass by passing an electric current through the fused mass or melt. In operation, mixed raw materials are introduced continuously on top of a bed of molten glass where they slowly melt.

Wool Glass Fiber Forming – During the formation of fibers into a wool fiberglass mat (the process known as “forming” in the industry), glass fibers are made from molten glass by using the rotary spin process: centrifugal force causes the fibers to flow through small holes in the wall of a rapidly rotating cylinder to create fibers that are broken into short lengths by an air stream. A chemical binder is simultaneously sprayed on the fibers as they are created. The binder is a thermosetting resin that holds the glass fibers together. After the glass fibers are created and sprayed with the binder solution, they are collected by gravity and suction air on a perforated conveyor belt in the form of a mat.

Wool Glass Fiber Finishing – The conveyor carries the newly formed mat through a large oven to cure the thermosetting binder and then through a cooling section where ambient air is drawn down through the mat. The cooled mat remains on the conveyor for trimming of the uneven edges. Then, if product specifications require it, a backing is applied with an adhesive, usually laminating asphalt, to form a vapor barrier. The mat is then cut into batts or rolls of the desired dimensions and packaged.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District’s General Provisions and Permitting rules.

Condition I.J has been added to clarify that the capacity limits shown in Table II-A are enforceable limits.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a “regulated air pollutant,” as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a “hazardous air pollutant,” as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24).

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District’s regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

Following are explanations of the differences in the equipment list between the time that the facility originally applied for a Title V permit and the permit proposal date:

Devices Removed from Service or Archived since Application was submitted in October 1995:

Source #	Source Description
NA	“M” Brander
NA	“O” Brander

Abatement Device #	Abatement Device Description	Source Abated and Source Description
1	“M” Forming Scrubber	2 – “M” Forming
2	“M” Forming Scrubber	2 – “M” Forming
3	“M” Forming Scrubber	2 – “M” Forming
4	“M” Forming Scrubber	2 – “M” Forming
21	“O” Forming Scrubber	20 – “O” Forming
22	“O” Forming Scrubber	20 – “O” Forming
23	“O” Forming Scrubber	20 – “O” Forming

Abatement Device #	Abatement Device Description	Source Abated and Source Description
24	“O” Forming Scrubber	20 – “O” Forming
29	Simple Baghouse	26 – Sandblasting Room
43	Liquid Separator	82 – Maintenance Paint Shop Spray Booth
144	Thermal Oxidizer	153 – Calciner
145	Flex Kleen Baghouse	153 – Calciner
146	Fluid Flow Dust Collector Baghouse	154 – Fiberglass Surge Bin
NA	Electrostatic Precipitator	“O” Brander

Devices Permitted Since Application was submitted:

Source #	Source Description
33	Process/Groundwater Storage Surge Tank
46	Asphalt Tank #1 (Wool)
50	Resin Tank #1 (East) Phenol Formaldehyde Resin – Aqueous
51	Resin Tank #2 (West) Phenol Formaldehyde Rein – Aqueous
61	“M” Packing Dust Collection System
62	“O” Packing Dust Collection System
149	Open Top Groundwater Storage/Surge tank
150	Open Top Groundwater Storage/Surge tank
155	‘M’ Line, Ink Jet Printing System
156	‘O’ Line, Ink Jet Printing System
157	‘M’ Machine Flexographic Bldg. Insulation Printers (3 printers)
158	‘O’ Machine Flexographic Printers (5 printers)
159	Pump Seal Cooling Water Storage Tank
160	Binder Red Dye Tank
161	Premix Tank, T-19
162	Premix Tank, T-20
163	Maintenance Paint Shop Spray Booth
164	Boilerhouse Standby Diesel Generator
166	Cullet Water Standby Diesel Generator
167	Cooling Water Standby Diesel Generator

Devices with Changed Permit Status:

(These devices were previously exempt from requiring District permits)

Source #	Source Description
65	Fire System Diesel Pump
66	EM-3 Standby Diesel Generator
67	'O' Line Standby Diesel Generator
68	'M' Line Standby Diesel Generator

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered significant sources pursuant to the definition in BAAQMD Rule 2-6-239.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations:

Owens Corning is not subject to the Standard of Performance for New Stationary Sources (NSPS) requirements contained in 40 CFR Part 60. Specifically, the "M" and "O" Line Electric Furnace, Channel and Forehearth sections (Sources S-1 and S-19) are exempt from NSPS Subpart CC "Standards of Performance for Glass Manufacturing Plants", because the furnaces are electrically powered. The "M" and "O" Line Rotary Spin (RS) Forming sections (Sources S-2 and S-20), the "M" and "O" Line Curing sections (Sources S-3 and S-21), the "M" and "O" Line Cooling Sections (Sources S-4 and S-22) are exempt from NSPS Subpart PPP "Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants" because the rotary spin wool manufacturing lines (forming, curing and cooling sections) were constructed before February 7, 1984.

The facility is not subject to any National Emission Standard for Hazardous Air Pollutants (NESHAP) requirements contained in 40 CFR Part 61, because it does not meet the applicability requirements for any standard.

Sources S-1 through S-4 and sources S-19 through S-22 are subject to 40 CFR Part 63, Subpart NNN, National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing (Subpart NNN). Subpart NNN applies to new and existing glass melting furnaces at wool fiberglass manufacturing facilities and each new and existing rotary spin wool fiberglass manufacturing line producing a bonded wool fiberglass building insulation product. In addition to the General Provisions contained in 40 CFR Part 63, Subpart A, source specific applicable requirements for the above sources in light of Subpart NNN have been added to and documented in Table IV of the permit.

Owens Corning was cited and issued three Notices of Violation (NOVs) in January 1995 for odor related public nuisance violations. Specifically, the NOVs were issued on January 5th, 11th and 13th. In recent years, two separate odor complaints were received in December 2002 and March 2003. The plant was not issued NOVs, because the complaints could not be confirmed. In order to ensure the safety and welfare of the nearby residential communities that are in close proximity to the plant, sources S-1, S-2, S-3, S-4, S-19, S-20, S-21 and S-21 are subject to odor standards in BAAQMD Regulation 7 – Odorous Substances.

The “M” and “O” RS lines at Owens Corning are not subject to District Regulation 8 – Organic Compounds, for the following reasons:

Regulation 8-1-110.3 states:

“8-1-110 Exemptions: The following shall be exempted from the provisions of this regulation: 110.3 Any operation or group of operations which are related to each other by being a part of a continuous process, or a series of such operations on the same process material, which are subject to Regulation 8, Rule 2 or Rule 4, and for which emissions of organic compounds are reduced at least 85% on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide.”

The forming (S-2, S-20), curing (S-3, S-21) and cooling (S-4, S-22) sections are related to each other by being part of a continuous process and the resulting organic compound emissions from the “M” & “O” RS line curing oven exhaust are abated by incinerators A-5, A-6 and A-25 with a destruction efficiency greater than 90%.

Therefore, the RS lines at Owens Corning are exempt from complying with the provisions of Regulation 8.

The “M” and “O” line furnaces S-1 and S-19 are not subject to Regulation 9, Rule 12 – “Inorganic Gaseous Pollutants - Nitrogen Oxides from Glass Melting Furnaces” for the following reasons:

Regulation 9-12-110.1 states:

“9-12-110 Exemptions: The requirements of this Rule shall not apply to the following: 110.1 Furnaces in which all the heat required for melting is provided by electric current from electrodes submerged in the molten glass, except that heat may be supplied by fossil fuels for start-up when the furnace contains no molten glass.”

The “M” and “O” line furnaces S-1 and S-19 at Owens Corning are equipped with natural gas fired burners and electrode equipment. During start-up of the above furnaces, after all glass is removed from the furnace from a prior shutdown, the gas-fired burners are used to melt the initial batch mixture into molten glass. Once the initial batch mixture is melted, the gas-fired burners are shut off and electrode equipment inside each furnace provides the thermal energy to keep the glass in a molten state and to melt additional batch mix that is added to the top of the furnace. The addition of batch mix at the top of the furnaces forms a cold crust on top of the molten glass within the furnace, hence sources S-1 and S-19 are referred to as cold top electrically powered furnaces. Therefore, for lack of a specific District regulation and/or emissions limit, the cold top furnaces at Owens Corning are not subject to Regulation 9.

In similar fashion, the natural gas fired fiberizers that are used in the “M” and “O” line forming sections sources 2 and 20 are not subject to Regulation 9 because there is no District regulation and/or emission limit for control of such sources.

The curing section ovens sources 3 and 21 are not subject to Regulation 9, Rule 7 – “Inorganic Gaseous Pollutants - Nitrogen Oxides And Carbon Monoxide From Industrial, Institutional, And Commercial Boilers, Steam Generators, And Process Heaters”, for the following reasons:

Regulation 9-7-110.6 states:

“9-7-110 Exemptions: The requirements of this rule shall not apply to the following:

110.6 Kilns, ovens, and furnaces used for drying, baking, heat treating, cooking, calcining, or vitrifying.”

Since the “M” and “O” line curing section ovens are used to dry and cure the thermosetting resin sprayed on the glass fibers in the forming sections, they qualify for the above exemption.

There are no combustion emissions associated with the “M” and “O” cooling sections. Therefore, sources 4 and 22 are not subject to Regulation 9.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance over the past year and has no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all ‘strike-out’ language will be deleted; all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new annual and daily throughput limits on sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a “modified source” as defined in District Rule 2-1-234. Whether there is a modified source depends in part on whether there has been an “increase” in “emission level.” 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding “emission level” for purposes of 2-1-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as “grandfathered” sources), an “increase” in “emission level” is addressed in 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of either: 1) the design capacity of the source, 3) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is “bottlenecked”), then the relaxing of that limitation (“debottlenecking”) is considered a modification.

The District has written throughput limits into the Title V permit for grandfathered sources. As discussed above, these limits are written for the purpose of determining whether an increase in emission levels has occurred. The purpose of these limits is to facilitate implementation of preconstruction review program. If these limits are exceeded, the facility would be expected to report the exceedence, and the District would treat the reported exceedence as presumptively establishing the occurrence of a modification. The facility would then be expected to apply for a preconstruction permit addressing the modification and the District would consider whether an enforcement action was appropriate.

It is important to note the presumptive nature of throughput limits for grandfathered sources that are created in the Title V permit. These limits are generally based upon the District’s review of information provided by the facility regarding the design capacity or highest documented capacity of the grandfathered source. To verify whether these limits reflect the true design, documented, or “bottlenecked” capacity (pursuant to 2-10234.1) of each source is beyond the resource abilities of the District in this Title V process. Moreover, the District cannot be completely confident that the facility has had time or resources necessary to provide the most accurate information available in this regard. Creating throughput limits in the Title V permit for

grandfathered sources is not required by either Part 70 or the District's Major Facility Review rules. Despite the lack of such a requirement, and despite the resource and information challenges presented in the Title V process, the District believes that writing presumptive limits for grandfathered sources into the Title V permit will provide a measure of predictability regarding the future applicability of the preconstruction review program, and that this increased predictability is universally beneficial.

It follows from the presumptive nature of these throughput limits for grandfathered sources that exceedence of these limits is not per se a violation of the permit. *Failure to report an exceedence would be a permit violation.* In this sense, the throughput limits function as monitoring levels, and are imposed pursuant to the District's authority to required monitoring that provide a reasonable assurance of compliance. If an exceedence occurs, the facility would have an opportunity to demonstrate that the throughput limit in fact did not reflect the appropriate limit for purposes of 2-1-234.3. If the facility can demonstrate this, no enforcement action would follow, and the permit would be revised at the next opportunity. It also follows that compliance with these limits is not a "safe harbor" for the facility. If evidence clearly shows that a grandfathered source has undergone a "modification" as defined in 2-1-234.3, the District would consider that a preconstruction review-triggering event, notwithstanding compliance with the throughput limit in the Title V permit. In other words, the protection afforded the facility by complying with the throughput limit in the Title V permit is only as strong as the information on which it was based. There is no Title V "permit shield" associated with throughput limits for grandfathered sources, as they are being proposed. A shield may be provided if the District determines with certainty that a particular limit is appropriate for purposes of 2-1-234.3.

As an example, consider sources 2, 3, 4, 20, 21 and 22. A maximum daily limit of 135 tons/day has been presumptively established for the above sources. However, if Owens Corning were to demonstrate that above presumptive limit does not reflect the appropriate throughput limit at the above sources, the permit will be revised accordingly.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

Conditions have also been deleted due to the following:

- Redundancy in record-keeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.
- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO that limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.

- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Parameter monitoring has been added for each abatement device. Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

All permit conditions have been re-written in active voice and hold the owner/operator responsible for non-compliance with emission limits and/or permit condition requirements.

Permit Condition 16834 that governs the operation of the "M" and "O" Line Furnace, Channel and Forehearth (Sources S-1 and S-19) was revised to incorporate requirements for Owens Corning to conduct a District-approved source test once per permit term (i.e., every five years) to demonstrate compliance with Regulation 6 "Particulate Matter and Visible Emissions" (Sections 310 and 311); Regulation 9, Rule 1 "Inorganic Gaseous Pollutants – Sulfur Dioxide" (Section 302); Regulation 11, Rule 1 "Hazardous Pollutants – Lead"; and 40 CFR Part 63, Subpart NNN (PM and Formaldehyde Emission Limits).

A new permit condition (# 20565) was created to govern the operation of the "M" & "O" Forming and Curing lines (S-2, S-3 & S-20, S-21). This was because no permit conditions previously addressed and/or governed the operation of the above sources. Permit Condition 20565 sets forth parametric inspection, monitoring and recordkeeping requirements for the incinerators that abate the organic compound emissions from sources S-3 and S-21. In addition, permit condition 20565 contains parametric inspection, monitoring and recordkeeping requirements for the Air Action Cyclone Scrubber & High Performance Air Filter that abates emissions from sources S-3 and S-21. Permit Condition 20565 requires Owens Corning to perform a District-approved source test once per permit term at S-2, S-3, S-20 and S-21 to demonstrate compliance with Regulation 6 "Particulate Matter and Visible Emissions" (Sections 310 and 311), and Regulation 9, Rule 1 "Inorganic Gaseous Pollutants – Sulfur Dioxide" (Section 302). In addition, the facility will have to conduct a District-approved source test once per permit term at "M" Charge Incinerator (A-5), "M" Discharge Incinerator (A-6) and "O" Oven Incinerator (A-25) to demonstrate compliance with the formaldehyde emission limit of 1.2 pounds per ton of glass pulled per rotary spin manufacturing line in 40 CFR Part 63, Subpart NNN.

A new permit condition (# 20566) was added to govern the operation of the "M" and "O" Cooling sections (S-4 and S-22). This was because no permit conditions previously addressed and/or governed the operation of the above sources. Permit Condition 20566 sets forth parametric inspection, monitoring and recordkeeping requirements for the High Efficiency Air Filter (A-7) and the "O" Cooling Scrubber (A-26). Permit Condition 20566 requires Owens Corning to perform a District-approved source test once per permit term at S-4 and S-22 to demonstrate compliance with Regulation 6 "Particulate Matter and Visible Emissions" (Sections 310 and 311), and Regulation 9, Rule 1 "Inorganic Gaseous Pollutants – Sulfur Dioxide"

(Section 302). Lastly, permit condition 20566 requires Owens Corning to conduct a District-approved source test at A-7 and A-26 once per permit term to demonstrate compliance with the formaldehyde emission limit of 1.2 pounds per ton of glass pulled per rotary spin manufacturing line in 40 CFR Part 63, Subpart NNN.

Periodic inspection, monitoring and recordkeeping requirements were incorporated into permit conditions 12144 and 15250. Permit Condition 12144 governs sources S-57, S-86 and S-87, and permit condition 15250 governs source S-26. Particulate emissions are the primary pollutant of concern from the above sources.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate.

NOx Sources

# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD Regulation 9-7-301.1	30 ppmv @ 3% O ₂ , dry, gaseous fuel	None
	BAAQMD Regulation 9-7-302.1	40 ppmv @ 3% O ₂ , dry, liquid fuel	None
	BAAQMD Regulation 9-7-305.1	150 ppmv @ 3% O ₂ , dry, 3-hr average, Natural Gas Curtailment – Non Gaseous Fuel	None
	BAAQMD Regulation 9-7-306.1	150 ppmv @ 3% O ₂ , dry, 3-hr average, Equipment Testing – Non Gaseous Fuel	None

NOx Discussion:

Compliance with Regulation 9-7-301.1:

A District approved source test was conducted by Owens Corning at S-92, a natural gas fired boiler rated at 12.2 MM BTU/hr. Test results were later reviewed and approved by the District's Source Test Section. The test results indicated a NOx concentration of 22 ppmv @ 3% O₂. This NOx emission rate is well below the NOx limit prescribed in Regulation 9-7-301.1, 30 ppmv @ 3% O₂.

Since, the source specific emission rate derived from the source test at S-92 is well below the Regulation 9-7-301.1 limit, it is concluded that periodic NOx monitoring for S-92 is not necessary when combusting natural gas.

Moreover, based on the heat input rate of 12.2 MM BTU/hr, a maximum operating time of 8760 hr/yr, and the measured concentration, the maximum emissions of NOx would be 1.4 ton/yr¹. Source testing, the usual method of periodic monitoring for NOx, is not warranted for such an insignificant source of NOx emissions.

Compliance with Regulation 9-7-302.1:

Owens Corning indicated that S-92 is fired exclusively by natural gas and diesel is only used as a standby fuel during times of natural gas curtailment. Part 5 of permit condition 10924 precludes Owens Corning from combusting non-gaseous fuels at S-92 when there is no curtailment in natural gas supply. The above condition requires that Owens Corning submit a District approved source test for review and approval by the District's Source Test Section that demonstrates compliance with the NOx limit prescribed in Regulation 9-7-302.1 before combusting non-gaseous fuels in S-92.

¹ (12.2 MM BTU/hr x 0.026 lbs/MM BTU x 8760 hrs/yr) / (2000 lbs/ton) = 1.389 TPY

In light of the above, periodic monitoring requirements for NO_x to demonstrate compliance with Regulation 9-7-302.1 are not necessary.

Compliance with Regulation 9-7-305.1 and 306.1:

The NO_x emission rate for boilers such as S-92 which have the flexibility to combust non-gaseous fuel, when there is a curtailment in natural gas supply, was taken from US EPA's AP-42, Table 1.3-1 "Criteria Pollutant Emission Factors for Fuel Oil Combustion", September 1998. Specifically, the unabated emission factors in the above table encompass boilers firing various types of fuel and which are broadly subdivided into boilers rated at greater than & less than 100 MM BTU/hr. The following discussion is limited to boilers such as S-92 that are "Distillate Oil Fired" and are rated at less than 100 MM BTU/hr. The prescribed NO_x emission rate for such boilers in AP-42 is 20 lb/1000 gallons.

The NO_x limit prescribed in Regulation 9-7-305.1 and Regulation 9-7-306.1 is 150 ppmv @ 3% O₂. In order to compare the standard emission rate prescribed in AP-42 to the above Regulation 9-7 limits, we need to convert both emission rates to an emission rate with the same metric (lb/MM BTU). We convert the Regulation 9-7 limits to lb/MM BTU by dividing the limits by 750, which results in 0.2 lb/MM BTU². One gallon of diesel contains 141,000 BTU/gallon³. Dividing the standard NO_x emission rate in AP-42 by the heating value of 1 gallon of diesel yields an emission rate of 0.1418 lb/MM BTU.

Since the AP-42 emission rate is well below the Regulation 9-7-305.1 and 9-7-306.1 limits, it is concluded that periodic NO_x monitoring for S-92 is not necessary during periods of equipment testing or during periods of natural gas curtailment.

Moreover, since the boiler will be operated infrequently in these modes, NO_x monitoring is not warranted during periods of equipment testing or during periods of natural gas curtailment.

² To convert NO_x in ppm @ 3% O₂ to lb/MM BTU for #2 and #6 oils, divide the ppm value by 750.

³ APTI Publication, Attachment 3-4 "Typical Analyses and Properties of Fuel Oils"

CO Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD Regulation 9-7-301.2	400 ppmv @ 3%O ₂ , dry, 3-hr average, Gaseous Fuel	None
	BAAQMD Regulation 9-7-302.2	400 ppmv @ 3%O ₂ , dry, 3-hr average, Non-Gaseous Fuel	None
	BAAQMD Regulation 9-7-305.2	400 ppmv @ 3%O ₂ , dry, 3-hr average, Natural Gas Curtailment – Non Gaseous Fuel	None
	BAAQMD Regulation 9-7-306.2	400 ppmv @ 3%O ₂ , dry, 3-hr average, Equipment Testing – Non Gaseous Fuel	None

CO Discussion:

Compliance with Regulation 9-7-301.2:

As previously discussed in the “NO_x Discussion” section, a District approved source test was conducted by Owens Corning at S-92, a natural gas fired boiler rated at 12.2 MM BTU/hr. Test results were later reviewed and approved by the District’s Source Test Section. The test results indicated a CO concentration of less than 2 ppmv @ 3% O₂. The above CO emission rate is well below the CO limit prescribed in Regulation 9-7-301.2, 400 ppmv @ 3% O₂.

Since, the source specific emission rate derived from the source test at S-92 is well below the Regulation 9-7-301.2 limit, it is concluded that periodic CO monitoring for S-92 is not necessary when combusting natural gas.

Compliance with Regulation 9-7-302.2:

As previously discussed in the “NO_x Discussion” section, S-92 is fired exclusively by natural gas and diesel is used only as a standby fuel during times of natural gas curtailment. Part 5 of permit condition 10924 precludes Owens Corning from combusting non-gaseous fuels at S-92 when there is no curtailment in natural gas supply. The above condition requires that Owens Corning submit a District approved source test for review and approval by the District’s Source Test Section that demonstrates compliance with the CO limit prescribed in Regulation 9-7-302.2 before combusting non-gaseous fuels in S-92.

In light of the above, periodic monitoring requirements for CO to demonstrate compliance with Regulation 9-7-302.2 is not necessary.

Compliance with Regulation 9-7-305.2 and 306.2:

The CO emission rate for boilers such as S-92 which have the flexibility to combust non-gaseous fuel, when there is a curtailment in natural gas supply, was taken from US EPA’s AP-42, Table 1.3-1 “Criteria Pollutant Emission Factors for Fuel Oil Combustion”, September 1998.

Specifically, the unabated emission factors in the above table encompass boilers firing various types of fuel and which are broadly subdivided into boilers rated at greater than & less than 100 MM BTU/hr. The following discussion is limited to boilers such as S-92 that are “Distillate Oil Fired” and are rated at less than 100 MM BTU/hr. The prescribed CO emission rate for such boilers in AP-42 is 5 lb/1000 gallons.

The CO limit prescribed in Regulation 9-7-305.2 and Regulation 9-7-306.2 is 400 ppmv @ 3% O₂. In order to compare the standard emission rate prescribed in AP-42 to the above Regulation 9, Rule 7 limits, we need to convert both emission rates to an emission rate with the same metric (lb/MM BTU). We can convert the Regulation 9, Rule 7 limits to lb/MM BTU by dividing the limit by 1,290, which results in 0.31 lb/MM BTU⁴. If we are to divide the standard AP-42 emission factor by heating value of 1 gallon of diesel, we derive an emission rate of 0.0354 lb/MM BTU.

Since, the AP-42 emission rate is well below the Regulation 9-7-305.2 and 9-7-306.2 limits, it is concluded that periodic CO monitoring for S-92 is not necessary to demonstrate compliance with the above limits.

Moreover, since the boiler will be operated infrequently in these modes, CO monitoring is not warranted during periods of equipment testing or during periods of natural gas curtailment.

⁴ To convert CO in ppm @ 3% O₂ to lb/MM BTU for #2 oil, divide the ppm value by 1,290.

SO₂ Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S -1 – “M” Furnace S-2 – “M” Forming S-3 – “M” Curing S-4 – “M” Cooling S -19 – “O” Furnace S-20 – “O” Forming S-21 – “O” Curing S-22 – “O” Cooling S-65, S-66, S-67, S-68, S-164, S-166, S-167 – Emergency Standby Diesel Generators S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD 9-1-301	Ground level concentrations of SO ₂ shall not exceed: 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None
S-2 – “M” Forming S-3 – “M” Curing S-4 – “M” Cooling S-20 – “O” Forming S-21 – “O” Curing S-22 – “O” Cooling S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD 9-1-302	300 ppm (dry)	None
S-65, S-66, S-67, S-68, S-164, S-166, S-167 - Emergency Standby Diesel Generators	BAAQMD 9-1-304	Sulfur Content in Liquid Fuel < 0.5% by weight	Fuel Oil Vendor Certification
S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD 9-1-304	Sulfur Content in Liquid Fuel < 0.5% by weight	None

SO₂ Discussion:

Compliance with Regulation 9-1-301:

The following emission calculations are presented to show that the facility will comply with Regulation 9-1-301.

“M” & “O” Line Furnaces, Forming Sections, Curing Sections and Cooling Sections:

SO₂ emissions result from melting the batch in the furnaces (S-1, S-19), the natural gas combustion at the fiberizers in the forming section and the curing ovens (S-2, S-3, S-20, S-21), the residual emissions from the cured mats in the cooling section (S-4, S-22) and the thermal decomposition of the sulfate compounds in the binder.

In-house source testing performed was performed by Owens Corning at one of their manufacturing facilities in Newark, OH, that manufactures the same types of products as Owens Corning's Santa Clara facility. Results from the test indicated the SO₂ emissions from the forming sections (similar to sources 2 and 20) and curing sections (sources 3 and 21) to be 0.54 TPY for each forming section (sources 2 and 20) and 0.49 TPY for each curing section (sources 3 and 21). Owens Corning estimated the SO₂ emissions from the cooling section (sources 4 and 22) to be at levels that are undetectable.

Emergency Standby Diesel Generators (ESDGs):

Owens Corning operates seven ESGDs. Sources 65 through 68, 164, 166 and 167 are Loss of Exemption I.C. Engines. These are sources that were previously exempt from permitting but were later required to obtain a Permit to Operate due to changes in the District's regulations. Emission factors used to estimate criteria pollutant emissions from the above sources was taken from US EPA AP-42, Table 3.3-1 "Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines", October 1996. The emission factor for SO₂ furnished in the above referenced table is 0.00205 lb/hp-hr. The PTE calculation using EPA's guidance memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995 assumes ESGDs to be similar sources and states they are unlikely to run, even in a worst case scenario, for more than 500 hours per source per year. Therefore, the potential to emit calculation are based on 500 hours per year of ESGD operation. Sources 65, 66, 67, 68, 164, 166 and 167 are rated at 220 hp, 415 hp, 449 hp, 390 hp, 900 hp, 80 hp and 162 hp, respectively.

SO₂ PTE calculations are as follows:

S-65: $(500 \text{ hr/yr}) \times (220 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.11 \text{ ton/yr}$
S-66: $(500 \text{ hr/yr}) \times (415 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.21 \text{ ton/yr}$
S-67: $(500 \text{ hr/yr}) \times (449 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.23 \text{ ton/yr}$
S-68: $(500 \text{ hr/yr}) \times (390 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.20 \text{ ton/yr}$
S-164: $(500 \text{ hr/yr}) \times (900 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.46 \text{ ton/yr}$
S-166: $(500 \text{ hr/yr}) \times (80 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.041 \text{ ton/yr}$
S-167: $(500 \text{ hr/yr}) \times (162 \text{ hp}) \times (0.00205 \text{ lb SO}_2/\text{hp-hr}) \times (1 \text{ ton SO}_2/2000 \text{ lb SO}_2) = 0.08 \text{ ton/yr}$

Boiler:

The maximum heat input of S-92 is 12.2 MM BTU/hr. Assuming a HHV of 1,050 BTU/SCF for natural gas, S-92 would consume approximately 11,619 SCF of natural gas per hour. The SO₂ emission factor for natural gas provided in US EPA AP-42, Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion", July 1998, is 0.6 lb/MM SCF. Therefore, S-92 is expected to emit approximately 0.007 lbs/hr of SO₂ emissions. Assuming S-92 operates for 24 hours per day for 365 days in a year, the Potential To Emit (PTE) and/or worst-case annual SO₂ emissions from S-92 is approximately equal to 61 lbs/yr (0.03 TPY) when combusting natural gas.

As previously discussed in the “NO_x Discussion” and “CO Discussion” sections, during times of natural gas curtailment, S-92 has the flexibility to combust diesel fuel. Part 1 of permit condition 10924 precludes Owens Corning from combusting non-gaseous fuels at S-92 with sulfur content greater than 0.2% by weight. Owens Corning had previously indicated when permitting S-92 under Application 12464 that no more than 93 gal/hr and 2,400 gal/yr of diesel would be combusted at S-92 on an hourly and annual basis, respectively. The SO₂ emission rate in US EPA AP-42, Table 1.3-1 “Criteria Pollutant Emission Factors for Fuel Oil Combustion”, September 1998, is 142*S lb/1000 gallon, where “S” is the percent weight of sulfur in the fuel. Therefore, the SO₂ emission rate can be translated to 28.4 lb/1000 gallon or 0.0284 lb/gallon of diesel. At this emission rate, S-92 will emit 2.64 lbs/hr and 68.16 lbs/yr (0.03 TPY) of SO₂ emissions on an hourly and annual basis, respectively.

Area monitoring to demonstrate compliance with the ground level SO₂ concentration requirements of Regulation 9-1-301 is at the discretion of the APCO (per BAAQMD Regulation 9-1-501). As discussed in the preceding paragraphs, Owens Corning does not have equipment that emits large quantities of SO₂ emissions and therefore the company is not required to have ground level monitoring by the APCO. Moreover, the potential emissions of SO₂ are not concentrated in one point source, but rather in a number of small sources within the plant. For comparison, the refineries in the Bay Area have SO₂ emissions ranging from 760 TPY to 6900 TPY versus a sum total of 3.45 TPY⁵ of SO₂ emissions from the sources at Owens Corning discussed in the preceding paragraphs. Refineries in the Bay Area have ground level monitors; yet they rarely exceed the 9-1-301 limits. Therefore, no periodic monitoring has been added to assure compliance with Regulation 9-1-301 for sources at Owens Corning.

Compliance with Regulation 9-1-302:

“M” & “O” Line Furnaces, Forming Sections, Curing Sections and Cooling Sections:
To ensure compliance of the emissions from the “M” and “O” line furnaces with the 300 ppm limit in Regulation 9-1-302, part 9 of permit condition 16834 requires Owens Corning to perform a District approved source test at sources 1 and 19 once per permit term.

The following discussion is limited to interpreting the results from an in-house source test conducted by Owens Corning at one of their manufacturing facilities in Newark, OH, that manufactures the same types of products as the Owens Corning Santa Clara plant in light of 300 ppm limit prescribed under Regulation 9-1-302.

The SO₂ emission rate (in lbs/hr) from the forming (similar to sources 2 and 20) and curing sections (similar to sources 3 and 21) measured during the tests were equal to 0.136 and 0.125, respectively at Owens Corning’s Newark plant. The glass pull rate during the tests was 150 TPD. Part 13 of permit condition 20565 limits the total amount of bare molten glass pulled at the “M” and “O” forming (sources 2 and 20) and curing (sources 3 and 21) sections to 135 TPD. Therefore, the SO₂ emissions measured at the Newark plant after correcting to a glass pull rate of 135 TPD, translates to 0.1224 lbs/hr per forming section (sources 2 and 20) and 0.1125 lbs/hr per curing section (sources 3 and 21), respectively at the Santa Clara facility. Owens Corning

⁵ (2 x 0.54 + 2 x 0.49) + (0.11 + 0.21 + 0.23 + 0.20 + 0.46 + 0.041 + 0.08) + (0.03 + 0.03) = 3.45 TPY

indicated the typical exhaust gas flow rates through the forming and curing sections at the Santa Clara plant are 95,000 CFM and 15,000 CFM, respectively.

The above emission rates (in lbs/hr) can be converted to ppm as follows:

$$\text{Lbs/hr} = \text{ppm}/10^6 \times \text{ft}^3/\text{min} \times 60 \text{ min/hr} \times 1 \text{ mole}/387 \text{ ft}^3 \times 64 \text{ lbs/mole}$$

Substituting the emission rates and the exhaust flow rates in the above equation, the SO₂ concentration from each individual forming section (sources 2 and 20) and each individual curing section (sources 3 and 21) is equal to 0.1298 ppm and 0.7558 ppm, respectively. Owens Corning estimated the SO₂ emissions from the cooling sections (sources 4 and 22) to be well below the above concentrations.

Therefore, it is concluded that periodic SO₂ monitoring to demonstrate compliance with the Regulation 9-1-302 is not necessary for sources 2, 3, 4, 20, 21 and 22.

Boiler:

The boiler S-92 is subject to the emission limitation in Regulation 9-1-302, which is 300 ppm. In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources such as S-92 do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since the sulfur content of natural gas is very low. Therefore, no monitoring is necessary at S-92 to demonstrate compliance with Regulation 9-1-302.

Compliance with Regulation 9-1-304:

Emergency Standby Diesel Generators (ESDGs):

Owens Corning operates seven ESDGs. As previously discussed, sources 65 through 68, 164, 166 and 167 are Loss of Exemption I.C. Engines, sources that were previously exempt from permitting but were later required to obtain a Permit to Operate due to changes in the District's regulations. Part 3 of permit condition 19142 requires Owens Corning to obtain certifications of the sulfur content in the fuel from the fuel oil vendor to demonstrate compliance with Regulation 9-1-304, which limits the sulfur content in the fuel to 0.5% by weight. Compliance with the above permit condition is a standard monitoring practice to demonstrate compliance with Regulation 9-1-304.

Boiler:

As previously discussed in the preceding sections, source 92 has the flexibility to combust diesel during times of natural gas curtailment. Part 1 of permit condition 10924 precludes Owens Corning from combusting liquid fuels at S-92 with sulfur content greater than 0.2% by weight. Compliance with the sulfur content limit in the permit condition assures compliance with the sulfur content limit of 0.5% by weight prescribed in Regulation 9-1-304. Part 3 of permit condition 10924 requires Owens Corning to obtain certifications of the sulfur content in the fuel from the fuel oil vendor to demonstrate compliance with the 0.2% sulfur content limit. Compliance with the above permit condition is a standard monitoring practice and will demonstrate compliance with Condition 10924, part 1, and Regulation 9-1-304.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-57 Batch Mixing S-86 "M" Batch Transporter Bin & Silo S-87 "O" Batch Transporter Bin & Silo	BAAQMD Permit Condition 12144, Parts 4, 6 and 10	Ringelmann 0.5 For less than 3 minutes in an hour	Visible Emissions Check
S -1 – "M" Furnace S-2 – "M" Forming S-3 – "M" Curing S-4 – "M" Cooling S -19 – "O" Furnace S-20 – "O" Forming S-21 – "O" Curing S-22 – "O" Cooling S-26 Sandblasting room S-46 Asphalt Tank # 1 S-69 "M" Line Asphalt Applicator S-70 "O" Line Asphalt Applicator	BAAQMD Regulation 6-301	Ringelmann 1.0 For less than 3 minutes in an hour	Visible Emissions Check
S-65, S-66, S-67, S-68, S-164, S-166, S-167 Emergency Standby Diesel Generators	BAAQMD Regulation 6-303	Ringelmann 2.0 For less than 3 minutes in an hour	None

PM Sources

	Emission Limit	Federally Enforceable	
S-26 Sandblasting room	BAAQMD Regulation 6-310	0.15 gr/dscf	None
S-56 Batch Materials Silo & Unloading System			
S-57 Batch Mixing			
S-61 "M" Packing Dust Collection System			
S-62 "O" Packing Dust Collection System			
S-65, S-66, S-67, S-68, S-164, S-166, S-167 Emergency Standby Diesel Generators			
S-69 "M" Line Asphalt Applicator			
S-70 "O" Line Asphalt Applicator			
S-86 "M" Batch Transporter Bin & Silo			
S-87 "O" Batch Transporter Bin & Silo			
S-90 Bad Batch Bin			
S-92 Natural Gas Fired Boiler; Standby Fuel: Diesel	BAAQMD Regulation 6-310.3	0.15 gr/dscf at 6% O2	None

PM Sources

	Emission Limit	Federally Enforceable	
S-26 Sandblasting room	BAAQMD Regulation 6-311	4.10P ^{0.67} lb/hr, where P is process weight, ton/hr	None
S-46 Asphalt Tank # 1			
S-56 Batch Materials Silo & Unloading System			
S-57 Batch Mixing			
S-69 "M" Line Asphalt Applicator			
S-70 "O" Line Asphalt Applicator			
S-86 "M" Batch Transporter Bin & Silo			
S-87 "O" Batch Transporter Bin & Silo			
S-90 Bad Batch Bin			

PM Discussion:

Compliance with the Ringelmann 0.5 Limit:

The operation of sources 57, 86 and 87 is governed by permit condition 12144. Parts 2, 6 and 10 of permit condition 12144 require Owens Corning to perform *weekly* visible emissions checks at the above sources to ensure that the Ringelmann 0.5 limit is not exceeded.

Compliance with Regulation 6-301:

The operation of “M” and “O” line furnaces 1 and 19 is governed by permit condition 16834. Part 7 of permit condition 16834 requires Owens Corning to perform *daily* visible emissions checks at the furnaces to ensure that emissions from the furnaces are below the Ringelmann 1.0 limit.

The operation of the “M” and “O” line forming sections (sources 2 and 20) and “M” and “O” line curing sections (sources 3 and 21) is governed by permit condition 20565. Part 5 of permit condition 20565 requires Owens Corning to perform *daily* visible emissions checks at the “M” and “O” line forming and curing sections to ensure that emissions from the forming and curing sections are below the Ringelmann 1.0 limit.

The operation of the “M” and “O” line cooling sections (sources 4 and 22) is governed by permit condition 20566. Part 4 of permit condition 20566 requires Owens Corning to perform *daily* visible emissions checks at the “M” and “O” line cooling sections to ensure that emissions from the cooling sections are below the Ringelmann 1.0 limit.

The operation of the “M” and “O” line asphalt applicators (sources 69 and 70) is governed by permit condition 12672. Part 4 of permit condition 12672 requires Owens Corning to perform *weekly* visible emissions checks at the “M” and “O” line asphalt applicators to ensure that emissions from the asphalt applicators are below the Ringelmann 1.0 limit.

The operation of the sandblasting room (source 26) and asphalt tank (source 46) are governed by permit conditions 15250 and 12672, respectively. Condition 15250, part 6, and Condition 12672, part 3, require Owens Corning to perform *monthly* visible emissions checks at the above sources to ensure that emissions from the sandblasting operations and the asphalt tank are below the Ringelmann 1.0 limit.

Compliance with Regulation 6-303:

The seven Emergency Standby Diesel Generators at Owens Corning, sources 65 through 68, 164, 166 and 167, are subject to the Ringelmann 2.0 limit, which is equivalent to 40% opacity, and is a very high limit. Since the engines are only operated during emergencies, and it is highly unlikely that emissions from the above sources will exceed the Ringelmann 2.0 limit, no periodic monitoring for visible emissions is recommended.

Compliance with Regulation 6-310 and/or 6-311:

Sandblasting Room:

Particulate emissions resulting from sandblasting of fouled equipment conducted at S-26 is abated by baghouse A-146 with an exhaust flow rate capacity of 15,000 CFM. Under App. 16821, which Owens Corning had submitted prior to replacing baghouse A-29 with A-146, the District permitted A-146 with a maximum outlet grain loading of 0.015 gr/dscf. Since the above outlet grain loading is well below the Regulation 6-310 limit of 0.15 gr/dscf and the equipment is designed to operate below 0.015 gr/dscf, it is concluded that no periodic monitoring to demonstrate compliance with the above limit is necessary.

The post-control emissions that would result from the above outlet grain-loading rate is equal to:
= 0.015 gr/ ft³ x 15,000 ft³/min x lb/7000 gr x 60 min/hr
= 1.93 lbs/hr

Regulation 6-311 limits the emission rate of general particulate operations by the following equation:

$$E = 0.026 * P^{0.67};$$

Where, E is the Actual Emission Rate (in lb/hr) and P is the Actual Process Rate (in lbs/hr). From Table II-A in the permit it can be seen that S-26 can process up to 6 tons/hr of fouled equipment.

$$\text{Therefore, } E = 0.026 * 12,000^{0.67} = \underline{14.06 \text{ lbs/hr}}$$

It can be seen from above that the hourly post-control emissions estimated using the outlet grain-loading rate of 0.015 gr/ ft³, is well below the actual emission rate “E” derived from the above equation. Therefore, it is concluded that periodic PM monitoring to demonstrate compliance with the Regulation 6-311 is not necessary.

In addition, the monthly visible emissions checks that are performed for the purpose of complying with Regulation 6-301 will ensure that the device is operating as designed.

Asphalt Tank:

The AP-42 formulae for estimating storage (L_s) and working (L_w) losses from a tank similar to S-46 is as follows:

$$L_s = 365 \times V_v \times W_v \times K_e \times K_s \text{ (lb/year) and}$$

$$L_w = 0.001 \times M_v \times P_{va} \times Q \times K_n \times K_p \text{ (lb/year)}$$

Where,

V_v – Vapor Space Volume (ft³)

W_v – Vapor Density (lb/ft³)

K_e – Vapor Space Exp Factor

K_s – Vented Vapor Saturation Factor

M_v – Vapor Molecular Weight

P_{va} – Vapor Pressure (psia)

Q – Throughput (bbl/year)

K_n – Turnover Factor

K_n = 1 if ≤ 36 turnovers/year; K_n = (180 + N) / 6N if > 36 turnovers/year, where N is the number of turnovers/year.

K_p – Product Factor

The following assumptions were made to estimate the VOC and PM emissions from S-46⁶:

$V_v = 7,854 \text{ ft}^3$; $W_v = 0.00388 \text{ lb/ft}^3$; $K_e = 0.0078$; $K_s = 0.7369$; $M_v = 84 \text{ lb/lb mol}$;

$P_{va} = 0.421 \text{ psia}$; $Q = 6,447 \text{ bbl/year}$; $K_n = 1.0$; Turnover Factor; $K_p = 1.0$

Therefore, the total uncontrolled VOC emissions from S-46 is equal to 291.92 lbs/yr i.e. sum of the storage loss $L_s = 63.93 \text{ lbs/yr}$ and working losses $L_w = 227.99 \text{ lbs/yr}$.

Owens Corning determined through in-house testing and analysis that the VOC/PM compositional makeup of asphalt emissions from S-46 to be 78% VOC and 22% PM. Therefore, the annual PM emissions from S-46 is equal to: $291.92 \text{ lbs VOC/yr} \times 0.22 \text{ PM}/0.78 \text{ VOC} = 82.34 \text{ lbs PM/yr}$ (0.04 TPY)

In light of the small quantity of PM emissions from the asphalt tank discussed above, periodic monitoring to demonstrate compliance with the Regulation 6-311 limit is not recommended.

Batch Materials Silo & Unloading System:

Raw batch transfer operations are conducted at S-56. For lack of an emission factor for PM10 in US EPA AP-42, Chapter 11.13 “Glass Fiber Manufacturing”, September 1985, the PM emissions from S-56 are estimated using data previously provided by Owens Corning⁷.

The annual PM emissions are estimated by the following equation:

$$E = N \times P/2000 \times k \times 0.0032 \times U/M \times C;$$

Where,

E – Emissions in TPY; N – Number of transfer points; P – Production in TPY;

k – particle size multiplier (0.74); U – Wind Speed Factor⁸ (2.81); M – Moisture Factor⁹ (0.04);

C – Control Factor¹⁰ (0.10)

There are three transfer points at S-56 i.e. railcar or truck to auger, auger to distributor, and distributor to batch house bin¹¹. Hence, “N” is assumed to be equal to 3. Throughput information submitted by Owens Corning for S-56 in their year 2000, 2001, 2002 and 2003 annual updates to the District were 101,675 TPY, 85,343 TPY, 90,380 TPY and 86,747 TPY. The value of “P” is assumed to be the average of the aforementioned throughputs i.e. 91,036 TPY. Therefore, $E = 2.27 \text{ TPY}$.

Assuming it takes 1 hour per truck and/or rail car to unload 25 tons of raw materials, it is estimated S-56 may have operated for approximately 3,640 hours. Therefore, the hourly PM emission rate at S-56 is equal to: $2.27 \text{ tons/yr} \times 2000 \text{ lbs/ton} / 3640 \text{ hrs/yr} = 1.25 \text{ lbs/hr}$.

⁶ Based on information included by OC in the July 1999 “Revised” MFR Permit Application.

⁷ Emissions were estimated using the Texas Commission on Environmental Quality (TCEQ), formerly known as the Texas Natural Resource Conservation Commission (TNRCC), “Emission Calculation Instructions for Concrete Batch Plants”, TACB, Mechanical Section, June 15, 1993. Please note that the TCEQ does not list the above document on its website anymore.

⁸ Based on an average wind speed of 11.6 mph. Based on 1989-1992, San Francisco, CA weather data.

⁹ Based on 0.2% moisture in batch material.

¹⁰ Per TNRCC guidance document.

¹¹ Based on information included by OC in the July 1999 “Revised” MFR Permit Application.

If we are to conservatively assume an outlet grain loading rate of 0.08 gr/ft³ at A-44, coupled with the small quantity of PM emissions from S-56, it is safe to conclude that periodic monitoring to demonstrate compliance with the Regulation 6-310 and 6-311 limits is not necessary.

Batch Mixer, Batch Transporter & Silo, and Bad Batch Bin:

Sources 57, 86, 87 and 90 are associated with preparing the mixed glass batch, transporting this mixed batch from the preparation process to running bins that are located on the roof of the plant and charging it into the “M” & “O” line furnace charger feed hoppers.

Processes that are part of S-57 - “Batch Mixing”, include a scale system that weighs individual glass batch ingredients, a mixer that blends all of the weighed ingredients, a belt conveyor that transports the mixed batch into a pneumatic conveyor and a minor ingredient charging station. The above systems that are part of S-57 generate dust that is ventilated to a common dust collector A-48. This dust collector also services a dust ventilation system that is fitted to the furnace batch charger feed hoppers that are filled from S-86 and S-87, Batch Transporter Bins & Silos.

Sources 86 and 87 are mixed batch storage/running bins that supply the “M” and “O” Furnaces. Mixed glass batch is delivered to S-86 and S-87 via pneumatic conveyors that are "treated" by dust collectors A-34 and A-35, whose primary function is to serve as receivers/filters for the batch conveying system.

Source 90 is a bin that receives and stores mixed batch that does not meet some sort of quality and/or product specification. Like S-86 and S-87, S-90 is filled with a pneumatic conveyor that has an associated receiver/filter, A-38.

The District performed a source test in July 2001 at sources S-57, S-86 and S-87, which are abated by baghouses A-48, A-34 and A-35, respectively. Hence, the emissions from the above sources are discussed together. The source test revealed that the average outlet grain loading rate at A-48, A-34 and A-35 was less than 0.002 gr/dscf and that the post-control PM emissions from the above baghouses was less than 0.2 lbs/hr. In light of the District’s source test results, it is highly unlikely that the outlet grain loading rate at and the post-control PM emissions from A-38 will exceed 0.002 gr/dscf and 0.2 lb/hr, respectively.

As previously discussed in the “Sandblasting Room” section, since the outlet grain loading rate measured during the source test is well below the Regulation 6-310 limit of 0.15 gr/dscf, it is concluded that no periodic monitoring to demonstrate compliance with the above limit is necessary.

As previously discussed in the “Sandblasting Room” section, Regulation 6-311 limits the emission rate of general particulate operations by the following equation:

$$E = 0.026 * P^{0.67};$$

Where, E is the Actual Emission Rate (in lb/hr) and P is the Actual Process Rate (in lbs/hr).

From Table II-A in the permit it can be seen that sources 57, 86, 87 and 90 can process up to 18 tons/hr of material per source.

$$\text{Therefore, } E = 0.026 * 12,000^{0.67} = \underline{29.36 \text{ lbs/hr}}$$

It is inferred from the preceding paragraphs that the hourly post-control emissions estimated from the source test i.e. 0.2 lbs/hr, is well below the actual emission rate “E” derived from the above equation. Therefore, it is concluded that periodic PM monitoring to demonstrate compliance with the Regulation 6-311 is not necessary.

In addition, the weekly visible emissions checks that are performed for the purpose of complying with Regulation 6-301 will ensure that the device is operating as designed.

“M” & “O” Line Packing Dust Collection System:

Sources 61 and 62 are abated by A-40, a 30,000 CFM penclone. In-house tests performed by Owens Corning at one of their manufacturing plants revealed an average PM emission rate of 0.213 lbs/hr.

The above information was used to derive an outlet grain loading rate as follows:
 $(0.213 \text{ lbs/hr} \times 7000 \text{ gr/lb} \times 1 \text{ hr}/60 \text{ min}) / (30000 \text{ ft}^3/\text{min}) = 0.0008 \text{ gr/ft}^3$

Since the above grain loading rate is well below the Regulation 6-310 limit, no periodic monitoring to assure compliance with the limit is necessary.

Emergency Standby Diesel Generators (ESDG):

Owens Corning operates seven ESDGs, sources 65 through 68, 164, 166 and 167 rated at 220 hp, 415 hp, 449 hp, 390 hp, 900 hp, 80 hp and 162 hp, respectively. Emission factors used to estimate criteria pollutant emissions from the above sources, except for S-164, were taken from US EPA AP-42, Table 3.3-1 “Emission Factors For Uncontrolled Gasoline and Diesel Industrial Engines”, October 1996. The emission factor of 0.0022 lb/hp-hr is applicable to sources 65 through 68, 166 and 167, which are rated at less than 600 hp. An emission factor of 0.0007 lb/hp-hr provided in US EPA AP-42, Table 3.4-1 “Gaseous Emission Factors For Large Stationary Diesel And All Stationary Dual-Fuel Engines”, October 1996, for engines rated at greater than 600 hp was used to estimate PM emissions from S-164.

Regulation 6-310 limits Filterable PM (PM) emissions to 0.15 gr/dscf. In order to compare the standard emission rate prescribed in AP-42 to the Regulation 6-310 limit, we need to convert both emission rates to an emission rate with the same metric (lb/MM BTU).

We convert Regulation 6-310 as follows:

The F_d -Factor for PM furnished in 40 CFR Part 60, Appendix A, Method 19 for Crude, Residual, or Residual Oil is 9,190 dscf/MM BTU. Please note that an “F” factor is the ratio of the gas volume of the products of combustion to the heat content of the fuel. Therefore, the emission rate “E”

$$= (9190 \text{ dscf/MMBTU} * 0.15 \text{ gr/dscf}) / (7000 \text{ gr/lb}) \\ = \underline{0.1969 \text{ lb/MMBTU}}$$

As an example, for S-65, the AP-42 emission factor (in lbs/hp-hr) is converted to lbs/MMBTU as follows¹²:

$$[(0.0022 \text{ lb/hp-hr} * 220 \text{ hp}) / (40 \text{ gal/hr} * 141000 \text{ BTU/gal})] * (10^6 \text{ BTU/MMBTU})$$

¹² Assuming a average worst-case fuel consumption rate of 40 gallons/hr for all ESDGs.

= 0.09 lb/MMBTU

In similar fashion, the emission rates for sources 66, 67, 68, 164, 166 and 167 are 0.16 lb/MMBTU, 0.18 lb/MMBTU, 0.15 lb/MMBTU, 0.11 lb/MMBTU, 0.03 lb/MMBTU and 0.06 lb/MMBTU, respectively.

Since, the AP-42 emission rates are well below the Regulation 6-310 limit, it is concluded that periodic PM monitoring for ESDGs at Owens Corning is not necessary.

Asphalt Applicators:

An in-house testing and analysis of asphalt emissions from the “M” & “O” line asphalt applicators (S-69, S-70) and flexographic printing operations (S-157, S-158) performed by Owens Corning revealed a VOC emission rate of 1.415 lb/hr per RS line. Owens Corning determined the VOC/PM compositional makeup of asphalt emissions from the above operations to be 78% VOC and 22% PM.

Assuming each line operates for 8,760 hours/yr, the worst-case pre-control PM emissions from each asphalt applicator is equal to:

$$1.415 \text{ lb VOC/hr} \times 0.22 \text{ PM/0.78 VOC} \times 8760 \text{ hr/yr} = 3,496 \text{ lbs PM/yr (1.75 TPY)}$$

Fiberbed Filters A-150 and A-70 abate sources 69 and 70, respectively. The Fiberbed Filters have a 99.5% removal efficiency for liquid mist and soluble solids to sub micron size. Therefore, the post-control PM emissions from each asphalt applicator is equal to:

$$1.75 \text{ TPY} \times (1-0.995) = 0.009 \text{ TPY (17.5 lbs/yr)}$$

In light of the small quantity of PM emissions from the asphalt applicators discussed above, periodic monitoring to demonstrate compliance with the Regulation 6-310 and 6-311 limits is not recommended.

BAAQMD Regulation 6-310.3:

Boiler:

Exceedances of the grain loading standards in Regulation 6-310.3 are normally not associated with combustion of gaseous fuels, such as natural gas. Source 92 burns natural gas exclusively, and uses diesel as a standby fuel. Therefore, per the EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is necessary to assure compliance with this limit for S-92.

As previously discussed in the “NOx Discussion”, “CO Discussion” and “SO2 Discussion” sections, during times of natural gas curtailment, S-92 has the flexibility to combust diesel fuel. The PM emission rate prescribed in US EPA AP-42, Table 1.3-1 “Criteria Pollutant Emission Factors for Fuel Oil Combustion”, September 1998 is 2 lb/1000 gallons. The above emission rate is converted to a grain loading rate to verify if periodic visible emission monitoring is warranted¹³.

¹³ HHV of Natural Gas = 1,050 BTU/scf; 1 gal of diesel = 141,000 BTU. Therefore, approximately 134 scf of natural gas equals 1 gal of diesel.

This is accomplished as follows, using the F-factor of 9,190 dscf/10⁶ btu, from EPA Method 19 (9,190 dscf are generated whenever one million btu of fuel oil are burned):
 = (2 lbs/1000 gal diesel * 1 gal diesel/141,000 BTU * 7000 gr/lb * 10⁶ btu/9190 dscf =
 = 0.0108 gr/dscf

Regulation 6-310.3 limits Filterable PM (PM) emissions from “heat transfer operations” to 0.15 gr/dscf @ 6% O₂. At 6% O₂, the concentration is lower as follows:
 0.0108 gr/dscf * [(20.9 - %O_{2d}) / 20.9] =
 0.0108 gr/dscf * [(20.9 - 6) / 20.9] = 0.0108 gr/dscf * 0.723 = 0.0078 gr/dscf
 where 20.9 is the concentration of oxygen in air.

Since, the AP-42 emission rate is well below the Regulation 6-310.3 limit, it is concluded that periodic PM monitoring for S-92 is not necessary.

Lead Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S -1 – “M” Furnace S -19 – “O” Furnace	BAAQMD Regulation 11-1-302	Ground Level Concentration not to exceed 1.0 ug/cubic meter, 24 hr. avg.	Case by Case

Lead Discussion:

Lead emissions can be expected from the “M” and “O” RS line furnaces, S-1 and S-19, respectively. As previously discussed in Section VI “Permit Conditions”, Owens Corning is required per permit condition 16834 to perform a District approved source test once per permit term to demonstrate compliance with Regulation 11, Rule 1, Section 301. The District will make a decision on a case by case basis, based on the test results submitted by Owens Corning to see if additional monitoring is warranted to ensure compliance with Regulation 11-1-302.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A

provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has the first type of permit shield.

This permit has no streamlining.

Following is the detail of the permit shields that were requested by the applicant.

Table VII – A
S -1 – “M” ELECTRIC FURNACE, CHANNEL, AND FOREHEARTH
S-19 – “O” ELECTRIC FURNACE, CHANNEL, AND FOREHEARTH

Citation	Title or Description (Reason not applicable)
BAAQMD Regulation 9, Rule 12: 9-12-110.1	Nitrogen Oxides From Glass Melting Furnaces (The standard does not apply to electrically powered glass melting furnaces)
40 CFR Part 60, Subpart CC: 60.290 (c)	Standards of Performance for Glass Manufacturing Plants (The standard does not apply to all-electric melters)

Table VII – B
S - 2 – “M” FORMING
S-4 – “M” COOLING
S-20 – “O” FORMING
S-22 – “O” COOLING

Citation	Title or Description (Reason not applicable)
40 CFR Part 60, Subpart PPP: 60.680 (a)	Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (The standard does not apply to rotary spin wool manufacturing lines constructed before February 7, 1984)

Table VII – C
Permit Shield for Non-applicable Requirements
S-3 – “M” CURING OVEN
S-21 – “O” CURING OVEN

Citation	Title or Description (Reason not applicable)
BAAQMD Regulation 8, Rule 1: 8-1-110.3	General Provisions (Sources S-3 and S-21 are part of a continuous process – rotary spin manufacturing line, and incinerators abate the organic compound emissions from S-3 and S-21. The standard does not apply because the emissions from the sources are expected to comply with the requirements in Regulation 8, Rule 2)
BAAQMD Regulation 9, Rule 7: 9-7-110.6	Nitrogen Oxides and Carbon Monoxide From Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (The standard does not apply to ovens used for drying and heat treating)
40 CFR Part 60, Subpart PPP: 60.680 (a)	Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants (The standard does not apply to rotary spin wool manufacturing lines constructed before February 7, 1984)

Table VII – D
Permit Shield for Non-applicable Requirements
S-33 – PROCESS/GROUNDWATER STORAGE SURGE TANK
S-149 – OPEN TOP GROUNDWATER STORAGE/SURGE TANK
S-150 - OPEN TOP GROUNDWATER STORAGE/SURGE TANK
S-159 – PUMP SEAL COOLING WATER STORAGE TANK
S-160 – BINDER RED DYE TANK

Citation	Title or Description (Reason not applicable)
BAAQMD Regulation 8, Rule 5: 8-5-117	Storage of Organic Liquids (The standard does not apply to tanks storing organic liquids with a true vapor pressure less than or equal to 0.5 psia)
40 CFR 60, Subpart Kb: 60.110 b (a)	Standards for Performance of Volatile Organic Liquid Storage Vessels (Including Petroleum Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (The liquid storage capacities of tanks S-33, S-149 and S-150 are greater than 10,566 gallons or 40 m ³ . However, the tanks do not store volatile organic liquids. The liquid storage capacities of tanks S-159 and S-160 are less than 40 m ³ and therefore are exempt from complying with the rule)

Table VII – E
Permit Shield for Non-applicable Requirements
S-46 – ASPHALT TANK # 1 (WOOL)

Citation	Title or Description (Reason not applicable)
BAAQMD Regulation 8, Rule 5: 8-5-117	Storage of Organic Liquids (The standard does not apply to tanks storing organic liquids with a true vapor pressure less than or equal to 0.5 psia)

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

A May 13, 2003 office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of Owens Corning, Santa Clara Plant (Site #: A0041). The Compliance and Enforcement Division staff has reviewed the records for Owens Corning for the period between 5/1/02 through 4/30/03. This review was initiated as part of the District evaluation of an application by Owens Corning for a Title V permit. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued during this review period.
- The District received two alleged odor complaints that were unconfirmed.
- The facility is not operating under a Variance or an Order of Abatement from the District Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

The owner certified that all equipment was operating in compliance on October 24, 1995. No non-compliance issues have been identified to date.

F. Differences between the Application and the Proposed Permit:

The Title V permit application was originally submitted on October 24, 1995. This version is the basis for constructing the proposed Title V permit.

Table 1 summarizes the list of sources that were part of the original permit application.

Table 1	
Sources Included In The Original Application (# 25819)	
Source #	Source Description¹⁴
1	“M” Electric Furnace
2	“M” Forming
3	“M” Curing Oven
4	“M” Cooling
19	“O” Electric Furnace
20	“O” Forming
21	“O” Curing Oven
22	“O” Cooling
56	Batch Materials Unloading System (Batch Materials Unloading and Storage System)
57	Batch Silo and Mixing (Batch Mixing System and Batch Pneumatic Transport)
69	“M” Line Asphalt Applicator
70	“O” Line Asphalt Applicator
86	“M” Transporter Bin
87	“O” Transporter Bin
90	BB Batch Transporter Bin
92	Nebraska Boiler
NA	“M” Brander
NA	“O” Brander
NA	Industrial Washwater System

¹⁴ Consistent with source descriptions included in the App. 25819

Table 2 summarizes the list of sources that are part of the proposed permit application.

Table 2	
Sources Included In The Proposed Permit	
Source #	Source Description¹⁵
1	“M” Electric Furnace, Channel, and Forehearth
2	“M” Forming - Rotary Spin, Firing Natural Gas
3	“M” Curing Oven, Firing Natural Gas
4	“M” Cooling
19	“O” Electric Furnace, Channel, and Forehearth
20	“O” Forming - Rotary Spin, Firing Natural Gas
21	“O” Curing Oven, Firing Natural Gas
22	“O” Cooling
26	Sandblasting Room
33	Process/Groundwater Storage Surge Tank
46	Asphalt Tank #1 (Wool)
50	Resin Tank #1 (East) Phenol-Formaldehyde Resin - Aqueous
51	Resin Tank #2 (West) Phenol-Formaldehyde Resin - Aqueous
56	Batch Materials Silo & Unloading System
57	Batch Mixing
61	‘M’ Packing Dust Collection System
62	‘O’ Packing Dust Collection System
65	Fire System Diesel Pump
66	EM-3 Standby Diesel Generator
67	'O' Line Standby Diesel Generator
68	'M' Line Standby Diesel Generator
69	‘M’ Line Asphalt Applicator
70	‘O’ Line Asphalt Applicator
86	“M” Batch Transporter Bin & Silo
87	“O” Batch Transporter Bin & Silo
90	Bad Batch Bin
92	Nebraska Boiler Firing Natural Gas; Standby Fuel: Diesel
149	Open Top Groundwater Storage/Surge tank
150	Open Top Groundwater Storage/Surge tank
155	‘M’ Line, Ink Jet Printing System
156	‘O’ Line, Ink Jet Printing System
157	‘M’ Machine Flexographic Bldg. Insulation Printers (3 printers)
158	‘O’ Machine Flexographic Printers (5 printers)
159	Pump Seal Cooling Water Storage Tank
160	Binder Red Dye Tank

¹⁵ Source Descriptions may vary from source descriptions in the original application

Source #	Source Description¹⁵
161	Premix Tank, T-19
162	Premix Tank, T-20
163	Maintenance Paint Shop Spray Booth
164	Boilerhouse Standby Diesel Generator
166	Cullet Water Standby Diesel Generator
167	Cooling Water Standby Diesel Generator

MACT Applicability:

The National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing - 40 CFR Part 63, Subpart NNN (MACT NNN) came into effect after the original application was received by the District. MACT NNN is applicable to the “M” & “O” line glass melting furnaces (S-1 and S-19) and the “M” & “O” Rotary Spin (RS) wool fiberglass manufacturing lines (S-2, S-3, S-4, S-20, S-21, S-22) which are used by Owens Corning to produce bonded wool fiberglass building insulation products.

MACT NNN is geared to limit the emissions of the following HAPs at wool fiberglass manufacturing facilities:

- Metals: Arsenic, Chromium and Lead
- Organic HAPs: Formaldehyde, Phenol and Methanol

40 CFR Part 63.1382(a)(1) limits the PM emissions from S-1 and S-19 to 0.5 lb of PM per ton of glass pulled. A District approved source test conducted by Owens Corning in August 2002 to demonstrate compliance with MACT NNN showed an average PM emission rate of 0.281 lb/ton of bare glass pulled at S-1 and 0.180 lb/ton of bare glass pulled at S-19, respectively.

40 CFR Part 63.1382(a)(2)(i) limits the formaldehyde emissions from the “M” RS line (S-2, S-3 & S-4) and “O” RS line (S-20, S-21 & S-22) to 1.2 lb of formaldehyde per ton of glass pulled per RS line. Worst-case formaldehyde emissions estimated by Owens Corning for the “M” & “O” RS lines was 0.654 lb/ton of glass pulled for the “M” RS line and 0.688 lb/ton of glass pulled for the “O” RS line, respectively.

APPENDIX A
BAAQMD COMPLIANCE REPORT

APPENDIX B
GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority that allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CAPCOA

California Air Pollution Control Officers Association

CEQA

California Environmental Quality Act

CFR

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO

Carbon Monoxide

Cumulative Increase

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

dscf

Dry Standard Cubic Feet

EPA

The federal Environmental Protection Agency.

Excluded

Not subject to any District regulations.

Federally Enforceable, FE

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

Fiberizer

Device that makes glass fibers from molten glass by using the rotary spin process

FP

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

HAP

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

Major Facility

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MFR

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MOP

The District's Manual of Procedures.

NAAQS

National Ambient Air Quality Standards

NESHAPS

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC

Non-methane Hydrocarbons (Same as NMOC)

NMOC

Non-methane Organic Compounds (Same as NMHC)

NO_x

Oxides of nitrogen.

NSPS

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

Offset Requirement

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM10

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

SIP

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2

Sulfur dioxide

THC

Total Hydrocarbons (NMHC + Methane)

Title V

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC

Total Organic Compounds (NMOC + Methane, Same as THC)

TPH

Total Petroleum Hydrocarbons

TRMP

Toxic Risk Management Plan

TSP

Total Suspended Particulate

VOC

Volatile Organic Compounds

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m ²	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year