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INTEL CORPORATION
ATTN: SETH FRONK
5000 W CHANDLER BLVD. MS CH7-332
CHANDLER, AZ 85226-3601

The purpose of the letter is to inform you that the application for a permit revision has been approved and will be incorporated into your Air Quality Permit. The applicable Permit Conditions are enclosed with this letter.

If you need assistance with the permit, please contact the Small Business Assistance Coordinator office at 602.506.5102 or contact the undersigned at 602.506.7248. Email communications may be sent to AQPermits@maricopa.gov.

MARICOPA COUNTY AIR QUALITY DEPARTMENT

Engineering and Permitting Division

3800 N. Central Avenue, Suite 1400, Phoenix, Arizona 85012

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AIR QUALITY PERMIT TO OPERATE AND/OR CONSTRUCT

(As required by Title 49, Chapter 3, Article 2, Section 49-480, Arizona Revised Statutes)

ISSUED TO

**Intel Corporation
5000 W Chandler Blvd.
Chandler, AZ 85226-3601**

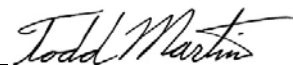
This air quality permit to operate and/or construct does not relieve the applicant of the responsibility of meeting all air pollution regulations.

THE PERMITTEE IS SUBJECT TO THE SPECIFIC AND GENERAL CONDITIONS IDENTIFIED IN THIS PERMIT.

FACILITY NUMBER: F000702 **LEGACY PERMIT NUMBER:** 970053

PERMIT NUMBER: P0007777 **REVISION DATE:** 03/11/2021

EXPIRATION DATE: 03/31/2024



Todd Martin, Non-Title V Permit Supervisor

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Any cited regulatory paragraphs or section numbers refer to the version of the rules and regulations that were in effect on the first date of public notice of the applicable Permit Condition unless specified otherwise. However, in the event the rules and regulations are amended during the term of this Permit, the amended rules and regulations shall apply to this Permit. Whenever the term, Control Officer, is used in this Permit it shall be interpreted to mean, Control Officer or designated representative. Where the term "Rule" appears, it shall be construed to mean "Maricopa County Air Pollution Control Regulations" unless otherwise noted.

SPECIFIC CONDITIONS

1. Allowable Emissions:

- a. The Permittee shall not allow facility-wide emissions into the atmosphere in excess of any of the following:

	Twelve Month Rolling Total Emission Limits
Volatile Organic Compounds (VOC)	75,100 Pounds
Nitrogen Oxide (NO _x)	79,900 Pounds
Carbon Monoxide (CO)	47,200 Pounds
Particulate Matter <10 Micron Diameter (PM ₁₀)	14,900 Pounds
Particulate Matter <2.5 Micron Diameter (PM _{2.5})	12,400 Pounds
Sulfur Oxides (SO _x)	1,100 Pounds
Total Hazardous Air Pollutants (HAPs)	7,631 Pounds
Any Single Hazardous Air Pollutant (HAP)	2,361 Pounds

- b. The Permittee shall not emit more than 49,920 pounds of VOC per 12 consecutive-month period from all photoresist operations combined, measured prior to any emission control device.
- c. The Permittee shall limit VOC emissions from ethanol-containing materials in the CH-1 Building deflux tool (DLX001) used for semi-conductor manufacturing to no more than 7.25 tons per 12 consecutive-month period.
- d. The 12-month rolling emissions for the following categories shall be calculated monthly within 45 days following the end of each calendar month by summing the emissions over the most recent 12 calendar months. The Permittee shall keep this emission record on-site for inspection or submittal upon request:
- i. Total facility-wide emissions;
 - ii. Uncontrolled VOC emissions from photoresist operations alone; and
 - iii. VOC emissions from ethanol-containing materials in the CH-1 Building deflux tool (DLX001) used for semi-conductor manufacturing.

[Rule 338 §502.3] [Rule 220 §302.2]

2. Emission Calculation Methods:

- a. Unless otherwise specified in this Permit Condition, evaporative and aerosol emissions shall be calculated using emission factors derived from tool-based test results using the Fourier Transform Infrared Spectroscopy (FTIR) method or calculated by using mass balance, mass-transfer-based correlations for open liquid surfaces, or methods published by the EPA.
- b. VOC emissions from the formic acid reflow (FAR) ovens may assume a VOC control efficiency based on the results of performance testing conducted in accordance with Permit Condition 9. The control credit applies to each FAR oven that is vented to catalytic oxidizers for which adequate maintenance and calibration (AMC) is demonstrated. The VOC control efficiency shall be based upon the lowest catalyst temperature used during the performance testing.

- c. VOC emissions from ethanol-containing materials used in the CH-1 Building deflux tool (DLX001) for semiconductor manufacturing shall initially assume that all VOC from such purchased material is emitted on site (purchase = emitted). Upon approval of the Control Officer, a process specific emission factor may be used.
- d. When available, emissions from boilers, generators, and microturbines shall be calculated using manufacturer's data. In the absence of manufacturer's data, emissions shall be calculated in accordance with EPA factors. SO_x emissions from diesel-fueled boilers and engines shall be calculated using the fuel sulfur-based emission factors from AP-42 Tables 1.3-1 and 3.4-1, respectively, rather than manufacturer's data.
- e. Particulate emissions from each set of cooling towers shall be calculated using the following equations unless the use of different factors is requested by the Permittee in writing and approved by the Control Officer:

$$\text{PM}_{10} \left(\frac{\text{lb}}{\text{mo}} \right) = \text{Water flowrate (gals/mo)} \times \text{TDS (ppm)} \times \left(8.345 \frac{\text{lb}}{\text{gal}} \right) \times (\% \text{ drift}/100) \times \left(0.313 \frac{\text{PM}_{10}}{\text{PM}} \right) \times (10^{-6} \text{ ppm})$$

$$\text{PM}_{2.5} \left(\frac{\text{lb}}{\text{mo}} \right) = \text{PM}_{10} \left(\frac{\text{lb}}{\text{mo}} \right) \times 0.6$$

In lieu of tracking the actual monthly flowrate of water for each set of towers, the Permittee may estimate the monthly flowrate based on the monthly operating time and maximum capacity (gpm) of each set of towers. If this alternative is used, the Permittee must provide documentation showing the maximum capacity for each cooling tower system and track monthly operating hours for each set of towers.

[Rule 338 §502.3.b][SIP Rule 220 §302.2]

3. Opacity

- a. No person shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity for a period aggregating more than three minutes in any 60-minute period.
- b. If any non-compliant visible emissions (excluding water vapor) are detected or reported, the Permittee shall determine the cause and/or the source of emissions. The Permittee shall then take immediate corrective action(s) and if necessary, shut down the applicable equipment. If visible emissions (excluding water vapor) exceed the above opacity standards subsequent to implementing corrective action(s), the Permittee shall shut down the applicable equipment and institute repairs or changes necessary to ensure compliance prior to resuming operations.
- c. Compliance with the opacity requirement shall be determined by observations of visible emissions conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203B.

[SIP Rule 300 §§301, 501]

SEMICONDUCTOR MANUFACTURING

4. Emission Abatement Devices:

The Permittee shall submit an O&M Plan or demonstrate Adequate Maintenance and Calibration (AMC) for each control device installed during the term of this Permit for which an emission reduction credit is taken, within 45 days of the equipment receiving exhaust from semiconductor process tools. O&M Plans and AMC demonstrations shall be prepared in accordance with the Department guidance document "Optional Compliance Demonstrations, A Guideline for Semiconductor Industry, Part II, Procedure to Determine Requirement for Operation and Maintenance Plan" dated June 4, 2001 or the most current approved version.

[Rule 220 §302.2; Rule 241 §302]

5. Limitations for Solvent Cleaning Stations:

The Permittee shall not operate a solvent cleaning station that cleans semiconductor devices with solvents containing more than 10% VOC content by weight, excluding wipe cleaning, unless each of the following

requirements are satisfied:

- a. Each heated or unheated reservoir, sink, or container that transfers, stores, or holds VOC-containing material shall be provided with a full cover. A cover shall remain closed except while production, sampling, maintenance, or loading or unloading procedures require operator access;
- b. All heated or unheated reservoirs and sinks holding VOC-containing materials with a total VOC vapor-pressure exceeding 33 mmHg at 20°C (68°F) shall have a freeboard ratio greater than or equal to 1.0; and
- c. Solvent flow of VOC-containing materials shall be applied in a continuous unbroken stream and in a manner which shall prevent liquid loss resulting from splashing.

[Rule 338 §302.1]

6. Limitations for Cleanup Solvents:

VOC containing solvents used to clean semiconductor manufacturing equipment, excluding wipe cleaning, shall meet one of the following requirements:

- a. The VOC content of the solvent shall not exceed 200 g/l (1.7 lbs/gallon);
- b. The VOC composite partial pressure shall not exceed 33 mm Hg at 20°C (68°F); or
- c. The components being cleaned are totally enclosed during washing, rinsing, and draining such that no greater than 50 ppm (220 mg/m³) of VOC emissions are detected using the method as defined in Rule 338 §503.5.

[Rule 338 §302.2]

7. Other Solvent Cleaning Requirements:

The Permittee shall comply with the requirements of Rule 331 for solvent cleaning of equipment or parts that is performed for purposes other than semiconductor manufacturing processes.

[Rule 338 §403]

8. VOC Containment and Disposal:

The Permittee shall take all reasonable measures to keep VOCs from leaking or evaporating into the atmosphere including, but not limited to:

- a. All active process equipment in which VOC-containing materials are used shall be operated and maintained in proper working order.
[Rule 338 §304.1]
- b. Liquids containing more than 0.2% VOC that leak at a rate of 3 drops per minute or more shall be repaired within 24 hours of detection, or the equipment shall be shut down until replaced or repaired according to the following schedule: Shut down prior to the next line shut down or within 24 hours of detection, whichever comes first.
[Rule 338 §304.2]
- c. All storage of VOC-containing materials subject to evaporation, including the storage of waste solvent and waste solvent residues, shall at all times be in closed containers, except when contents are added or removed.
[Rule 338 §305.1]
- d. Solvent-soaked rags used for wipe cleaning shall be stored in closed containers when not in use.
[Rule 330 §306.1]
- e. Containers shall be legibly labeled with their contents.
[Rule 338 §305.2; Rule 330 §306.2]
- f. Disposal of waste or surplus VOC-containing materials shall be done in a manner that does not promote VOC evaporation, such as, but not limited to, via sewage treatment works or having the waste hauled off-site in sealed containers.
[Rule 338 §305.3]

9. Performance Testing:

- a. Testing Requirements: The Permittee shall conduct performance tests on one (1) FAR oven catalytic oxidizer chosen by the Control Officer as a representative sample every 5 years (no later than 62 months) from the date of the most recent test. The testing deadline may be extended by the Control Officer for good cause, but in no case shall the testing deadline, including test report submittal, extend beyond 180 days after the permit issuance date or 180 days after the new applicable equipment has achieved the capability to operate at its maximum capacity, whichever occurs last.

If the Control Officer waives the performance test requirement due to a temporary suspension of operations in accordance with Rule 270 Section 402.4 (SIP Rule 27.B.4.), the permittee must apply for a permit revision in accordance with Rule 220 §405. The permittee must also provide advance notification that the existing performance test requirement may not be met. These submittals must include a detailed description of the circumstances / reasons for the request and must be submitted immediately upon realizing the circumstances that necessitated the revision.

[SIP Rule 200 §310.1][Rule 270 §401][SIP Rule 27 §A]

- b. Test Methods: The Permittee shall use the following test methods, as applicable, unless alternative methods are approved in writing by the Control Officer.
- i. Sampling sites and velocity traverse points shall be selected in accordance with EPA Test Method 1 or 1A. The gas volumetric flow rate shall be measured in accordance with EPA Test Method 2, 2A, 2C, 2D, 2F, 2G or 19. The dry molecular weight shall be determined in accordance with EPA Test Method 3, 3A or 3B. The stack gas moisture shall be determined in accordance with EPA Test Method 4. These methods must be performed, as applicable, during each test run.
 - ii. The Permittee shall measure the VOC concentration in the oxidizer inlet and exhaust streams to demonstrate compliance with the minimum VOC destruction efficiency requirement and compliance with all applicable VOC emission limits of these Permit Conditions.
 - iii. VOC destruction efficiency testing shall be conducted in accordance with EPA Test Method 25 or 25A. Testing to quantify exempt compounds, such as methane, shall be conducted in accordance with EPA Test Method 18.

[SIP Rule 200 §309] [Rule 270 §§402.3, 402.4][SIP Rule 27 §B] [Arizona Testing Manual for Air Pollutant Emissions]

- c. Operating Conditions: Performance tests shall be conducted under representative operating conditions and all equipment shall be operated during testing in accordance with its operations manual. The Permittee shall make available to the Control Officer any records necessary to determine appropriate conditions for performance tests. Operations during periods of startup, shutdown, and equipment malfunction shall not constitute representative conditions for performance tests unless otherwise specified in the applicable standard or permit conditions.

[Rule 270 §403][Locally Enforceable Only]

- d. Monitoring Requirements: The Permittee shall record all process and control equipment information that are necessary to document operating conditions during the test and explain why the conditions represent normal operation. Operational parameters shall be monitored and recorded at least once every 30 minutes during each of the required test runs and documented in the test report. The operational parameters monitored shall be capable of indicating that the equipment is operating within the permitted limits, both during and after the performance tests.
- i. The Permittee shall record all catalyst bed temperatures and temperature trends within the catalytic oxidizer and exhaust gases during the performance test.

[Rule 270 §301.1][SIP Rule 27 §B]

- e. Test Protocol Submittal: The Permittee shall submit a separate test protocol for each performance test to the Control Officer for review and approval at least 30 days prior to each performance test unless otherwise specified in the applicable standard or in this permit. The test protocol shall be prepared in accordance with the most recent version of the Department's "Air Quality Performance Test Guidelines

for Compliance Determination in Maricopa County.” A completed copy of the Department’s “Test Protocol Submittal Form” shall accompany each test protocol.

[Rule 270 §301.1][SIP Rule 27 §B]

- f. Notice of Testing: The Permittee shall notify the Control Officer in writing at least two weeks in advance of the actual date and time of each performance test unless otherwise specified in the applicable standard or in this permit so that the Control Officer may have a representative attend.

[Rule 270 §404][Locally Enforceable Only]

- g. Testing Facilities Required: The Permittee shall install any and all sample ports or platforms necessary to conduct the performance tests, provide safe access to any platforms, and provide the necessary utilities for testing equipment.

[Rule 270 §405][SIP Rule 42]

- h. Minimum Testing Requirements: Each performance test shall consist of three separate test runs with each test run being at least one hour in duration unless otherwise specified in the applicable standard or in this permit. The same test methods shall be used simultaneously for both the inlet and outlet measurements, if applicable, or justification for any necessary exceptions shall be provided in the test protocol. Emissions rates, concentrations, grain loadings, and/or efficiencies shall be determined as the arithmetic average of the values determined for each individual test run. Performance tests may only be stopped for good cause, which includes forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee’s control. Termination of a performance test without good cause after the first test run has commenced shall constitute a failure of the performance test.

[Rule 270 §406][Locally Enforceable Only]

- i. Test Report Submittal: The Permittee shall complete and submit a separate test report for each performance test to the Control Officer within 30 days after the completion of testing unless otherwise specified in the applicable standard or in this permit. The test report shall be prepared in accordance with the most recent version of the Department’s “Air Quality Performance Test Guidelines for Compliance Determination in Maricopa County.” A completed copy of the Department’s “Test Report Submittal Form” shall accompany each test report.

[Rule 270 §301.1][SIP Rule 27 §B]

- j. Compliance with allowable emission limits and standards shall be determined by the performance tests specified in this permit. If test results do not demonstrate compliance with the requirements of these permit conditions, the Permittee shall make the necessary repairs and/or adjustments to the equipment and demonstrate compliance through retesting. In lieu of retesting, the Permittee may be able to submit an application for a permit revision to establish operational limitations or allowable emission limits based on the equipment’s actual performance. Neither option will nullify the fact that test results did not demonstrate compliance with the requirements of the permit conditions or nullify any violations that may result from this noncompliance. In addition to compliance demonstrations, test results shall be used for annual emissions inventory purposes if the Permittee is required to complete an emissions inventory survey.

[Rule 270 §407][Locally Enforceable Only]

- k. Correspondence: All test extension requests, test protocols, test date notifications, and test reports required by this permit shall be submitted to the Control Officer and addressed to the attention of the Performance Test Evaluation Supervisor.

[Rule 270 §301.1][SIP Rule 27 §B]

- l. Authority: The above testing requirements represent the minimum level of testing to monitor for compliance with the emission limits in this permit. Nothing in this section shall prevent the Control Officer from requiring additional performance testing as deemed necessary to ensure permit compliance and protection of the public health and welfare.

[SIP Rule 200 §309][Rule 270 §402.5]

10. Optional Compliance Demonstrations:

The following Optional Compliance Demonstration documents are incorporated by reference into this Non-Title V Air Quality Permit:

- a. A Guideline for Semiconductor Industry Part I, Acid/Base Emissions and Wet Scrubber Performance Test (May 4, 2001).
- b. A Guideline for Semiconductor Industry Part II, Procedure to Determine Requirements for Operation and Maintenance Plan Point-of-Use/Exhaust Condition Units (June 4, 2001).
- c. A Guideline for Semiconductor Industry Part III, Volatile Organic Compounds (VOC) Abatement Performance Test (November 12, 2001).
- d. A Guideline for Semiconductor Industry Part IV, Insignificant and Trivial Activities (March 26, 2002).

PLATING OPERATIONS**11. Operating Restrictions:**

- a. Each tank used for non-chromium electroplating; electroforming; electropolishing; electroless plating or other non-electrolytic metal coating operation, which contains either of the following shall only be used for conducting research and development for new processes and products:
 - i. Cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1% by weight (as the metal).
 - ii. Manganese in amounts greater than or equal to 1.0% by weight (as the metal).
- b. The plating tanks specified in Subsection [a] of this Permit Condition shall not be used to manufacture products for commercial sale, except in a de minimis manner:

[40 CFR §§63.11505(d)(2), 63.11511]

FUEL BURNING EQUIPMENT**12. Operational Limitations:**

- a. The Permittee shall only use natural gas, butane or propane as fuel for boilers and microturbines.
- b. The Permittee shall limit the facility-wide combustion of natural gas, excluding natural gas consumed by equipment from the Chandler 8 (CH-8) facility, AERCO BMK-6000 boilers and microturbines, to no more than 350 MMscf per any 12-consecutive month period.
- c. Good Combustion Practices: The Permittee shall operate and maintain the microturbines in accordance with the manufacturer's written instructions.

[Rule 220 §302.2]

13. Limitations – Nitrogen Oxides:

For boilers between 10 to 100 MMBtu/hr, including the Kewanee L3S-300-G02 boilers, the Permittee shall establish initial optimal baseline concentrations for NO_x and CO within 90 days of the first usage of the combustion equipment utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. Each unit shall be tuned annually in accordance with good combustion practices or a manufacturer's procedure, if applicable, that includes the following at a minimum:

- a. Inspect the burner system and clean and replace any components of the burner as necessary to minimize emissions of NO_x and CO; and
- b. Inspect the burner chamber for areas of impingement and remove if necessary; and
- c. Inspect the flame pattern and make adjustments as necessary to optimize the flame pattern; and
- d. Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly; and

- e. Measure the NO_x and the CO concentration of the effluent stream after each adjustment is made with a handheld portable monitor to ensure optimal baseline concentrations are maintained.

[Rule 323 §304.1.a][SIP Rule 323 §304.1.a]

14. New Source Performance Standards:

Boilers for which construction, modification, or reconstruction is commenced after June 9, 1989 and have a maximum design heat input capacity greater than or equal to 10 MMBtu/hr, but less than 100 MMBtu/hr are subject to 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units).

[Rule 360 §301.5]

EMERGENCY ENGINES

15. Requirements for All Stationary Reciprocating Engines:

- a. The Permittee shall limit the operation of each emergency engine (including temporary, rental, and/or leased) to no more than 500 hours per any twelve consecutive months and shall not operate the emergency engine for the purposes of maintenance checks and readiness testing for more than 100 hours per calendar year.

[Rule 220 §302.2; Rule 324 §104.5] [40 CFR §§ 60.4211(e), 63.6640(f)(3)]

- b. The Permittee shall limit the fuel usage for the engines to no more than 33,000 gallons per any 12 consecutive month period, excluding usage by generators C8-SG-01 and C8-SG-02. If requested by the Control Officer, compliance with the fuel usage limit shall be demonstrated by summing the total amount of diesel fuel delivered to the facility for the previous 12 consecutive month period.

[Rule 220 §302.2]

- c. The emergency engines shall not be used for peak shaving. The emergency engines shall only be used for the following purposes:

- i. For power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails;
- ii. Emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other essential public services which affect the public health and safety;
- iii. Sewage overflow mitigation and/or prevention;
- iv. The following reliability-related activities, as long as the total number of hours of operation for such activities does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter:
 - 1) Engine readiness, calibration, and/or maintenance; and
 - 2) To prevent the occurrence of an unsafe condition during electrical system maintenance; and
 - 3) For temporary power when normal power service is suspended for facility maintenance purposes, if approved by the Control Officer.
- v. As the prime engine when the prime engine has failed, but only for such time as is needed to repair the prime engine; or
- vi. To operate standby emergency water pumps for fire control that activate when sensors detect low water pressure.

[Rule 324 §104; Rule 220 §302.2]

- d. The Permittee shall install a non-resettable totalizing hour meter prior to startup of the engines. If the non-resetting totalizing hour meter is found to be malfunctioning, operation of the engine shall cease until corrective action(s) can be implemented or the function of the meter is restored.

[Rule 324 §308] [40 CFR §§60.4209, 63.6625(f)]

- e. The Permittee shall not use any fuel that contains more than 0.0015% sulfur by weight, alone or in

combination with other fuels. Additional fuel requirements for new engines are specified in Permit Condition 16.a.iv.

[Rule 324 §301.1]

16. NSPS III Requirements:

- a. The following engines shall be certified by the engine manufacturer to meet the corresponding emission standards, as specified in 40 CFR 89.112, and shall comply with all requirements of Subsections [i]-[iv] of this Permit Condition:

Engine Identification	Standard
ID: F6-EG-1, 1005 HP Caterpillar C-27	Tier 2
ID: C3-EG-1, 250 HP Cummins DSGAC-1987183	Tier 3
ID: ND-EG-1 (ADC), 250 HP Cummins DSGAC-593507	Tier 3
ID: C8-SG-01, 755 HP Cummins QSX15	Tier 2
ID: C8-SG-02, 755 HP Cummins QSX15	Tier 2
ID: C2-EG-1, 315 HP Caterpillar D200-2, 2015 Model Year	Tier 3
ID: C8-SG-03, 1490 HP Cummins KTTA50-G2, 2018 Model Year	Tier 2
ID: C4-EG-1, 755 HP Cummins QSX15, 2018 Model Year	Tier 2
ID: C7-SG-03, 2206 HP Caterpillar 3512C. 2020 Model Year	Tier 2

[40 CFR §§60.4205, 60.4211(c), 63.6590(c)]

- i. The Permittee shall operate and maintain the engines according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine.
[40 CFR §§60.4211(a), 60.4206, 63.6590(c)]
- ii. The Permittee shall only change those engine settings that are permitted by the manufacturer.
[40 CFR §§60.4211(a), 63.6590(c)]
- iii. The Permittee shall meet the requirements of 40 CFR parts 89 as it applies.
[40 CFR §§60.4211(a), 63.6590(c)]
- iv. The Permittee shall only use diesel fuel that has a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
[40 CFR §§60.4207(b), 63.6590(c)]
- b. If the Permittee modifies or reconstructs a stationary compression ignition internal combustion engine after July 11, 2005, that engine shall comply with all applicable requirements of NSPS III.
[40 CFR §60.4200(a)(3)]

17. 40 CFR 63 Subpart ZZZZ Requirements:

The Permittee shall comply with the following for all existing stationary reciprocating internal combustion engines (RICE) for which no construction or reconstruction has commenced since June 12, 2006:

- a. Operate and maintain each engine and associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Control Officer which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
[40 CFR §63.6605(b)]
- b. Operate and maintain each engine according to the manufacturer's emission-related operation and maintenance instructions or develop and follow the Permittee's own maintenance plan which must

provide to the extent practicable for the operation and maintenance of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

[40 CFR §63.6640(a)]

- c. Comply with the following maintenance schedule for each engine:
- i. Change oil and filter or perform an Oil Analysis Program every 500 hours of operation or annually, whichever comes first. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity and percent water content. The condemning limits for these parameters are as follows:
 - 1) Total Base Number is less than 30% of the Total Base Number of the oil when new;
 - 2) Viscosity of the oil has changed by more than 20% from the viscosity of the oil when new;
 - 3) Percent water content (by volume) is greater than 0.5.

If none of these limits are exceeded, the Permittee is not required to change the oil. If any of the limits are exceeded, the Permittee must change the oil before continuing to use the engine. The Permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine

- ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
- iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 CFR §63.6603(a); Table 2d(4)]

- d. If an engine is operating during an emergency and it is not possible to shut down the engine in order to perform the maintenance requirements on the schedule required by this Permit Condition, or if performing the maintenance operations on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the maintenance operations can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The maintenance operations shall be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the maintenance operations on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable, in accordance with Permit Condition 20.b.

[40 CFR §63.6603(a); Table 2d]

- e. During periods of startup, the Permittee shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[40 CFR §63.6625(h)]

COOLING TOWER OPERATIONS

18. Operating Limitations:

- a. The Permittee shall maintain written documentation from the manufacturer specifying the efficiency of each drift eliminator.
- b. The Permittee shall not allow exhaust from any cooling tower to bypass its drift eliminator.
- c. The Permittee shall inspect each cooling tower drift eliminators for proper installation, maintenance, and operation every 6 months. The results of the inspection shall be recorded in a facility log.

[Rule 220 §§302.2, 302.7]

SITE-WIDE REQUIREMENTS**19. Recordkeeping:**

The Permittee shall comply with the requirements set forth in this permit. All records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request. Unless otherwise specified, copies of reports, logs and supporting documentation required by the permit or Control Officer shall be retained for at least 5 years. Records shall consist of the following information:

[Rule 220 §501]

- a. The Permittee shall maintain a current list of VOC-containing materials, make-up solvents, and any other VOC-containing materials used for all operations at the facility, stating the VOC content of each in either pounds per gallon or grams per liter. The vapor pressure limits or VOC content of cleaning solvents shall be documented by a manufacturer's technical data sheet, manufacturer's safety data sheet or actual test results.

[Rule 338 §502.1][Rule 220 §302.7]

- b. The Permittee shall keep monthly usage records for materials containing VOC and/or HAPs.

[Rule 338 §502.2][Rule 220 §302.7]

- c. The Permittee shall maintain monthly purchase records of all ethanol-containing materials used in the CH-1 Building deflux tool (DLX001) for semiconductor manufacturing.

- d. The Permittee shall maintain monthly records of material use and/or production values for each associated tool in which regulated air pollutant emissions calculations are based on material usage and/or production values.

- e. The Permittee shall maintain records of any monitoring and maintenance requirements and key operating parameters as specified in the O&M Plans, AMC Plans and/or manufacturer's specifications and operating instructions required by this Permit for any emission control device in which an emission reduction credit is taken.

- f. To demonstrate compliance with Permit Condition 12.b, the Permittee shall maintain monthly records of the rolling 12-month total amount of natural gas burned at the facility, excluding the CH-8 plant, AERCO BMK-6000 boilers and microturbines.

[Rule 220 §302.7]

- g. Boilers:

For boilers that have a heat input greater than or equal to 10 MMBtu/hr but less than or equal to 100 MMBtu/hr, the Permittee shall maintain the following records:

- i. Type and amount of each fuel combusted during each calendar month. A monthly invoice from the fuel supplier may be used to demonstrate compliance with the requirement of this provision.

[Rule 323 §501.1][40 CFR §60.48c(g)]

- ii. Days and hours of operation.

[Rule 323 §501.1][SIP Rule 323 §501.1]

- iii. Tuning Procedure: Date that the procedure was performed on the particular unit and at a minimum: stack gas temperature, flame conditions, nature of the adjustment and results of the NO_x and CO concentrations obtained after each adjustment.

[Rule 323 §501.4][SIP Rule 323 §501.4]

- iv. A copy of each notification that is submitted to comply with Permit Conditions 20.c and 20.d, and the documentation supporting each notification.

[40 CFR §60.48c(e)]

- h. Emergency Engine Records:

- i. To demonstrate compliance with Permit Condition 15.b, the Permittee shall maintain copies of fuel purchase receipts for all diesel fuel delivered to the facility. Each receipt must include both the

delivery date and amount of fuel transferred to the facility for each event.

[Rule 220 §302.7]

- ii. The Permittee shall maintain an annual engine record for each emergency generator and water pump that includes hours of operation and an explanation for use.

[Rule 324 §502.4]

- iii. The Permittee shall keep a record that includes an initial one time entry listing the particular engine combustion type (compression or spark-ignition or rich or lean burn); manufacturer; model designation, rated brake horsepower, serial number and where the engine is located on the site.

[Rule 324 §502.1]

- iv. The Permittee shall maintain monthly records of engine operation. The records shall include the purpose of operation and the duration of time the engine was operated. The record shall identify whenever the operation of the engine was for emergency purposes.

[Rule 220 §302.5] [40 CFR §§ 60.4211(e), 63.6590(c), 63.6655(f), 63.6660]

- v. The Permittee shall maintain a copy of engine manufacturer data for each engine specified in Permit Condition 16.a, indicating compliance with the standards in this Permit, and shall make the documentation available to the Control Officer upon request. The manufacturer's data sheets shall be maintained by the Permittee for the length of time the engine(s) remain at the facility.

[Rule 220 §302.7]

- vi. For the engines specified in Permit Condition 16.a, the Permittee shall maintain a copy of the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, shall be kept onsite for the length of time the engine(s) remain at the facility and made available to the Control Officer upon request.

[Rule 220 §302.7] [40 CFR §60.4211(a)]

- vii. If the Control Officer requests proof of the sulfur content of fuel burned in the engines, the Permittee shall submit fuel receipts, contract specifications, pipeline meter tickets, Material Safety Data Sheets (MSDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the applicable sulfur limit shall be permitted if so desired by the owner or operator for evidence of compliance.

[Rule 220 §302.13, Rule 324 §501.4]

- viii. 40 CFR 63 Subpart ZZZZ requirements: Records of the maintenance conducted on the engine in order to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the maintenance plan required in Permit Condition 17.

[Rule 220 §302.7] [40 CFR §§63.6655(e), 63.6660]

- i. Cooling Tower Records:

The Permittee shall maintain the following records for a period of at least five years from the date of the records and make them available to the Control Officer upon request:

- i. Total monthly flowrate of circulating water within each set of towers (MSB, EC, CH-8), or the maximum capacity and operating hours for each set of towers.
- ii. If monthly water flowrate for a cooling tower system is estimated based on the operating hours and capacity of the system, in accordance with Permit Condition 2.e, the Permittee shall provide supporting documentation used to calculate the capacity along with records of the monthly operating hours for the system.
- iii. Purchase records for VOC-containing treatment materials used in the cooling towers.
- iv. Written documentation provided by the vendor/manufacturer of the maximum drift loss of each drift eliminator.
- v. Inspection logs of the drift eliminators.

- vi. Total Dissolved Solids Concentration (TDS):
- 1) On a weekly basis, when the towers are in operation, the Permittee shall measure and record the TDS concentration in the circulating water of each tower. If the towers are not in operation on the scheduled day for sampling, the Permittee shall obtain a sample on the next day the cooling tower is operating.
 - 2) The measured TDS value will be used in the calculation presented in Permit Condition 2.e to determine PM₁₀ and PM_{2.5} emissions from each cooling tower. An average monthly TDS value may be used if multiple readings are taken within a calendar month.
- [Rule 220 §302.5]
- j. Emissions: The Permittee shall maintain records of the 12-month rolling total emissions required by Permit Condition 1.d.
- [Rule 220 §302.2] [Rule 241 §§304, 305, 308]

20. Reporting:

- a. The Permittee shall submit a NO_x emission report to the Control Officer, Attn: Compliance Manager, every six months from the date of permit issuance. The report shall include the calendar dates covered by the reporting period and shall be postmarked by the 45th day following the end of the reporting period.
- [Rule 220 §302.8]
- b. Deviations from Maintenance Schedule:
The Permittee shall report any failure to perform a maintenance operation on the schedule required by Permit Condition 17.d and the Federal, State or local law under which the risk was deemed unacceptable. The Report shall be submitted to the Control Officer, Attn: Compliance Manager, within 2 working days after the date on which the maintenance operation was required to be performed. A subsequent report shall be submitted to the Control Officer within 2 working days after the required maintenance operation is performed.
- [Rule 220 §302.8] [40 CFR §63.6603(a)]
- c. The Permittee shall submit to the Control Officer, Attn: Permitting Manager, notification of the date of construction, anticipated startup, and actual startup of any new steam generating unit(s) between 10 and 100 MMBtu/hr, as provided in 40 CFR §60.7 and Subsection [d] of this Permit Condition. This notification shall include:
- i. The design heat input capacity of the steam generating unit(s) and identification of fuels to be combusted in the steam generating unit(s).
 - ii. The annual capacity factor at which the Permittee anticipates operating the steam generating unit(s) based on all fuels fired and based on each individual fuel fired.
- [40 CFR §60.48c(a)]
- d. The Permittee shall submit to the Control Officer, Attn: Permitting Manager, notification of the date of construction or reconstruction and actual startup of any new steam generating unit(s) between 10 and 100 MMBtu/hr as follows:
- i. A notification of the date construction or reconstruction of the new steam generating unit(s) is commenced postmarked no later than 30 days after such date.
 - ii. A notification of the actual date of initial startup of new steam generating unit(s) postmarked within 15 days after such date.
- [40 CFR §60.7]
- e. Notifications and reports required by this Permit Condition shall be submitted through the AQD Online Portal (IMPACT). If IMPACT is not accessible, the Permittee may use alternative means of submittal (i.e. certified mail, facsimile, email, or hand delivery).

GENERAL CONDITIONS**21. Posting of Permit:**

This Permit shall be posted in a clearly visible and accessible location on the site where the equipment is installed.

[SIP Rule 200 §312]

22. Compliance:

a. The issuance of any Permit or Permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a Permit or Permit revision required under the County Rules.

[SIP Rule 200 §§309, 310.3][SIP Rule 220 §406.3]

b. The Permittee shall comply with all conditions of this Permit including all applicable requirements of Federal laws, Arizona laws, and Maricopa County Air Pollution Control Rules and Regulations now in effect and as amended in the future. Any Permit noncompliance is grounds for enforcement action, Permit termination or revocation, or for denial of a renewal application. In addition, non-compliance with any federally enforceable requirements constitutes a violation of the Clean Air Act.

[SIP Rule 200 §310.4][SIP Rule 220 §302.24][A.A.C. R18-2-306.A.8.a]

c. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with these Permit Conditions.

[SIP Rule 220 §302.10][A.A.C. R18-2-306.A.8.b]

d. Rights and Privileges: This Permit does not convey any property rights or exclusive privilege of any sort.

[SIP Rule 220 §302.12]

e. Fees: The Permittee shall pay all fees to the Control Officer in accordance with Rule 280. No permit or permit revision is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.

[SIP Rule 200 §409][Rule 280 §302][A.R.S. 49-480(D)][SIP Rule 28]

23. Malfunctions, Emergency Upsets, and Excess Emissions:

An affirmative defense of an emergency, excess emission, and/or during startup and shutdown shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence as outlined in Rule 130 for emergencies and Rule 140 for excess emissions.

[Rule 130 §§201, 400][Rule 140 §§400, 500][SIP Rule 140]

24. Revision / Reopening / Revocation:

The Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

[SIP Rule 220 §302.11]

25. Records:

a. The Permittee shall furnish information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. The information shall be provided in a timeframe specified by the Control Officer. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator along with a claim of confidentiality.

[SIP Rule 220 §302.13][SIP Rule 40]

b. If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application is filed but prior to release of a proposed permit. Willful

misrepresentation of facts in a permit application is cause for revocation or denial of a permit.

[SIP Rule 220 §§301.5, 301.6]

26. Right to Entry:

- a. The Control Officer during reasonable hours, for the purpose of enforcing and administering County or SIP Rules or the Clean Air Act, or any provision of the Arizona Revised Statutes relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under A.R.S. 49-488 who in any way denies, obstructs or hampers such entrance or inspection that is lawfully authorized by warrant.
- b. The Permittee shall allow the Control Officer or his designated representatives, upon presentation of proper credentials (e.g., Maricopa County Air Quality Department identification) and other documents as may be required by law, to:
 - i. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept pursuant to the conditions of the permit;
 - ii. Have access to and copy, at reasonable times, any records that are required to be kept pursuant to the conditions of the permit;
 - iii. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required pursuant to this permit;
 - iv. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the Permit or other applicable requirements; and
 - v. Record any inspection by use of written, electronic, magnetic, and photographic media.

[SIP Rule 100 §105][SIP Rule 220 §302.17-21]

27. Severability:

The rules, paragraphs, clauses, provisions, and/or sections of this Permit are severable, and, if any rule, paragraph, clause, provision, and/or section of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

[SIP Rule 220 §302.9]