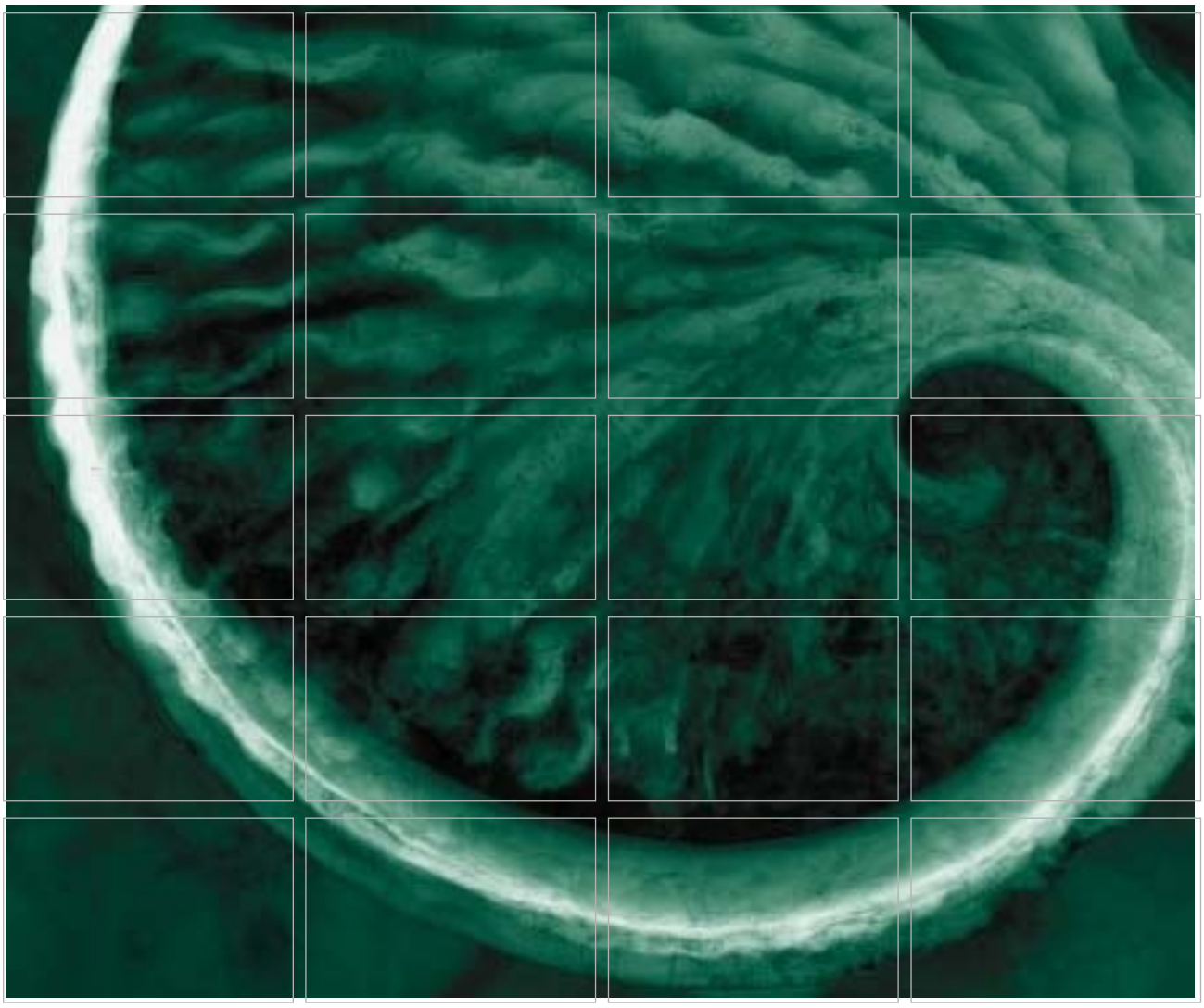

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Honeywell Engines
Phoenix, Arizona

Title V/Renewal Permit Application
Permit Number V97-008

May 2016

Environmental Resources Management
7272 East Indian School Road, Suite 100
Scottsdale, Arizona 85251

ERM

Delivering sustainable solutions in a more competitive world

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Return all applications to: One Stop Shop
501 N. 44th Street, Suite 200
Phoenix, AZ 85008
Phone (602) 372-1071 Fax (602) 372-1078

Maricopa County
Air Quality Department

STANDARD PERMIT APPLICATION FORM

(As required by A.R.S. § 49-480, and Chapter 3, Article 3, Arizona Administrative Code)

1. Permit to be issued to:(Business license name of organization that is to receive permit)
   Honeywell Engines
2. Mailing Address: 111 South 34th Street Mail Stop 158 .
   City: Phoenix State: AZ ZIP: 85034 .
3. Plant Name (if different from item #1 above):
4. Name (or names) of Owner or Operator:
   Honeywell International
   Phone: N/A
5. Name of Owner's Agent:
   N/A
   Phone: N/A
6. Plant/Site Manager or Contact Person:
   Mr. Paul Holzman, HS&E Manager
   Phone: (602) 231-1272
7. Proposed Equipment/Plant Location Address:
   111 South 34th Street
   City: Phoenix County: Maricopa ZIP: 85034
   Indian Reservation (if applicable):
   Section/Township/Range: Not Applicable
   Latitude: 33 ° 26 '46" Longitude: 112° 00' 23" Elevation: 1,122 ft.
8. General Nature of Business: Turbine and turbofan engine manufacturing and testing .

   Standard Industrial Classification Code: 3724, NAICS Code 336412 .
9. Type of Organization: X Corporation ___Individual Owner
   _____Partnership ___Government Entity (Government Facility Code:
   _____Other:
10. Permit Application Basis:
    _____New Source ___Revision X Renewal of Existing Permit
    _____Portable Source ___General Permit (Check all that apply.)
    For renewal or modification, include the existing permit no.
    V97-008
    Date of Commencement of Construction or Modification:

    Is **any** of the equipment to be leased to another individual or entity?
    _____Yes X No
11. Signature of Responsible Official of Organization _____
    Official Title of Signer: Plant Director
12. Typed or Printed Name of Signer: _____Ramon Gutierrez_
    Date: _____ **Phone Number:** _____

Return all applications to: One Stop Shop
501 N. 44th Street, Suite 200
Phoenix, AZ 85008
Phone (602) 372-1071 Fax (602) 372-1078

Maricopa County
Air Quality Department

INSERT ALL MCAQD EMISSION SOURCE FORMS AND EQUIPMENT LIST

Certification of Truth, Accuracy, and Completeness and Compliance Status

By my signature I, the Responsible Official for the applicant, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

I also attest that I am in compliance with the applicable requirements of the Title V Operating Permit held by the Honeywell Engines facility and will continue to comply with such requirements and any future requirements that become effective during the life of that permit.

Name/Title: Ramon Gutierrez / Plant Director .

Signature: . Date: .

1 INTRODUCTION

Honeywell Engines (hereafter Honeywell, or Engines facility) was issued the current Title V Air Quality Operating Permit (permit, Permit Number V97-008) on January 27, 2011. The expiration date for this permit is November 30, 2016. As required by the permit General Condition, 14 Permitting, E Renewal, 1, an application for renewal of the permit is to be submitted at least six months, but not more than 18 months, prior to the date of permit expiration.

Honeywell is a Title V major stationary source of air emissions, as defined in Maricopa County Air Pollution Control Regulations (MCAPCR) Rule 100, Section 200.60.c, because the facility potential to emit (PTE) is greater than the Title V major source thresholds for carbon monoxide (CO) and oxides of nitrogen (NO_X) of 100 tons per year (tpy). As shown in Figure 1-1 (refer to the "Figures" tab) the Engines facility address is 111 South 34th street, and operational areas are generally located along the northern boundary of Sky Harbor Airport, on both the north and south sides of Air Lane. The area in which the facility is located is designated as nonattainment for 8-hour average ozone and serious non-attainment for PM_{10}; and as either an attainment or a maintenance area for other pollutants and averaging times stipulated in National Ambient Air Quality Standards (NAAQS).

Honeywell is submitting to the Maricopa County Air Quality Department (MCAQD) the Title V operating permit renewal application which is intended to satisfy all requirements of Title V of the 1990 Clean Air Act Amendments as embodied in Title 40 Code of Federal Regulations Part 70 [40 CFR Part 70 and in the rules of the MCAQD Rule 210, Title V Permit Provisions and Appendix B - Standard Permit Application Form and Filing Instructions - Maricopa County.

This application includes recent and near-future facility changes that affect the current Equipment List. The Equipment List and processes described in this application represent on overall reduction in the number of sources at the facility. In addition, normal operations at the Engines facility involve relocation or different uses of equipment in certain categories. As examples, solvent cleaning dip tanks and small abrasive blast units may be relocated to meet specific project purposes, and cleaning solvent or blasting agent used in a specific piece of equipment may change. In this manner, the detailed layout of this equipment can vary over time. However, the changes do not change their emission characteristics. Such changes would be documented by the

Engines facility by a logging process. The actual and estimated maximum emissions attributed to these sources are calculated using material balances, based on facility-wide material usage and waste recovery quantities, which is the method used in this application.

Additional facility changes will be addressed by separate submittal of Significant or Minor Revision applications, as appropriate.

Table 1-1. Honeywell Engines - Title V Air Permit Application Completeness Checklist

APPLICATION ITEM	Location	Comment
1. Description of the process to be carried out in each unit.	Section 2.3	
2. Description of products.	Sections 2.1 and 2.3	
3. Description of alternate operating scenarios.	Section 2.3.16	BSVE
4. Description of alternate operating scenario products.		None
5. A flow diagram for all processes.	Figures 2-7 to 2-23	
6. A material balance for all processes.	Appendices A and E	Emission Calc.
7. Emissions Related Information: a. Potential emission rates for all regulated pollutants. b. Points of emissions and additional information sufficient to determine fees.	Section 3.3, Tables 3-1 to 3-5, Emission Source Forms, Appendices A and E	
8. Citation and description of all application requirements as defined in Rules 100 and 210.	Sections 4.5, 4.6 and Table 4-3	
9. An explanation of any voluntary limitations or proposed exemptions from otherwise applicable requirements.	Sections 3.3.2, 4.2 through 4.8	Same as current permit
10. The following information to the extent it is necessary to determine or regulate emissions: a. Maximum annual process rate for each piece of equipment which generates air emissions. b. Maximum annual process rate for the whole plant. c. Maximum rated hourly process rate for each piece of equipment which generates air emissions. d. Maximum rated hourly process rate for the whole plant. e. Description of fuel type and use per year and per hour for all fuel burning equipment. f. Description of raw materials. g. Anticipated operating schedule including days per week, hours per day, and days per year in operation. h. Limitations on source operations and any work practice standards affecting emissions. i. A demonstration of how the source will meet any voluntary limitations.	Section 3.3, Appendices A, B, D and E Tables 3-1 through 3-5	
11. Description of all process and control equipment requiring permits including: a. Name. b. Make (if available). c. Model (if available). d. Serial number (if available). e. Date of manufacture (if available). f. Size/capacity. g. Type.	Sections 2.3 and 3.3, Equipment List	
12. Stack information including; a. Identification. b. Description. c. Building dimensions. d. Exit gas temperature. e. Exit gas velocity. f. Height g. Inside dimensions.	Emission Source Forms	As applicable

Table 1-1 (cont.). Honeywell Engines - Title V Air Permit Application Completeness Checklist

APPLICATION ITEM	Location	Comment
13. Site diagrams including; a. Property boundaries. b. Adjacent streets or roads. c. Directional arrow. d. Elevation. e. Closest distance between equipment and property boundary. f. Equipment layout. g. Relative location of emission sources. h. Location of emission points and non-point emission areas. i. Location of air pollution control equipment.	Figures 1-1 and 2-1 to 2-6	
14. Air pollution control information: a. Description of or reference to any applicable test method for determining compliance with each applicable requirement. b. Identification, description and location of air pollution control equipment c. The rated and operating efficiency of air pollution control equipment d. Data necessary to establish required efficiency for air pollution control equipment e. Evidence that operation of the new or modified air pollution control equipment will not violate ambient air quality standards or maximum allowable increases.	Section 3.3, Tables 3-1 through 3-5, Figures 2-2 to 2-6 Appendices A and B, D and E	
15. Equipment manufacturer's bulletins and shop drawings as appropriate.		Not Applic.
16. Compliance plan: a. A description of the compliance status of the source with respect to all applicable requirements including: i. Regulation III. ii. A.R.S. 49-480.03. iii. A.R.S. 49-480.04. iv. Rule 210. b. A Compliance schedule as follows: i. Statement for source in compliance that source will continue to comply. ii. Statement that source will meet requirements that will become effective during permit term in a timely manner. iii. Schedule of compliance for sources not in compliance including remedial measures. c. Submission of certified progress reports every 6 months or more frequently.	Section 4, Tables 4-1 to 4-6 Certification Statement	Facility is in compliance with requirements. Compliance Plan not required.
17. Compliance certification including: a. Identification of applicable requirements. b. Statement of methods used in determining compliance including description of monitoring, recordkeeping, and reporting. c. Schedule of submission of compliance certifications during permit term annually or more frequently. d. A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification statements. e. A Certification of truth, accuracy, and completeness pursuant to Rules 210 or 220.	Section 4, Tables 4-1 to 4-6 Certification Statement	
18. Information required to show compliance with Rule 240 for new major sources or major modifications to major sources located in a non-attainment area including: a. A LAER determination that is consistent with the requirements of the definition of LAER contained in Rule 240. The demonstration shall contain the data and information relied upon by the applicant in determining the LAER. b. A form that describes all existing major sources owned or operated by the applicant and a statement of compliance with all conditions contained in the permits or conditional orders of each source. c. If the source is subject to the offset requirements of Rule 240, the applicant shall demonstrate the manner in which the requirements will be achieved.	Not Applicable	Renewal application does not address new or modified sources.
19. Calculations on which all information in the application is based.	Section 3.3, Appendices A and E	

2 FACILITY AND PROCESS DESCRIPTION

2.1 FACILITY SITE DESCRIPTION

Honeywell owns and operates an engine manufacturing and test facility (for turbine engines, turbofan engines, and auxiliary power units) in Phoenix, Arizona. The facility's primary Standard Industrial Classification (SIC) Code is 3724. The primary production operations consist of metal machining and treating, metal plating, solvent cleaning and degreasing, assembly and testing of the engines. Test facilities are comprised of dedicated jet engine test cell structures for performance and development testing of engines, or engine components. Support equipment at the facility includes boilers and air heaters, storage tanks, emergency generators, and numerous other small pieces of equipment. Air pollution control equipment generally consists of various types of dust collection devices and fume or acid scrubbers.

The facility is located at 111 South 34th Street in the city of Phoenix, Maricopa County, Arizona. The facility consists of 102 individually numbered buildings or structures on approximately 150 acres. However, only a portion of the facility houses active operations. Figure 2-1 is an overall site layout diagram showing the entire facility to be on the north side of the north runway at Phoenix Sky Harbor International Airport (PSHIA).

Chlorinated solvents and jet fuels had been used at the Facility since the early 1950s. The facility discontinued use of chlorinated solvents in the 1990s but continues to use different grades of jet fuel to supply engine testing cells located on the northern side of the site. The groundwater table beneath the facility is known to contain a free-product (hydrocarbon liquid) plume consisting of a mixture of Jet A and JP-4 jet fuels as well as some chlorinated solvents. To remediate this underground plume, a biologically-enhanced soil vapor extraction (BSVE) system was engineered and implemented on-site to remove and treat the free product and contaminated soil vapors. The BSVE system may remain in operation for the duration of the requested Title V permit renewal, however, the potential also exists for the permitted soil vapor extraction portion of the system to be discontinued during the permitting timeframe. The air emission units associated with the BSVE system are addressed in this application.

2.2 SITE AND EMISSION UNIT LAYOUT

The overall site layout provided in Figure 2-1 (refer to "Figures" tab) shows the facility boundaries, north arrow, and general site arrangement. That figure also marks out the five areas of the facility that are illustrated in more detail in Figures 2-2 through 2-6. These expanded views illustrate the primary facility buildings and the approximate locations of the process areas and emissions units. The point source emission units are mostly located at Buildings 103, 202, 301 and 422, although other operations covered by the permit are distributed facility-wide.

2.3 PROCESS DESCRIPTIONS

The following subsections provide detailed descriptions of the existing equipment at Honeywell Engines. The facility is comprised of a large number of individual emissions units subject to Title V air permitting requirements, which include:

- Abrasive Blasting
- Air Heaters
- Boilers
- Underground Storage Tanks
- Oils and Solvents Distribution Station
- Fuel Nozzle Test Stands
- Furnaces – Carburizing
- Furnaces – Heat Treating
- Thermal Spray Coating
- Hard Chrome Plating Line
- Other Metallic Plating Lines
- Component Rig Testing
- Solvent Parts Washers and Flush Booth
- Solvent Dip Cleaning Equipment
- Jet Engine Test Cells
- Emergency Generator and Fire Water Pump Engines
- BSVE System

On a typical week the production and testing operations schedule at the facility is expected to be 24 hours per day, 5 days per week. On an annual basis the operating hours are typically 24 hours per day 5 days per week and occasionally 7 days per week with 12 hour shifts on Saturdays and Sundays.

Process Flow Diagrams for the above-listed processes are located at the end of the section in Figures 2-7 through 2-23 (refer to "Figures" tab).

2.3.1 Abrasive Blasting Operations

This process performs abrasive cleaning of parts and test equipment using particulate blast media entrained in compressed air. Abrasive blast cabinets are located in Building 129 (1 unit), Building 202 (3 units), Building 422 (6 units) at the facility, as noted in the attached Equipment List. Each blast cabinet is controlled by either small dedicated filter units, or several cabinets may be aggregated to use a single filter device. There are two emission control devices each for Buildings 422 and 301, and one each for abrasive blasting units in Buildings 103 and 202. A generalized flow diagram is provided in Figure 2-7.

The blast media/compressed air mixture impinges on the part surface, and removes temperature paint, epoxy residue, oil residue, fluxes, and other compounds. Various sizes and weights of silica sand, glass beads, garnet, and other blast material, based on the process use, are used to abrasively clean the parts. Material usage for abrasive blasting occurs relatively uniformly throughout the year.

For the facility blasting cabinets, the air conveying the blast media is vented to dust collection systems. Emission control equipment for abrasive blasting operations may be either wet or dry filter dust collectors, which treat the blast chamber exhaust. The purpose of the dust collectors is to remove the heavy particles and residue by either filtration or centrifugal action. Air from the blast cabinet emission control systems may be released inside a building, or through a vent to atmosphere.

Normal operating hours for abrasive blasting vary as a function of production schedule, and for the individual cabinets ranges from one hour per year to 6,240 hours per year. For purposes of potential emissions estimates, maximum operating hours for this system are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this production equipment.

2.3.2 Air Heaters

Air heaters are used to heat air flowing into the engine test cells during jet engine testing, and for certain rig testing operations (see Section 2.3.9). The purpose of the heaters is to simulate actual engine service environments and combustion conditions. Buildings 202 and 222 each have one associated air heater, and Building 203 has three (3) heaters, and Building 204 has four (4) heaters. Heat input ratings range from 0.44 to 10.98 MMBtu/hr. Natural gas is used to fuel the external combustion air heaters for production of warm air. The consumption of natural gas is approximately evenly distributed across the year. No pollution control equipment is installed on the test cell/air heaters exhaust; combustion products are conveyed through the test cell stacks to the atmosphere. A generalized flow diagram is provided in Figure 2-8.

Normal operating hours for the individual heaters range from zero hours to 8,760 hour per year. For purposes of potential emissions estimates, maximum operating hours for air heaters are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.3 Boilers

At the facility, there are six (6) operable natural-gas fired boilers distributed among several different buildings. It should be noted that four boilers listed in the prior Title V permit have been retired-in-place, and are no longer operable (Bldg. 212-Stack 4, Bldg.202-Stacks 4 and 5, Bldg. 102-Stack 13, refer to Table A-1). The remaining operable boilers range in heat input rating from 0.35 to 4.11 MMBtu/hr and produce steam, hot water, and process heat for various purposes. Natural gas consumption for this equipment is evenly distributed throughout the year, with approximately 25 percent of annual consumption per calendar quarter. No pollution control equipment is associated with these boilers; combustion products are conveyed through individual stacks to the atmosphere. A generalized flow diagram is provided in Figure 2-9.

Normal operating hours for the facility boilers range from five hours per year to 8,760 hours per year. For purposes of potential emissions estimates, maximum operating hours for boilers are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.4 Volatile Organic Liquid (VOL) Storage Tanks

There are seventeen (17), 20,000 gallon, horizontal cylindrical underground storage tanks (USTs) located onsite. Twelve are located at "Fuel Farm North" which is located in Area 2 on site. There are five (5) USTs located at “Fuel Farm South” in Area 1. All tanks are used to store and supply various grades of aviation fuels. These USTs supply the facility test cells with primarily Jet A, JP-4, JP-8 and other aviation fuels. All tanks are equipped with at least one vent and a submerged fill pipe.

The Site has one (1) 6,000 gallon AST near Building 422 used to store methanol that is supplied to the carburizing furnace process (Section 2.3.6), and heat-treat furnaces (Section 2.3.7). This tank is aboveground, and is equipped with a pressure relief vent and a submerged fill pipe.

The Fuel Farm North USTs are filled via hose lines from trucks parked on the industrial area street adjoining the facility. Similarly, on the southern portion of the facility, at “Fuel Farm South” tanker trucks can fill the USTs via hose lines from a designated on-site parking spot. The USTs are connected to the facility test cells via above ground piping to supply the appropriate fuels for testing operations. There is no storage or

supplemental fuel tanks located at the test cells. The individual USTs have submerged fill pipes and the required Stage 1 vapor recovery to abate the emission of vapors during fuel transfer operations. A generalized flow diagram is provided in Figure 2-10.

Normal and maximum operating hours for these tanks are 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.5 Fuel Nozzle Test Stands

A variety of engine fuel system components (e.g. manifold, flow divider, nozzle/atomizer, fuel control, fuel pump, etc.) are functionally tested in enclosed fuel nozzle test stands. There are seven (7) fuel nozzle test stands at the facility. The test stands include single test stands located in Buildings 116 and 208, and five (5) test stands in Building 211. These stands use a commonly accepted industry calibration fluid (MIL C 7202) as a surrogate for combustible fuel. The fluid is heated to operating temperature, and re-circulated during the test period from a small storage reservoir via valves, pumps and plumbing through the component-in-testing to verify design and performance specifications. A generalized flow diagram is provided in Figure 2-11.

The calibration fluid is of low volatility and consumed at a very low rate due to fugitive losses from the from the test stand enclosure. The test stands enumerated above and listed in the attached Equipment List are vented to atmosphere, while there are others that are not vented to atmosphere and are considered insignificant sources. The calibration test fluid may be replaced as needed when its physical properties degrade such that the fluid no longer meets specifications. These test stands operate on an irregular schedule, on an as-needed basis to meet testing requirements. For purposes of potential emission estimates the highest level of fluid replacement, 0.05 gallons per test hour, is assumed to be evaporated to atmosphere.

2.3.6 Carburizing Furnaces

Carburizing is a case-hardening process in which carbon is dissolved into the surface layers of a low-carbon steel part at very-high temperature sufficient to render the steel austenitic. Two (2) carburizing furnace processes are located in Building 422. In this process, a steel part or set of parts is exposed to the carburizing environment at a temperature between 1600°F and 1700°F followed by quenching and tempering to form a martensitic microstructure. The resulting gradient in carbon content below the surface of the steel part causes a gradient in hardness, producing a strong, wear-resistant exterior surface layer. Various gas turbine engine parts, test devices, instrumentation, and general test equipment are treated in the two carburizing furnaces at the facility.

The carburizing furnace creates a carbon-rich atmosphere consisting of methane, methanol, and nitrogen. The steel parts are thoroughly cleaned before they are charged into the carburizing furnaces. A carrier gas mixture consisting of nitrogen and methanol is introduced in the furnace. Methanol is supplied from the 6,000 gallon AST located north of Building 422. A regulated amount of methane is added to control the "carbon potential" parameter of the process as needed for a given component. The hydrocarbon molecules "crack" at the elevated temperature in the furnace and the free carbon deposits in the steel. Byproducts of combustion and the carburizing furnace process that are emitted to atmosphere are hydrogen, carbon monoxide, carbon dioxide, nitrogen, and water. Upon the completion of the carburizing cycle, parts are moved to an enclosed chamber for a fan-assisted cooling in nitrogen before unloading. A generalized flow diagram is provided in Figure 2-12.

Carrier gas and reactive gas consumption (i.e., methanol, nitrogen) is generally uniformly distributed throughout the year. No pollution control equipment is associated with this equipment.

Normal operating hours for the carburizing furnaces ranges to as much as 6,240 hours per year. For purposes of potential emission estimates, maximum operating hours are assumed to be 24 hours per day, 7 days per week. No alternate operating scenarios exist for this process equipment.

2.3.7 Heat Treat Rotary Furnaces

There are seven (7) heat treating furnaces (2 are carburizing furnaces) at the facility. The rotary furnaces are located in Building 422 and are used to heat treat gear components and similar parts at "austentizing" temperatures (typically 1,500°F to 1,525°F) prior to press-quenching. The furnaces are equipped with an oxygen probe for atmosphere control and a thermocouple for temperature control. Nitrogen and methanol are injected into the furnace to maintain a reducing atmosphere during processing. An alternative operating mode would utilize natural gas for atmospheric control, rather than nitrogen and methanol. This change does not significantly affect the composition or amounts of pollutants generated by the furnace reactions. A generalized flow diagram is provided in Figure 2-13.

The cycle times in the furnace are typically one to two hours before quenching. Furnace gases escape through an opening in the furnace door located under a fume hood which vents to atmosphere. The combustion and reaction byproducts that are emitted from the furnaces are carbon monoxide, carbon dioxide, hydrogen, and nitrogen.

The estimated usage of methanol for rotary furnaces is 30 gallons per day, supplied from the 6,000 gallon AST near Building 422. Nitrogen and methanol usage is uniformly

distributed throughout the year. No pollution control equipment is associated with this process.

Normal operating hours for the rotary furnaces range up to 7,500 hours per year. For purposes of potential emissions estimates, maximum operating hours are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.8 Hard Chrome Plating Line

There is a single chrome electroplating line at the facility, located in Building 422 and comprised of five (5) permitted tanks. The plating process involves moving racks of parts along a series of tanks that and plating baths. The baths contain acidic, caustic, hot rinse water, and chromium solutions, and are covered by fume hoods and vented to atmosphere via a dedicated chrome line wet scrubber, as listed in Table 2-1. Materials used in the chrome plating line consist of several chemicals listed in Appendix A, Tables A-6 & A-7 and the attached Equipment List.

In electroplating, the metal to be deposited is used as the anode to supply metal ions that deposit on the parts hanging from the cathode bar. The parts are dipped into a sequence of tanks including acid baths, alkaline baths, hot and cold water rinses, for cleaning and pretreatment of the surface, with the plating or material in a tank containing the chromic acid solution. The parts are usually cleaned after plating, and masked prior to moving through the plating line. The dedicated chrome line scrubber, rated nominally at 25,000 cfm, meets NESHAP regulatory specifications for pollution control equipment associated with this hard chrome plating process. A generalized flow diagram is provided in Figure 2-15.

Normal operating hours for all plating applications range from 1,872 hours per year to 8,760 hours per year. For purposes of potential emissions estimates, maximum operating hours are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.9 Metallic Plating Operations other than Chrome

At the facility, black oxide, copper, nickel and silver are plated onto the surfaces of certain parts either chemically or through electroplating. These processes are performed in separate plating lines that consist of a total of twenty eight (28) permitted process tanks and five (5) "secondary process tanks", as listed in the attached Equipment List. All plating operations are located in Building 422. Among these lines, the electroless nickel (Ni) plating line is subject to specific NESHAP emission control requirements; however, the other lines have comparable emission controls.

In electroplating, the metal to be deposited is used as the anode to supply metal ions that deposit on the parts hanging from the cathode bar. In chemical plating, the parts are dipped, into tanks containing the metallic solutions to be plated and the metal is deposited by chemical reaction. The parts are usually cleaned and masked prior to moving through the plating line. The plating process involves placing the parts in a series of tanks that include acid baths, alkaline baths, hot and cold water rinses, and plating baths. Materials used in the plating line consist of many different chemicals listed in Appendix A, Tables A-6 & A-7. The specific materials used at any one time depend upon the desired product. Scrubbers on the roof of Building 422 are the pollution control equipment associated with the metallic plating lines, as identified in the Equipment List and described in Table 2-1. Generalized flow diagrams for plating lines other than chrome are provided in Figures 2-16 through 2-20.

Table 2-1. Roster of Scrubbers Serving Metal Plating Lines

Equipment	Process Description
Scrubber - Chrome 92415005	Exhaust fume from hard chrome electro-plating tanks #62 (PM 94903191), #64 (PM 94903193), #68 (PM 94903197) and potentially other tanks in Building_422.
Scrubber - Cyanide 92415006	Exhaust fume from plating operations from High Speed Silver Plating Tanks #35A (PM #94903164) and #36 (PM #94903166); Silver Strike Tank #37 (PM #94903167); Copper Strike Tanks #46 (PM # 94903176) and #55 (PM #94903184); Cyanide Copper Hi-Efficiency Tanks #48 (PM #94903178) #49 (PM #94903179) and #57 (PM #94903186) in Building 422.
Scrubber - Acid-Alkali 92415007	Exhaust fume from plating operations from Electroless Nickel Tank #19 (PM # 94903149), Black Oxide Plating Tank #77 (PM #94903206), Hot Acidified Rinse Tank #80 (PM #94903), Nitric Acid Tank # 24, Cold Water Rinse Tank # 78, Oakite Derust Tank # 75 and Lead Anode Cleaner Tank # 73 in Building 422.
Scrubber - Nital Etch 92415013	Exhaust fume from a Muriatic Acid Pickle tank, a Triple Cascade Rinse tank, a Hot DI Water Rinse tank, an Electro-Alkaline Cleaner tank, and an Oakite Rustripper tank.
Scrubber - Roof West 92415019	Exhaust fume from a Chromic Acid Copper Strip tank, a Nickel Chloride Strike tank, a Triple Cascade Rinse tank, an Alkaline Strip tank, a Nitric Acid Strip, and a Dewax tank.
Scrubber - Roof East 92415020	Exhaust fume from a Muriatic pickle tank, Alkaline Copper strip, Nitric Acid strip, Triple cascade rinse, DE WAX and Nickel Chloride tank. Potential pollutants are: HCl droplet, HNO3 droplet, Ammonium Hydroxide and Nickel
Scrubber - Nitride 92415026	Exhaust fumes from two (2) Nitriding furnaces in Building 422

Normal operating hours for plating applications range from 1,872 hours per year to 8,760 hours per year. For purposes of potential emissions estimates, maximum operating hours are assumed to be 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.10 Component Rig Testing

One type of testing operation in use at the facility is termed "rig testing", in which a portion or component of an engine will be tested in a heated air stream that simulates the aircraft operating environment. This type of testing is often less expensive and faster, and often can be accomplished before a complete engine is available to test. Examples of rig testing include, but are not limited to, corrosion evaluations, and functional component tests for fan, compressor, combustor, turbine, bearing, seal or gearbox parts.

Rig testing is performed in eight (8) test rig units that are equipped to simulate the engine environment in terms of pressure, temperature and air flow. As listed in the attached Equipment List, these units have heat input ratings ranging from 0.44 to 3.82 MMBtu/hr, and are located in Building 116. For certain rig tests, different fluids may be run through the engine parts to simulate actual operating environment.

There is no pollution control equipment associated with this process, which can be viewed as a variation on the test cell operation for complete engines. Normal operating hours for rig testing range from 0 hours to 5,000 hours per year. For purposes of potential emissions estimates, maximum operating hours are assumed to be 24 hours a day, 365 days a year. No alternate operating scenarios exist for this process equipment.

2.3.11 Stereolithography Model-Making - Liquid Vapor Blast and Cleaning

In the Materials Lab, located in Building 302, prototype models of relatively small specialized parts and components are fabricated on Stereolithography machines. The surfaces of the models may be treated by a small liquid/vapor enclosed blast unit that uses garnet media as the abrasive. Particulate emissions from the blast cleaner are negligible as the unit is enclosed, and is not vented to atmosphere. The equipment is considered insignificant sources of emission and therefore not included on the equipment list. In addition, the garnet is suspended in a liquid slurry that contacts the part. This abrasive blast step creates a matte finish on the Stereolithography parts, and is applied infrequently (1-2 times a month).

Preparation of the Stereolithography models also includes dip cleaning and rinsing of the prototype parts in a specialized solvent (tripropyleneglycol methyl ether, or TPM). Models are cleaned in the TPM tank after fabrication, followed by a tap water rinse. Spent TPM and rinse water is handled and disposed as a possibly hazardous waste by a contractor. Emissions from this bench-top process are small, and limited to fugitive evaporative losses of the TPM cleaning solvent (97.5% HAP content), which are included in Appendix A, Table A-10. As a bench-top, non-production operation with small emissions, the Stereolithography equipment and activities warrant designation as Insignificant.

2.3.12 Solvent Parts Washers and Flush Booths

Cleaning of various components and engine hardware is accomplished various types of parts washers, and enclosed "flush cleaning" booths. There are fifteen (15) such units at the Engines facility: one (1) each in Buildings 110, 112, 422, 206, and 129, two (2) each in Building 202, and eight (8) booths in Building 301. These units generally contain Safety-Kleen products, acetone, or Stoddard solvents.

The flush-cleaning booths are sealed compartments when in use, and the solvent may be flushed or sprayed onto the part for cleaning. For spray cleaning, the solvents are applied by high-volume, low-pressure (HVLP) nozzle(s), which are designed and operated to meet the requirements in MCAQD Rule 331. There are integral remote tanks that contain and store the circulating solvent for each booth. Several parts washers are conventional sink-type units, with integral remote tanks and a hand-held flush nozzle. These units are open during use, and closed with a sealed lid when not in use.

Fuel and oil contaminants as well as carbon will accumulate in the solvent during repeated cleaning processes. Contaminated solvent is collected and removed from the site by a contractor. Solvent usage is distributed approximately uniformly throughout the year. There is no pollution control equipment associated with this type of cleaning unit. A generalized flow diagram is provided in Figure 2-21.

Normal operating hours range from 35 hours per year to 2,080 hours per year. For purposes of potential emissions estimates, maximum solvent usage is scaled from actual levels to the equivalent of operating 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.13 Solvent Dip Cleaning Equipment

The most widespread cleaning technique at the facility is the use of dip cleaning tanks. There are approximately eighty (80) identified and permitted solvent dip cleaning units of various sizes at the facility. At the time of this application, nearly all of these units

are located in Buildings 103 (64 cleaners) and Building 403 (6 cleaners), a single cleaner in Buildings 116, 302, and 422, three in Building 402 and four in Building 301. As listed in the attached Equipment List, these dip cleaners utilize one of several brands of Stoddard solvent. These dip cleaners have lids with are closed when parts are not being introduced or removed. Solvent use is equally distributed throughout the year. Other than the closed lid, and other measures to reduce evaporation as required under MCAQD Rule 331, there is no add-on pollution control equipment associated with these cleaners. For purposes of potential emissions estimates, maximum solvent usage is scaled from actual levels to the equivalent of operating 24 hours per day, 365 days per year. No alternate operating scenarios exist for this process equipment.

2.3.14 Jet Engine Test Cells

One of the largest contributors to emissions for the Engines facility is operation of fifty three (53) Test Cells used to test the performance of completed engines. In general, this testing involves stationary operation of various models of jet turbine engines and auxiliary power unit (APU) engines through specified test sequences designed to verify the engine performance specifications and durability. In addition, the engines must satisfy the requirements of various regulatory agencies such as the FAA, CAA and military service units, and customer performance criteria. The Test Cells are specialized structures with engine mounting fixtures, air handling to provide ambient air intake and exhaust, instrumentation and controls, and sound dampening construction.

For a test, an engine is installed in the test cell fixture, and operated in an environment that simulates a specified surrounding air flow and temperature regime. Aviation fuels such as Jet A, JP-4, JP-5, JP-8, and DF-2 as well as diesel fuel (No. 2 distillate) and natural gas are used to fuel the engines. Normally, the fuel is supplied directly from an underground storage tanks at the facility. On infrequent occasions a test cell may test an engine operating on a different fuel that is delivered to that test cell in drums. In addition, an air heater (as described in Section 2.2.2) may be used to pre-heat the ambient air flowing through a test cell. This air flow and the products of combustion are exhausted through test cell stacks to the atmosphere. No pollution control equipment is associated with the process. A generalized flow diagram is provided in Figure 2-22.

Eight (8) existing test cells have been altered or modified in a manner that has trigger new source review emission limitations. For these eight test cells (some with dual test stands), the number and duration of engine tests during any 12-month period is limited to 1,000 hours per year in the existing permit to keep annual emissions of these modified test cells below Rule 241 BACT thresholds. Each of other test cells utilized for engine testing are normally operated from two hours per year to 1,560 hours per year. For purposes of potential emissions estimates, maximum annual operating hours for cells without are assumed to be no more than 6,135 hours per year, to account for a minimum

required set up time between tests. There are no add-on emission controls on the test cells, as engine testing equipment is generally exempt from emission control standards.

2.3.15 Biologically-Enhanced Soil Vapor Extraction (BSVE)

The BSVE system at the Honeywell facility has been in operation since mid-2009. Over fifty (50) injection/extraction wells are connected to the BSVE system and can supply the soil vapor that is treated. The well-field covers an area that includes parts of the Honeywell facility property and the adjacent North Airfield. The process description provided in this section includes all of the currently installed BSVE equipment. With the exception of periodic maintenance shut-downs of the system, the BSVE system is assumed to operate 24 hours per day, 7 days per week.

Equipment Description. The BSVE system currently consists of a 3,300-standard cubic feet per minute (scfm) vapor treatment system connected to more than 50 injection/extraction wells as described above using a blower and piping system. The BSVE system consists of the following equipment:

- Air injection blower (2);
- Air/liquid separator (1);
- Vapor extraction air filter (1);
- Vapor extraction blowers (2);
- Thermal oxidizer (1);
- Scrubber (1);
- Caustic feed pump (1);
- Heat exchanger (1);
- Demister (1);
- Cooling tower (1);
- Booster blower (1);
- Granulated Activated Carbon (VGAC) vessels (3); and
- Potassium Permanganate Adsorber (PPA) vessels (2)

BSVE Process Description – A generalized flow diagram for the BSVE treatment and emission control system is provided in Figure 2-23. Collected soil vapor is filtered prior to entering the soil vapor treatment system to capture entrained particulate matter (PM). If necessary, the vapor is then blended with ambient air. The soil vapor then enters the

applicable emissions control devices, which is dependent on the operating scenario under which the BSVE system is currently operating, as described below.. The treated air exiting the BSVE system is vented to the atmosphere through a single 2-foot-diameter stack. However, when the total inlet process vapor flow is less than or equal to than 3,300 scfm, the stack is modified using a conical restriction or similar device to achieve an 18-inch diameter. The stack height is approximately 44 feet above ground. The exhaust flow rate of gases from the stack is approximately 3,600 actual cubic feet per minute (acfm) when operating under AOS-1, and could be up to 5,900 acfm when operating under AOS-4 or AOS-5.

Honeywell currently is permitted for five (5) alternate operating scenarios for the BSVE system. However, two of the scenarios are no longer expected to be used and are not included in this renewal. These scenarios are AOS-2 and AOS-3. Only scenarios which have the potential to be used in the future are included in this process description and permit renewal. The BSVE system is currently operating under AOS-4, based on the treatment progress criteria identified in the facility permit.

The operating scenarios are as follows:

BSVE Alternate Operating Scenario 1 – AOS-1 is the operating scenario that was implemented initially for the BSVE system and has a maximum treatment capacity of 3,300 scfm of extracted soil vapor. In AOS-1, the extracted soil vapor is treated in a thermal oxidizer unit (SCC# 10300603) to destroy methane, jet fuel components, and chlorinated volatile organic compounds (CVOCs). During oxidizer start-up, and as needed to maintain the minimum operating temperature, natural gas is added as a supplemental fuel to the oxidizer. Oxidizer temperature is controlled in a range to achieve greater than 99 percent destruction efficiency for VOCs. During combustion, chlorinated and fluorinated VOCs in the soil vapor are chemically converted to form hydrochloric acid (HCl) and hydrofluoric acid (HF), respectively. These acid gases, to the extent they may be generated, are then removed in a caustic scrubber system downstream from the oxidizer.

Final treatment steps in AOS-1 use a minimum of two vapor-phase granulated activated carbon (VGAC) units and two potassium permanganate adsorbent (PPA) units to remove the low concentration levels of petroleum hydrocarbon and chlorinated VOCs that may remain after combustion. In particular, the PPA units are included for capture of vinyl chloride, if present, since vinyl chloride will not be adsorbed on the VGAC. Spent VGAC and PPA adsorbents are not regenerated on site but are replaced as necessary. Prior to entering the VGAC units, the cooled gases exiting the scrubber are reheated in a booster blower to lower the relative humidity of the air stream to allow more efficient activated carbon utilization. The treated vapors are then discharged to ambient air via a 24-inch diameter stack fitted with a reducer to decrease the exit diameter to 18 inches.

BSVE Alternate Operating Scenario 4 – AOS-4 has a maximum capacity of 5,300 scfm of incoming soil vapor based on current permit conditions. In AOS-4, the thermal oxidizer, scrubber and associated equipment used in AOS-1 are no longer in use. The extracted soil vapor is treated in three VGAC units followed by two PPA units. Prior to entering the VGAC units, the gases are cooled in the heat exchanger and then reheated in a booster blower to lower the relative humidity of the air stream to allow more efficient activated carbon utilization. Downstream of the VGAC and PPA units, treated air/vapor is discharged to ambient air via a 24-inch diameter stack. (Note: This stack was fitted with a reducer to decrease the exit diameter to 18 inches when the BSVE system operated under AOS-1 conditions, i.e., 3,300 scfm or less).

BSVE Alternate Operating Scenario 5 – AOS-5 has a maximum capacity of 5,300 scfm of incoming soil vapor based on current permit conditions. In AOS-5, the PPA units used in AOS-4 are no longer in use due the absence of vinyl chloride in the soil vapor. The extracted soil vapor is treated in three VGAC units. Prior to entering the VGAC units, the cooled gases exiting the scrubber are reheated in a booster blower to lower the relative humidity of the air stream to allow more efficient activated carbon utilization. The treated vapors are then discharged to ambient air via a 24-inch diameter stack fitted with a reducer to decrease the exit diameter to 18 inches when the BSVE system is operating under AOS-1 conditions (i.e., 3,300 scfm or less).

As a consequence of the continued reduction in contaminant concentrations observed during monthly inlet sampling activities, the switch in operation from AOS-1 to AOS-4, occurred on August 31, 2015, in accordance with current operating permit conditions. Honeywell anticipates that AOS-4 will be utilized for the remaining stage of the remediation process and does not anticipate the need to return to AOS-1. However, the operating scenario will remain in the permit.

BSVE System Equipment Description - The following describes each piece of equipment associated with the BSVE system. Different combinations of the equipment comprise the BSVE system configuration in the different Operating Scenarios described above and in the attached equipment lists.

Air/Liquid Separator – The air/liquid separator is a vessel that allows entrained moisture droplets to separate by centrifugal motion from the vapor stream. The air/liquid separator is not a control device, and the vapor stream to be treated exits the separator and passes through the particulate filter.

Particulate Filter – The vapor extraction particulate filter is a high-efficiency fabric filtration device that removes particulate matter (PM) in the inlet soil gas stream.

Vapor Extraction Blowers – The vapor extraction blowers extract the soil gases including volatile organic compounds (VOCs) and methane from the subsurface, via the extraction wells. The blowers convey these vapors through the system train for treatment.

Thermal Oxidizer (AOS-1 only) – The thermal oxidizer treats the soil gases in a high temperature chamber (1,400 to 1,800°F), to combust organic constituents in the gas stream. The primary pollutants from the thermal oxidizer are acid gases, NO_X, CO, and undestroyed VOCs. Additionally, thermal oxidizer effluent can contain PM, sulfur dioxide (SO_2), low molecular weight non-VOC hydrocarbons (methane or ethane), and high-molecular-weight compounds (for example, polychlorinated dibenzo-p-dioxins and dibenzofurans [PCDD/PCDF]). The BSVE thermal oxidizer also uses supplemental fuel (natural gas) and a combustion air blower during initial startup and to maintain the operating temperature of the oxidizer. The treated stream exiting the oxidizer directly enters the wet scrubbers.

Based on vendor information, the thermal oxidizer has a minimum guaranteed VOC destruction efficiency of 99 percent. Stack testing of the BSVE system is used to determine the actual VOC emission rate and destruction efficiency, and to verify compliance with permit limits.

Scrubber (AOS-1 only) – Emission control of acid gases is provided in the BSVE system by a spray tower scrubber. Circulating water that may contain injected alkaline reagent is sprayed by a bank of nozzles down the tower as the exhaust gases pass upward. Acid gases are absorbed/neutralized by the scrubbing liquid. The scrubber exit gas stream is routed through the VGAC vessels via the heat exchanger, demister, and booster blower.

Based on vendor information, the spray tower scrubber has a minimum guaranteed acid gas removal efficiency of 99 percent. Stack testing of the system is used to determine the actual acid gas emission rate and verify compliance with permit limits.

Caustic Feed Pump – The caustic feed pump supplies the scrubber with the caustic solution necessary to maintain the pH in the circulating scrubber liquor for proper operation. The caustic feed pump is not a control device, and does not directly interact with the vapor stream.

Heat Exchanger – The heat exchanger removes additional heat from the treated gas stream and lowers the water vapor-bearing capacity of the vapor stream. The heat exchanger is not a control device, and the gas stream from the heat exchanger exit is routed through the demister.

Demister – The demister removes condensed water droplets in the treated vapor stream as a result of condensation in the heat exchanger. The demister has the benefit of

removing aerosol droplets that are a component of PM emissions. From the demister, the treated stream enters the booster blower(s).

Booster Blower – The booster blower conveys the treated stream through the VGAC and PPA vessels. The booster blower is not a control device and does not add or remove air from the vapor stream. The booster blower discharges to the VGAC units.

Vapor Phase Granular Activated Carbon Units – The VGAC units are designed to remove trace amounts of VOCs (excluding vinyl chloride) that are not combusted in the thermal oxidizer by adsorption onto the porous carbon surface. The treated stream exiting the VGAC vessels is routed to the PPA vessels (unless modified as described for AOS-5).

Information from carbon vendors indicates that VOC removal rates range from 80 percent to more than 99 percent efficiency depending on the compound (except for vinyl chloride which is not adsorbed) in a single carbon adsorption unit. Stack testing of the system is used to determine the actual removal efficiency and VOC emission rate, and to verify compliance with permit limits.

Potassium Permanganate (PPA) Vessels – The PPA vessels are designed to remove trace amounts of vinyl chloride that may remain in the treated gases downstream of the thermal oxidizer and/or VGAC units. Information from the vendors for the PPA technology indicates 99 percent removal efficiency for vinyl chloride in a single PPA unit. The PPA vessels discharge to the stack.

Air Injection Blowers – The air injection blowers are not part of the vapor treatment train, but represent the "bioenhanced" function of the overall BSVE process. These blowers supply oxygen to the subsurface zone, via injection wells, to enhance aerobic biodegradation of hydrocarbon molecules. The injection blowers are rated for a cumulative flow of 3,300 scfm). In accordance with MCAQD Rule 200 §308.1c the air injection blowers are an insignificant source.

Cooling Tower – The BSVE system cooling tower provides cooling water for the heat exchanger and is otherwise used to control the temperature of the process vapor stream. The cooling water does not come into contact with the vapor stream in the heat exchanger, and the cooling tower is not a control device. The BSVE cooling tower is an insignificant source.

2.4 LIST OF INSIGNIFICANT SOURCES AND ACTIVITIES

The following is a list of sources and activities proposed to be deemed insignificant at the Honeywell Engines facility. A number of these are not specifically listed in the

"Insignificant Activities" provided in Appendix D of the Maricopa County Air Pollution Control Regulations. However, these facility-specific sources and activities, listed for the Engines facility in Section 2.4.1 and for the BSVE in Section 2.4.2, meet the definition of Insignificant Activity in Rule 100 of those regulations.

As part of this renewal permit process, the Engines facility requests that MCAQD acknowledge in the final permit that the sources listed below are insignificant, due to the nature of the activity or process, and inherently low level of emissions.

2.4.1 Facility-Specific Insignificant Sources

- Paint Booths – The site has small booths with exhaust fans and filters on them that are used for low-usage coating application on a very small scale. They are used for Dry Lube application and for touch up paint application on pre-fabricated parts for assembly. These booths individually and combined use less than one (1) gallon per day and are proposed to be deemed insignificant per Maricopa County Appendix D – List of Insignificant Activities.

- Flame Spray – The site has a paint booth in a non-manufacturing area where thermal sensitive paints are applied to test components and these coatings change color during testing depending on the heat distribution of the part. This booth uses less than one (1) gallon per day and is proposed to be deemed insignificant per Maricopa County Appendix D – List of Insignificant Activities.

- Laser Drill Activities – Lasers are used to drill tiny holes into parts for air flow-through. After discussion with Maricopa County in November and December 2008, the activity was deemed insignificant per Appendix D, Miscellaneous category 5.

- Blade Tip Grinders – The site uses grinding machines called Blade Tip Grinders for the trimming of the circumference edge and corner of Rotor and Fan Blades. This machine removes not more than 80 thousandths of an inch of material to ensure they meet FAA tolerances. As an extra measure of housekeeping, the grinders vent to dust collectors. Even without the dust collectors, and with a hypothetical full-time operating schedule, these grinders have potential to emit much less than several hundred pounds per year of PM. The combined reduction due to inherent part-time schedule and the dust collectors are proposed to qualify these units as insignificant.

- Stereolithography liquid blast surface treatment – Small prototyping of component models that may have a matte finish surface treatment applied using a slurry blast system. The media contains garnet abrasive suspended in liquid

slurry that is impinged on the part. These small bench-top units, and similar test part polishing steps performed in enclosed blasting cabinets, are proposed to be deemed insignificant.

- Fuel Nozzle Test Stands - A variety of engine fuel system components (e.g. manifold, flow divider, nozzle/atomizer, fuel control, fuel pump, etc.) are functionally tested in enclosed fuel nozzle test stands. These stands use a commonly accepted industry calibration fluid (MIL C 7202) as a surrogate for combustible fuel. The fluid is heated to operating temperature, and re-circulated during the test period. The calibration fluid is of low volatility and consumed at a very low rate due to fugitive losses from the from the test stand enclosure. Several of these test stands for inclusion in the permit are (single test stands located in Buildings 116 and 208, and 5 test stands in Building 211) are vented to atmosphere. However, there are similar nozzle test stands that are not vented to atmosphere and are proposed to be considered insignificant sources.

- Oils/solvents fill station – A covered material distribution structure is located at the facility at which small quantities of lubrication oils, solvents and other liquid materials are dispensed to truck mounted or hand-held containers. The facility houses small storage tanks (<250 gallons) of bulk oils, lubricants, additives, and some solvents. These materials are used throughout the production and testing operations. Emissions from the material transfers are not separately quantified at this location. However, emissions from material usage are accounted for by site-wide material consumption records. The fill station emissions alone, depending on the material, are either insignificant or accounted for elsewhere for the facility.

- Emergency Wet Scrubber at WWTP - An existing wet scrubber at the facility waste water treatment plant serving a batch treatment process. The scrubber (No. 924015025) may operate in an emergency only if abnormally high chlorine is detected in the building interior. It exhausts interior air through a wetted media to remove soluble gases. The operation of this unit is infrequent and unpredictable, and overall emissions are negligible.

- Cooling Towers - The cooling towers at the Engines facility primarily serve building HVAC systems, so are considered exempt emission sources. Small cooling towers that in part serve process cooling or condensers have been analyzed, and have emissions that are within insignificant levels (as defined in APCR Regulation III, Appendix D).

- 3D Prototype Printer Systems – New 3D printers now operate at the Engines facility, to create parts used for prototyping and testing. These may generate

either plastic or metal alloy parts. Emissions from these devices are negligible, and are not vented to the atmosphere.

2.4.2 BSVE Specific Insignificant Sources

- BSVE Cooling Tower – A relatively small cooling tower is used in the BSVE system to provide cooled heat transfer water. According to manufacturer data for the cooling tower (Marley Cooling Technologies Model AV61031), it has a water circulation rate of 231 gallons per minute and a drift rate (emission of aerosol droplets as a percent of the circulation flow) of 0.005 percent. Appendix D of the MCAQD rules states that a cooling tower is insignificant if it meets the following two conditions: (1) the circulation rate is less than 10,000 gpm and (2) the cooling tower is not used to cool process water, water from barometric jets, or water from barometric condensers. Therefore, in accordance with MCAQD Rule 200 § 309.1c, it is proposed that this cooling tower be determined to be insignificant.

- Air Injection – BSVE air injection blowers supply oxygen into the subsurface to enhance the natural biodegradation of contaminants in the subsurface. The air injected into the subsurface is targeted within the estimated radius of influence of the extraction wells. Emissions from the air injection system have been determined to be negligible, and air injection is therefore an insignificant activity.

- BSVE Free Liquid Storage – The current BSVE design also includes provisions to recover free-product liquids, as necessary, from three wells located on the Facility and wells located on the Sky Harbor North Airfield. Long-term free-product recovery is expected to be less than 1 gallon per day, per well. Free product will be recovered using pneumatic submersible skimmer pumps installed in the wells. On the Honeywell Facility, the free liquid product will be stored in closed 55-gallon drums. On the North Airfield, free product will be piped back to a central collection container located away from the North Airfield. Although free product storage is included in this application due to storage of fuel products elsewhere at the facility, emissions from filling of the small drums were not calculated for this activity. Emissions will be negligible because the vapor pressure of jet fuel (the predominant recovered liquid) is <1.5 pounds per square inch absolute (psia). Therefore, it is proposed that this liquid storage and transfer activity be deemed insignificant.

2.4.3 General Categories of Insignificant Sources

There are a number of the Insignificant Sources and Activities identified in Appendix D of the MCAQD Air Pollution Control Regulations that are associated with operation of the facility:

- Natural-gas fired equipment with an input rating less than 300,000 Btu/hr. Such equipment may include gas-fired space heaters, water heaters, and equipment used solely for heating buildings or for producing hot water for personal use.
- Non-vapor cleaning machines (degreaser) or dip-tank having a liquid surface area of 1 square foot or less, or having a maximum capacity of 1 gallon or less.
- Manually-operated equipment and related activities for buffing, carving, cutting, drilling, machining, routing, sanding, sawing, surface grinding or turning, and associated venting hoods.
- Chemical Laboratories – including lab equipment used exclusively for chemical and physical analysis.
- Pressurized, unvented storage and piping for natural gas, carbon dioxide, butane, propane, or liquefied petroleum gas.
- Storage and handling of unheated organic materials with:
    - An initial boiling point of 150 ^{o}C or greater;
    - A vapor pressure of no more than 5 mmHg (0.1 psia).
- Chemical or petroleum storage tanks or containers that hold 250 gallons or less and would have emissions of a regulated air pollutant;
- Emissions units, operations or activities that handles or stores no more than 12,000 gallons of a liquid with a vapor pressure less than 1.5 psia. There are a number of 10,000 gallon underground storage tanks at the facility for aviation fuels that are in this category.
- Equipment with a capacity of no more than 4.200 gallons used exclusively to store oil with a specific gravity of 0.8762 (30^{o} API or lower)
- Cooling towers having a circulation rate of less than 10,000 gallons per minute, and which are not used to cool process water.
- Brazing, soldering, welding, or cutting torch equipment used in manufacturing and construction activities and with the potential to emit hazardous air pollutant (HAP) metals, provided the emissions of HAPs do not exceed 0.5 tons per year.
- Water and wastewater treatment:
    - Water treatment or storage systems for facility service and potable water.
    - Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or used within the permitted facility.
    - VOC emissions from the cooling tower(s).
- Individual flanges, valves, pump seals, pressure relief valves, and other individual components not in VOC service that have the potential for leaks.
- Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing.

- Use of material applied from aerosol cans for facility/vehicle maintenance and part touch-up.
- Acetylene, butane, and propane torches.
- Equipment used for portable steam cleaning.
- Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.
- Production of hot/chilled water for on-site use.
- General vehicle maintenance and servicing activities.
- Storage cabinets for flammable products.
- Activities associated with the construction, repair, and maintenance of paved or open areas, including street sweepers, vacuum trucks, and vehicles related to the control of fugitive emissions of such roads or open areas.
- Employee car and plant operations and maintenance light truck traffic on paved and unpaved public and private roadways.

2.5 LIST OF TRIVIAL SOURCES AND ACTIVITIES

The following is a list of general activities which will occur at Honeywell, which fall under the definition of "Trivial Activities" based on Appendix E to the Maricopa County Air Pollution Control Regulations:

- Portable internal combustion (IC) engines used for grounds keeping, plant maintenance, and landscaping purposes.
- Electric generating unit ancillary equipment such as transformers, switchgear, and inter-connections.
- Ventilation units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
- Consumer use of office equipment and products, not including printers or businesses primarily involved in photographic reproduction.
- Bathroom/toilet vent emissions.
- Tobacco smoking rooms and areas.
- Consumer use of paper trimmers/binders.
- Janitorial services and consumer use of janitorial products.
- Plant maintenance and upkeep activities (e.g., grounds keeping, general repairs, cleaning, painting, welding, brazing, soldering, plumbing, re-tarring roofs, installing insulation, and paving and sealing parking lots) provided these

activities are not the source's primary business activity (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements).

- Repair or maintenance shop activities not related to the source's primary business activity (excluding emissions from surface coating or degreasing activities).
- Housekeeping activities and associated products used for cleaning purposes, including collecting spilled and accumulated materials at the source, including operation of fixed vacuum cleaning systems specifically for such purposes.
- Lubricating and hydraulic system reservoirs and vents.
- Portable electric generators that can be moved by hand from one location to another.
- Air compressors and pneumatically operated equipment including hand tools.
- Fire suppression systems.
- Street and parking lot striping.
- Batteries and battery charging stations.
- Garbage and waste wood handling including processing of recyclable materials, bailing, and compacting.

3 EMISSIONS RELATED INFORMATION

Emissions of regulated pollutants from the equipment and activities at the Honeywell Engines facility have been quantified conservatively, based on the procedures and assumptions described in this section. For most sources, the procedures used for this application match the techniques applied to prepare the annual emissions inventory. In some cases, such as the release of acids from plating operations, a more detailed and somewhat less conservative mass-transfer model is used. As outlined in this section, some methodologies are better-suited to estimation of annual potential to emit for sources that do not operate continuously, or for material usage activities.

Detailed calculations for maximum anticipated emissions, which incorporate the voluntary operational limits, are provided in the spreadsheet tables contained in Appendix A. The detailed emission calculations pertaining to the BSVE system are provided in Appendix E and incorporate operational limits and control efficiencies specified in the current operating permit.

3.1 OVERVIEW OF EMISSION INVENTORY

This Title V renewal application provides pollutant emission information for existing sources at the Honeywell Engines facility. Emissions of NO_X, CO, VOCs, PM, PM_{10}, $PM_{2.5}$ and HAPs were calculated for each source. Although there is neither an established major source threshold nor regulatory requirements for $PM_{2.5}$ in current regulations, the calculated emissions for $PM_{2.5}$ are presented in this inventory for informational purposes. Knowledge of $PM_{2.5}$ emissions may also support the analysis of applicable future EPA regulations, if any, pursuant to the $PM_{2.5}$ standard.

The emission inventory was compiled using information from a review of Honeywell records, information contained in the 2013 and 2014 calendar year site-wide emission inventory, an on-site survey of the equipment, and interviews with facility personnel. The specific information utilized comprised, in part, of operating stationary equipment rosters including corresponding control devices, facility and equipment operating schedules, fuel transfer and consumption data, 2015 analytical data for the BSVE system and when available, historic (2013 and 2014) material usage for VOC-containing products.

The emissions inventory is provided in the form of an Excel workbook and other spreadsheets to analyze facility data and calculate air emissions. The references for the emissions characteristics and emissions factors for these spreadsheets are:

- AP-42, Fifth Edition, Volume I – Stationary Point and Area Sources, U.S. Environmental Protection Agency (U.S. EPA), as presented on the EPA/TTN website, accessed March– April 2015.

- EPA Document; *Locating and Estimating Air Emissions from Sources of Polycyclic Organic Matter*, Table 4.11.2-1 PAH Emission Concentrations in Aircraft Turbine Engine Exhaust for HAP calculations, July 1998.

- Diffusion Model Used from Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form, EPA-506/4-88-002, December 1987.

Normal Honeywell Engines facility operations occur over approximately 6,864 hr/yr, which equates to 24 hours per day, 5 days per week for 52 weeks per year, plus an additional 12 hours per weekend, 52 weekends per year. For sources having emissions based on time-in-operation, the emission calculations for potential to emit (PTE) scale up the actual operating schedule calculations to a "maximum potential" basis of 8,760 hours per year. The operating schedule specifications for each source category are incorporated in the Appendix A calculations.

For sources not included under the voluntary operational limitations, PTE was conservatively calculated based on scaling actual emissions or material usage from the 6,864 hour/year operating schedule up to 8,760 hours of operation. For sources subject to the operational limits (e.g., annual operating schedule or fuel consumption) the application of the relevant limit was the basis for calculating maximum annual emissions. The spreadsheets included in Appendix A and the Appendix E tables for the BSVE system provide detailed emission estimation calculations for each source.

The units and activities that are considered to be significant sources of emissions at the Honeywell Engines facility include:

- External combustion sources with heat input rating above 300,000 Btu/hr:
    - larger boilers and water heaters;
    - air heaters for engine testing;
    - heated component test rigs; and,
    - natural gas fired test cells.

- Internal combustion, liquid-fuel jet engine test cells;
- Underground storage tanks for aviation fuels and methanol;
- Plating operations including hard chrome electroplating and other metal plating;
- Miscellaneous solvent and chemical product usages (e.g., dip cleaning, other than dip cleaning, product uses at work stations, painting in booths),
- Abrasive blasting units (with ECS);
- Fuel nozzle test stands that are vented to atmosphere;
- Rotary heat treat furnaces;
- Carburizing furnaces; and
- BSVE treatment system and applicable control units.

3.2 SUMMARY OF MAXIMUM ANNUAL EMISSIONS

As described in Section 2.3, there are multiple individual sources belonging to each emission unit category. The emission calculations for individual source are listed in the Appendix A tables and the Appendix E tables for the BSVE system. Based on the facility operating schedule and operational limits that will be continued in the renewed Operating Permit, emissions of criteria pollutants NO_X and CO are above Major Source thresholds for Title V (Class 1) permitting. Table 3-1 provides a summary of facility-wide annual emissions for each criteria pollutant, and total HAPs. Based on the conservative calculations in this application, the single HAP and/or combined HAPs emissions do not exceed the current Operating Permit facility-wide emission limits of 9.0 tons or 22.5 tons, respectively, in Table 18.1, of the current Operating Permit (Appendix D).

Table 3-1
Summary of Stationary Source Potential Emissions
Honeywell Engines, Phoenix, Arizona

Activities	Potential Annual Emissions (tons/yr)							
	CO	NOx	PM	PM-10	PM-2.5	SO_2	VOCs	HAPs
External/Internal Combustion Sources								
Natural Gas Boilers	4.6	4.1	0.41	0.41	0.41	0.03	0.30	0.10
Air Heaters	15.6	15.5	1.41	1.41	1.41	0.11	1.02	0.35
Test Rigs	2.99	3.56	0.27	0.27	0.27	0.02	0.20	0.07
Test Cells (Natural Gas)	0.017	0.067	0.0014	0.0014	0.0014	7.15E-04	4.42E-04	2.64E-04
Test Cells (Distillate Fuel)	2.87	766	10.4	10.4	10.4	28.7	0.36	0.93
Fuel Storage/Transfer								
Horizontal/Cylindrical Tanks	--	--	--	--	--	--	2.7	0.75
Operational Sources								
Plating Other than Chrome	--	--	--	--	--	--	--	1.84E-04
Chromium Electroplating	--	--	0.074	0.074	0.074	--	--	0.074
Abrasive Blasting	--	--	26.8	26.8	26.8	--	--	--
Solvent - Dip Cleaning	--	--	--	--	--	--	1.32	--
Solvent Use - Other than Dip Cleaing	--	--	--	--	--	--	4.31	0.027
Carburizing and Rotary Furnaces	33.7	--	--	--	--	--	--	--
Fuel Nozzle Test Stands	--	--	--	--	--	--	6.70	--

3.3 DISCUSSION OF EMISSION INVENTORY PROCEDURES FOR EACH CATEGORY

3.3.1 External Combustion Sources

The external combustion sources fired with natural gas operating at the Engines facility include boilers, air heaters, and component test rigs having heat input ratings greater than 300,000 Btu/hr. In general, data on the consumption of natural gas by individual pieces of equipment was not available. Therefore, the maximum potential hourly emissions were based on the rated heat input for each existing unit in the external combustion The resultant maximum consumption of gas in cubic feet/hour (cf/hr) was applied to accepted emission factors to calculate maximum hourly emissions. The potential annual emission estimates assume full time, full-load operation of each external combustion source. Detailed calculations of emissions from natural gas-fired boilers, air heaters, and test rigs are presented in Appendix A, Table A-1.

Potential emissions of criteria pollutants from external combustion sources were calculated using emission factors for natural gas combustion of "small commercial heating units" (per AP-42, Section 1.4, Tables 1.4-1 and 1.4-2), operating for 8,760 hours per year, at the rated input level for each such unit. The heat content of the natural gas fuel was taken to be 1,020 Btu/scf. For example, the following procedure was used to calculate potential NO_X emissions for a natural gas fired boiler with capacity above 0.71 MMBtu/hr:

Natural gas Use: $\frac{0.71 \text{ MMBTU}}{\text{hr}} \times \frac{1 \text{ cf of natural gas}}{1.020\text{E-}03 \text{ MMBTU}} = 696 \text{ cf/hr}$

Hourly PTE: $\frac{696 \text{ cf}}{\text{hr}} \times \frac{1 \text{ MM cf}}{1{,}000{,}000 \text{ cf}} \times \frac{100 \text{ lb } NO_X}{\text{MMcf}} = 0.0696 \text{ lb } NO_x/\text{hr}$

Annual PTE: $0.0696 \text{ lb } NO_x/\text{hr} \times \frac{8{,}760 \text{ hr}}{\text{yr}} \times \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.305 \text{ ton } NO_X/\text{yr}$

The method for calculating HAP emissions for natural gas, external combustion equipment categories is the same as that used to calculate potential emissions of criteria pollutants. Potential HAP emissions were calculated by using U.S. EPA AP-42 emission factors (Section 1.4, Tables 1.4-3 and 1.4-4). Detailed HAP calculations of emissions from natural gas-fired boilers, air heaters, and test rigs are presented in Appendix A, Table A-2.

3.3.2 Internal Combustion Sources (Engine Test Cells)

Turbine jet engines and auxiliary power units (APU) are tested at the Engines facility in specialized Test Cell structures. Emissions from engine tests are considered a stationary emissions unit. Tests are conducted through a pre-established operating cycle at various power settings. The fuel flow rates at various power settings for the engine test cells are incorporated into the maximum pollutant emission estimates. Representative test mode durations, fuel flow rates, and power settings were used to calculate potential emissions. No add-on post combustion controls are proposed or feasible for this emission source.

Potential emissions for test cells are based on conservative assumptions for the operating schedule, and the fuel flow rate during "maximum", "normal", and "idle" engine operating mode conditions. It was decided that a weighted average of each fuel rate during "maximum", "normal", and "idle" engine operating mode conditions be used so that one single number was used in determining the potential emissions. Emission factors for criteria and HAP pollutant emissions from combustion of Jet A fuel were either obtained from the facility Title V permit (No. V97-008), or from AP-42, Section 3.1 (Tables 3.1-2a, 3.1-4, and 3.1-5) for distillate fired combustion turbines. Specifically, emissions for criteria pollutants NO_X, CO and VOC were calculated from Table 31.1 in the facility Title V permit, while emission factors for SO_2, PM (total) and HAPs were obtained from AP-42, Section 3.1 (Tables 3.1-2a, 3.1-4, and 3.1-5). It was assumed that the emission factors for PM_{10} also represent the emission factors for $PM_{2.5}$ for these internal combustion sources. PAH emission factors were derived from EPA Document; Locating and Estimating Air Emissions from Sources of Polycyclic Organic Matter, Table 4.11.2-1, July 1998. References for each emission factor are presented in calculation tables Appendix A, Tables A-3 and A-4.

Separate totals were maintained for the two smaller natural gas fired test cell units (#667 and #668). Potential emissions were calculated using AP-42 emission factors (Section 3.1, "Stationary Gas Turbines", Tables 3.1-1 and 3.1-2a). Detailed criteria pollutant and HAP calculations of emissions from the two natural gas-fired test cells are presented in Appendix A, Tables A-1 and A-2.

Operating Schedule for Un-modified (Grandfathered) Test Cells – To calculate potential emissions, Honeywell Engines has assumed the Test Cells will be capable of essentially continuous test operation for sequential tests throughout the year. In practice, it has been found that the engine test schedule does not approach full time operation, as there is not sufficient demand for the maximum feasible number of tests. Also, there is a practical limit on annual operations due to the preparation and set-up time for each engine test. As the basis for calculating potential emissions, Honeywell has used a conservatively high test engine operating schedule of 6,135 hours/yr per Test Cell, based on the maximum projected testing requirements. This is derived by assume a test cycle time of 10 hours/test and providing an allowance of 3 hours for set up/take down time per test:

Annual Test Cell Operation (grandfathered test cell units):

8,760 hr/yr – (876 max. no. tests/yr x 3 hour min. prep time per test) = 6,135 hours/yr

Operating Schedule for Modified Test Cells - Several Test Cells at the facility have undergone modifications since the initial permitting of the Engines facility, and are subject to annual permit limits for NO_X and CO as indicated in Table 31.2 in the facility Title V permit (Appendix D). To maintain emissions in compliance with permit limits, the modified test cells have adopted restrictions on annual operating hours. Honeywell has assumed the maximum duration of engine testing on the modified test cells listed in Table 31.2 can operate no more than 1,000 hours per year for each of the three representative jet engine operating modes. Similarly, the fuel flow rate in each of the three test modes as a percentage of the peak fuel feed pump throughput, and duration per test in each mode will implemented for PTE calculations. These considerations result in a proposed operating schedule, or equivalently a limit on annual test cell fuel input, as an administrative control to effectively limit the potential-to-emit for the annual CO and NO_X limits found in Table 31.2 in the facility Title V permit.

Emission Calculations for Test Cell Operations – The design of an engine test is presumed to comprise three "modes" of operation that can be used to calculate maximum hourly and annual emissions estimates. In practice, the cycle for the engine tests will differ significantly. However, a representative cycle can be derived for purposes of estimating Test Cell emissions on an average, annual basis. For each Test Cell, there is a peak fuel feed pumping rate that represents the limiting factor on the fuel consumption. The engine testing cycle can be described in terms of a percentage of this peak fuel feed rate. For the "maximum" engine output condition the calculations assume conservatively that the fuel input will be the maximum fuel flow capability of the test cell (100% fuel feed rate), and that this mode will occupy 10 percent of the annual testing time. The second and more common mode is "normal" engine output, which is assumed to operate at 80 percent of the maximum fuel feed rate and 40 percent of the annual testing time. Lastly, there is a third engine test mode termed "idle" which was assumed to occupy 50 percent of the total engine testing time at a fuel feed rate of 20 percent of the maximum fuel feed rate. These conditions are also summarized in the table below.

For each criteria pollutant and HAP, estimates of either a maximum hourly rate, or the annual total emissions can be calculated using a published emission factor as described above. The emission factor does not differ for the three operating modes, as it is based on the heat input rate to the engine under test. Hourly and potential criteria emissions in the "normal throttle" test mode are calculated from Test Cell #666 as follows:

Calculation of Hourly PTE, (example NO_X):

Emission Factor (lb/MMBtu) x Fuel Flow Rate (gal/hr) x JP-4 Heating Value (MMBTU/gal) x (Percent Max Fuel Rate) = Emissions (lb/hr)

(0.88 lb/MMBtu)*(224 gal/hr)*(0.1257 MMBtu/gal)*(0.8) = **19.8 lb NO_X/hr**

Calculation of Annual PTE, (example NO_X):

Hourly PTE (lb/hr) x 6135 hr/yr x Percent Duration of Test / 2,000 (lb/ton) = Potential Emissions (ton/yr)

(19.8 lb NO_X /hr)*(1 ton/2,000 lbs)*(6,135 hrs/yr)*(0.4) = **24.3 tons NO_X/yr**

An identical methodology is used for each criteria pollutant and HAP listed in the AP-42 Section. On this basis, emissions of combined HAPs from engine testing amount to about one ton per year. Detailed calculations are provided in Appendix A, Tables A-3 and A-4.

3.3.3 Fuel Storage Tanks

The Honeywell Engines facility has seventeen (17) USTs for storing petroleum products (i.e., Jet-A, JP-4, JP-5 JP-8, and diesel fuel). The seventeen (17) underground storage tanks for fuels are equally sized in length and diameter, and each one has volume capacity of 20,000 gallons. Also on-site is one, 6,000 gallon methanol above-ground storage tank. The petroleum products storage tanks are double-walled, horizontal, cylindrical tanks. The methanol storage tank is a double-walled horizontal tank stored aboveground.

VOC and HAP emissions for tank standing and working losses were calculated based on the methodologies presented in U. S. EPA AP-42, Section 7, which are incorporated into the TANKS model (Version 4.09d). Working losses refer to the emissions from receiving fuel. Standing losses are primarily due to temperature changes and refer to losses from the evaporation of the fuel in the storage tank. The total emissions of VOCs and HAP from fuel storage are the sum of tank vent standing and working losses. The TANKS input includes these characteristics for each of the storage tanks.

The emission calculations for the fuel and methanol storage tanks remain unchanged from the 2010 Title V renewal application, since the mode of operation and potential tank throughputs are unchanged. Tanks containing Jet-A, JP-4, JP-5, JP-8, methanol, and diesel fuel were considered in the PTE calculations. The maximum annual scenario for the test cells and other fuel consuming operations was used to estimate the PTE throughput levels. Operational data for actual tank throughput was developed for comparison from representative calendar year 2009 data. Emissions calculated using the TANKS Version 4.09d are presented in TANKS output files compiled in Appendix C. The emission

contributions for criteria pollutants and HAP from fuel storage tanks and the methanol tank are presented in Appendix A, Table A-5.

3.3.4 Plating Operations Other than Chrome

A mass transfer-based correlation derived for open liquid surfaces is typically used to calculate emissions from acid tanks and from electroplating tanks. To use this correlation to calculate HAP constituent emissions from acid solution and plating baths used in Building 422 plating lines, various properties of the acid/alkaline material in the process tanks must be known. Plating process tank contents and associated tank numbers are shown on the facility equipment list and in Appendix A, Table A-6. The suitable correlation to obtain the emissions of a dissolved constituent in the tank liquid is presented in Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form (EPA-506/4-88-002):

$$W\ (lb/hr) = \frac{M\ (lb/lb\text{-}mole) \times A\ (ft^2) \times P\ (psia\ @\ T1) \times K\ (ft/sec) \times 3600\ (sec/hr)}{R\ (psia\ ft^3/{}^oR\ lb\text{-}mole) \times T1\ ({}^oR)}$$

Where: W = emission rate
M = molecular weight of compound
A = area of tank
P = vapor pressure of compound in solution
K = gas-mass transfer coefficient = $0.011479 \times U^{0.78} / M^{(1/3)}$
U = wind speed in miles per hour (assume 1 mile/hr)
R = gas constant = 10.73
T1 = absolute temperature of solution ($^oR = {}^oF + 460$)

The correlation supplies an estimate of the "uncontrolled" release rate from the bath surface. Acid/Alkaline emissions from metallic plating operations located in Building 422 are abated by the following scrubbers listed below:

- Chrome Scrubber #92415005
- Acid/Alkali Scrubber #92415007
- Nital Etch Scrubber #92415013
- Wet Scrubber #92415019
- East Scrubber #92415020

Emission calculations for plating operations other than chrome are presented in Appendix A, Table A-6. The wet scrubbers for these plating operations will conservatively reduce emissions of acidic components by 95 percent. The following example illustrates the use of the mass transfer correction for emission calculations from Tank #3 containing sulfuric acid:

Calculation of Hourly PTE (W):

Potential Emission Rate from Tank #3, area = 16 square feet, 91% H_2SO_4 solution:

(98.08 lb/mol) x (16 ft^2) x (0.0404 mmHg) x (0.91) x (1psi/51.7 mmHg) x (0.0038 ft/s) x 3600 (sec/hr)/10.73 x (535 R) = 2.62E-03 lb H_2SO_4/hr

Calculation of Annual PTE

Hourly PTE (lb/hr) x 8760 hr/yr x (1-Control Efficiency) = Potential Emissions (lb/yr)

Annual Potential Emissions (H_2SO_4):

(2.62E-03 lb H_2SO_4/hr) x (8,760 hrs/yr) x (1-.95) = 1.15 lb H_2SO_4/yr

3.3.5 Hard Chromium Electroplating

Emission factors the facility hard chrome electroplating line in Building 422 can be calculated using the regulatory emission standard and related operating parameters. These factors presume a controlled emission rate, which corresponds to the operation of the Chrome Line Scrubber # 92415005. Federal standards for small, hard chrome electroplating facilities (maximum cumulative rectifier hours <60 million amp-hr/yr) limit emissions of total chromium to 1.3 E-05 grains/dscf. This federal standard allows hourly and annual potential emissions for chromium to be calculated, based on scrubber maximum air flow rates. Emission calculations for hard chromium electroplating operations are presented in Appendix A, Table A-7. An example showing emission calculations from Tank #5, assuming an 8,760 hr/yr potential schedule is shown below:

Calculation of Hourly PTE

Emission Factor (EFm) = 0.028 x EFcr x Cm

Potential Emission Rate from Tank #5 (Cr):

[(0.028)*(1.3E-05) x (12.2)](gr/dscf) x (16,000 dscfm) x (1 lb/7000 gr)*(60 min/ 1 hr) = 6.09E-04 lb Cr/hr

Calculation of Annual PTE:

Hourly PTE (lb/hr) x 8760 hr/yr = Potential Emissions (ton/yr)

Annual Potential Emissions (Cr):

(6.09E-04 lb Cr/hr) x (8,760 hrs/yr) = 5.33 lb Cr/yr

3.3.6 Abrasive Blasting

The abrasive blasting units at the Engines facility are located in buildings 202 and 422. A total of eleven (11) abrasive blasting units may be utilized. Fabric filter dust collectors are used to control particulate emissions from enclosed abrasive blasting operations. Dust collector number 92401472 is used to control emission from five abrasive blasting units in Building 202. There is one (1) active dust collector number 92401825 used to control emission from six (6) abrasive blasting units in Building 422.

Potential emissions from abrasive blasting activities were calculated by assuming that emissions for a representative year (2009) occurred during a standard facility operating schedule of 6,864 hours/year. Therefore, potential emissions are based on the scaling the total quantity of abrasive blasting material, per blasting unit, to a hypothetical operating level of 8,760 hours/year. Per AP-42, Section 13.2.6 (Table 13.2.6-1), abrasive blasting of unspecified metal parts controlled with a fabric filter has an emission factor of 0.69 pounds of total particulate per 1,000 pounds of blast media material. All of the airborne dust was assumed to be of the PM_{10} form; therefore the particulate emissions describe to total PM as well. Emission calculations for abrasive blasting operations are presented in Appendix A, Table A-8 As an illustrative example, total PM emissions (equal to PM_{10}) from the DFH Sand Blaster (Maintenance # 92403012) are calculated using the following equation:

Potential particulate emissions:

Blast media used (2009) = 3,200 lbs

(3,200 lb/yr) x [8,760/6,864] x (0.69 lb PM/1,000 lb material) x (1 ton/2,000 lbs) =

1.41 ton PM/yr

3.3.7 Solvent Use – Dip Cleaning

Depending on requirements for each operational area the Engines facility currently utilizes approximately eighty eight (88) dip cleaning tanks containing Stoddard-based solvents as indicated in the attached Equipment List The Stoddard dip cleaning tanks of various dimensions are located throughout Buildings 103, 112, 301, 402, 403. The MSDS for a representative Stoddard solvent, as attached in Appendix B, indicates that the product does not contain any HAP and is of 100% VOC content by weight.

For the representative years of 2013 and 2014, the facility records indicate an average total of 31,074 gallons of Stoddard solvent was delivered and 95% of it was collected for disposal by Honeywell or contractor personnel. The general method for estimation of PTE is a material balance on the VOC-containing solvent, taking into account the collected fraction as waste, and scaling the usage to the maximum potential facility schedule.

Emissions of VOCs were calculated by assuming that the net volume of Stoddard purchased but no collected was evaporated. For a PTE estimate, the Stoddard use and evaporation rates throughout the facility were assumed to increase in proportion to facility operating hours. Actual 2013 and 2014 emissions from Stoddard dip tanks reflect a standard facility operating schedule of 6,864 hours/year. Therefore, potential emissions from dip cleaning are based on actual emissions scaled to hypothetical operating level of 8,760 hours per year. Emission calculations for solvent use in Dip Cleaning are also shown in Appendix A, Table A-9: The PTE VOC emissions for dip cleaning usage, scaled from actual 2013-14 usage is:

(31,074 gal/yr) x (6.65 lb/gal) x [8,760/6,864] x (1-.99 waste fraction) x (1 ton/ 2,000 lbs) = 1.57 tons VOC/yr

3.3.8 Solvent Use – Other than Dip Cleaning

Chemical products such as, solvents, cleaners, degreasers, and lubricating oils among others, contain varying amounts of VOCs and HAPs and are used at the Engines facility for operation and maintenance and/or cleaning of various components and engine hardware. For this renewal application, chemical purchase reports were generated from the facility database for the representative calendar years 2013 and 2014 and averaged to calculate potential emissions of VOCs and HAPs from chemical products.

The following items, along with insignificant sources listed in Section 2.4 were not considered in the chemical product use emissions estimates:

- Chemicals/products that were determined not to contain VOC or HAP; and
- VOC or HAP content in certain products that, during the course of normal use, would not be released or released only in small, negligible quantities (i.e., in batteries, some greases, motor oils, etc.); and,
- Use of standard test liquid in nozzle test stands that are not vented to atmosphere.

To provide a conservative estimate of facility PTE for use of these products, the available information for calendar years 2013 and 2014 (e.g., purchased amounts recorded in pounds of product) were scaled by the ratio of 8,760 hours/year to the actual 6,864 hours/year facility schedule. Content of VOC or HAP components was obtained from product MSDS, provided on the CD in the back cover pocket, which is Appendix B.

Emissions of VOCs and HAPs were calculated by assuming that the net volume of product purchased by not collected was evaporated. The mass of pollutant in the consumed product was found by multiplying the scaled-up purchased amount in pounds per year by the approximate weight percent of VOC in the product. Annual emissions estimates for VOCs and HAPs from solvent uses are adjusted to account for the substantial portion that is collected for disposal. Records from the Facility Annual Report indicate 100percent collection for the majority of facility waste solvents, and no less than 95 percent collection. However, a conservative estimate that 98 percent of purchased solvents were captured for disposal was used for calculating VOC emission from solvent uses. Emission calculations for solvent use Other than Dip Cleaning are also shown in Appendix A, Table A-10. As an illustrative example, potential VOC emissions from use of Stoddard solvent other than for dip cleaning are.

Annual Potential Emissions of "Stoddard" (VOC):

(39,657 lb/yr) x [8,760/6864 (hrs/yr)] x (1-.98) x (1 ton/ 2,000 lbs) = 0.51 ton VOC/ yr

3.3.9 BSVE Emissions

The stack emissions for each of the three BSVE alternate operating scenarios were calculated using AP-42 emission factors, maximum observed inlet concentrations to the BSVE system in 2015, and current operating permit requirements for destruction and/or removal efficiencies in each operating scenario. Since combustion only occurs in AOS-1, maximum PTE for criteria pollutants, including NOx, CO, SO2, and PM occur in this scenario. However, maximum PTE for VOCs occurs in AOS-4 due to the lower VOC removal efficiencies required by the permit for this scenario. This includes vinyl chloride, since AOS-5 is not implemented unless inlet concentrations of vinyl chloride are below the method reporting limit (i.e., non-detectable). Actual emissions for criteria pollutants are expected to be much lower than the calculated PTE since the system is expected to operate primarily in AOS-4 during the term of this permit renewal and performance tests on AOS-1 and AOS-4 have demonstrated VOC destruction and removal efficiencies higher than permit requirements.

A summary of the annual PTE for the BSVE operating in AOS-1, AOS-4, and AOS-5 is presented in Table E-1 of Appendix E. The methodology used to derive these emissions estimates is described in the remainder of this section. Emission calculations for the BSVE system are provided in Appendix E of this application.

The BSVE system can be operated in AOS-1, AOS-4, and AOS-5, 24 hours per day, 365 days per year, except for maintenance downtimes. Therefore, annual PTE calculations are based on 8,760 hours per year of operation. Emissions generated from the various operating scenarios include:

- AOS-1 - Criteria pollutants from the combustion of natural gas supplemental fuel, methane, and petroleum hydrocarbons in the soil vapor and residual VOCs that are not completely destroyed in the thermal oxidizer or removed in the VGAC or PPA units. The current permit requires 99% destruction efficiency of VOCs in the thermal oxidizer during AOS-1. MCAQD-approved performance testing conducted in May 2014 demonstrated compliance with this requirement.

- AOS-4 – Residual VOCs that are not removed in the VGAC units or PPA units. The current permit requires 90% destruction efficiency of VOCs during AOS-4. MCAQD-approved performance testing conducted in September 2015 demonstrated compliance with this requirement.

- AOS-5 – Residual VOCs that are not removed in the VGAC units. The current permit requires 90% destruction efficiency of VOCs during AOS-5.

The methods used to calculate emissions for operation of the BSVE system are presented below. Appendix E contains detailed calculation tables and summaries of PTE for the BSVE system.

Gaseous Fuel Combustion (AOS-1 only) – The combustion of soil gas methane and supplemental natural gas fuel in the thermal oxidizer is the primary source of criteria pollutant emissions during operation in AOS-1. Emissions from the combustion of natural gas and methane combustion were conservatively calculated using the rated design heat input capacity of the thermal oxidizer of 5.6 million British thermal units per hour (MMBtu/hr), the average heating value of natural gas (1,020 BTU/scf), and the emission factors for external combustion of natural gas presented in AP-42, Tables 1.4-1 (small boilers <100 MMBTU/hr) and 1.4-2 (July, 1998). The PTE for NO_X, CO, SO_2, PM, and VOCs from gaseous fuel combustion was calculated as presented in the example below for NO_x.

$$PTE_X = \frac{EF_X \times DC}{HV_{NG}}$$

$$PTE_{NOx} = \frac{100 \times 5.6}{1020} = 0.55 \text{ lb/hr}$$

$$\text{Annual PTE}_{NOx} = \frac{100 \times 5.6}{1020} \times 8{,}760 = 4{,}809 \text{ lb/yr} = 2.4 \text{ tons/yr}$$

where: PTE_X = Potential to emit compound "X" (lb/hr)

EF_X = Emission factor of compound "X" from AP-42 External Combustion for small boilers <100 MMBTU/hr; for NO_X, X = 100 lb/10^6 scf

DC = Design capacity of the oxidizer (5.6 MMBTU/hr)

HV_{NG} = Heating value of natural gas (1,020 BTU/scf)

With the exception of VOCs, Honeywell does not anticipate the control devices downstream (VGAC and PPA) of the oxidizer will reduce the criteria pollutants generated from the fuel combustion in the oxidizer. Emission calculations from natural gas combustion in AOS-1 are presented in Table E-2 in Appendix E.

VOC Emissions from TPH in the Soil Vapor (AOS-1 only) – Additional VOC emissions are generated during AOS-1 from residual VOCs not treated in the thermal oxidizer or VGAC units. Annual PTE was based on the maximum quantity of petroleum hydrocarbons that would be treated using the maximum inlet concentration of TPH observed during 2015 BSVE inlet sampling and the maximum rated capacity for the BSVE system during AOS-1. The thermal oxidizer is assumed to remove a minimum of 99% of the VOCs entering the system, as required by the current permit. The VGAC units are assumed to remove an additional 90%, at a minimum, of VOCs that may remain after treatment in the thermal oxidizer.

The PTE for VOCs in AOS-1 due to VOCs being treated by the BSVE system was calculated using the following equation:

$$\text{PTE}_{\text{VOC-SV}} = \text{InletConc.} \times \text{R}C_{\text{AOS-1}} \times 60 \times (1 - \text{D}E_{\text{OX}}) \times (1 - RE_{\text{VGAC}}) = \text{lb/hr}$$

$$\text{Hourly PTE}_{\text{VOC-SV}} = 6.73x10^{-5} \times 3300 \times 60 \times (1 - 0.99) \times (1 - .90) = 0.013 \text{ lbs/hr}$$

$$\text{Annual PTE}_{\text{VOC-SV}} = 0.013 \text{ lb/hr} \times 8760 = 0.058 \text{ tons/year}$$

where:

PTE_{VOC-SV} = PTE for VOCs from the treatment of soil vapor, not including VOC emissions from combustion

InletConc. = Maximum TPH inlet concentration observed in 2015 (1079 ug/L

converted to 6.73 x 10^{-5} lb/scf).

RC_{AOS-1} = Rated capacity of the BSVE system in AOS-1 (3,300 scfm)

DE_{OX} = Minimum Destruction Efficiency of thermal oxidizer (99%)

RE_{VGAC} = Minimum Removal Efficiency of VGAC units (90%)

Emission calculations for VOCs in the soil vapor are presented in Table E-3 in Appendix E

VOC Emissions from TPH in the Soil Vapor (AOS-4 and AOS-5) – VOC emissions during operation in AOS-4 and AOS-5 are calculated using the same methodology stated above for AOS-1. However, only the removal factor for VGAC units of 90%, as required by the current operating permit, is used in the equation for operation in AOS-4 and AOS-5, and the maximum rated capacity for the system in AOS-4 and AOS-5 is 5,300 scfm, as presented below:

$$\text{Hourly PTE}_{\text{VOC-SV}} = InletConc_{.} \times RC_{\text{AOS-4,5}} \times 60 \times (1 - RE_{\text{VGAC}}) = lb/hr\ VOC$$

$$\text{Hourly PTE}_{\text{VOC-SV}} = 6.73\ x\ 10^{-5} \times 5300 \times 60 \times (1 - .90) = 2.14\ lbs/hr$$

$$\text{Annual PTE}_{\text{VOC-SV}} = 2.14\ lbs/hr \times 8{,}760 = 18{,}700\ lbs/yr = 9.36\ ton/yr$$

where:

PTE_{VOC-SV} = PTE for VOCs from the treatment of soil vapor, not including VOC emissions from combustion

InletConc. = Maximum TPH inlet concentration observed in 2015 (1079 ug/L converted to 6.73 x 10^{-5} lb/scf).

$RC_{AOS-4,5}$ = Rated capacity of the BSVE system in AOS-4 and 5 (5,300 scfm)

RE_{VGAC} = Minimum Removal Efficiency of VGAC units (90%)

Additional Sulfur Dioxide from Combustion of Soil Vapor (AOS-1 only) – Additional sulfur dioxide (SO2) emissions from the combustion of petroleum hydrocarbons were based on the maximum quantity of petroleum hydrocarbons that would be treated using the maximum inlet concentration of TPH observed during 2015 BSVE inlet sampling. Maximum TPH concentration in the inlet samples was 1079 ug/L (6.73 x 10^{-5} lb/ft^3). This value was then multiplied by the maximum capacity of the thermal oxidizer (3,300 scfm) to obtain a maximum VOC mass inlet loading of 13.3 lbs/hour to the BSVE system in AOS-1. This value was multiplied by an emission factor of 0.000834, as specified in the current permit.

An example calculation for SO_2 from petroleum hydrocarbon combustion is presented below:

$$\text{Hourly PTE}_{\text{SO2-SV}} = \text{EF}_{\text{SO2-SV}} \times \text{InletConc.} \times \text{RC}_{\text{AOS-1}} \times 60 = \text{lb/hr SO}_2$$

$$\text{Hourly PTE}_{\text{SO2-SV}} = 0.000834 \times 6.73 \text{ x } 10^{-5} \times 3300 \times 60 = 0.011 \text{ lbs/hr}$$

$$\text{Annual PTE}_{\text{SO2-SV}} = 0.011 \text{ lbs/hr x } 8760 = 97 \text{ lbs/yr} = 0.048 \text{ tons/yr}$$

where:

PTE_{SO2-SV} = Potential to emit SO_2 (lb/hr) from petroleum hydrocarbon combustion

EF_{SO2-SV} = Emission factor for SO_2 from petroleum hydrocarbon combustion specified in the Title V Permit for the BSVE system (0.000834).

InletConc. = Maximum TPH inlet concentration observed in 2015 (1079 ug/L converted to 6.73 x 10^{-5} lb/scf)

RC_{AOS-1} = Rated capacity of the BSVE system in AOS-1 (3,300 scfm)

Emission calculations for SO_2 emissions from the combustion of VOCs in the soil vapor during AOS-1 are presented in Table E-2 in Appendix E.

Hazardous Air Pollutant Emissions (AOS-1 only) – The BSVE system will emit federally listed HAPs in the exhaust from the BSVE system due to pollutants in the inlet soil vapor and from combustion activities. However, due to the lower minimum removal efficiency in AOS-4 and 5, the maximum PTE for VOC HAPs will occur in these operating scenarios. Therefore, VOC HAPs from compounds in the soil vapor were not calculated for AOS-1.

HAP emissions from the combustion of supplemental natural gas in the thermal oxidizer were calculated using the natural gas emission factors from AP-42 Natural Gas Combustion Tables 1.4-3 and 1.4-4. For a conservative PTE estimate, the oxidizer was assumed to be operating at maximum heat input capacity (5.6 MMBTU/hr). A summary of the HAP emissions from natural gas combustion for AOS-1 is presented in Table E-4 of Appendix E.

Cl and HF may be formed in the thermal oxidizers during the combustion of chlorinated and fluorinated hydrocarbons. The inlet concentrations used to calculate hourly and annual PTE of individual HAPs, as described above, were used to calculate the generation of HCl and HF. Based on the maximum potential inlet concentrations, the number of chlorine and fluorine ions potentially entering the thermal oxidizer was calculated using the following equation:

$$Cl_{X\text{-}in} = LR_{OX\text{-}X} \times N_{X\text{-}Cl} \times \frac{MW_{Cl}}{MW_X}$$

$$Cl_{TCE\text{-}in} = 6.34\,x\,10^{-4} \times 3 \times \frac{35.5}{131.4} = 5.1\,x\,10^{-4}\ \text{lb/hr}$$

where:

$Cl_{X\text{-}in}$	=	Chlorine ion mass inlet from chlorinated compound "X" (lb/hr)
$LR_{OX\text{-}X}$	=	Chlorinated compound "X" mass inlet loading rate to the thermal oxidizer (trichloroethene = 6.34 x 10^{-4} lb/hr)
$N_{X\text{-}Cl}$	=	Number of chlorine ions in chlorinated compound "X" (trichloroethene - 3)
MW_{Cl}	=	Molecular weight of chlorine (35.5 g/mol)
MW_X	=	Molecular weight of chlorinated compound "X" (trichloroethene = 131.4 g/mol)

During the combustion process, the chlorine and fluorine ions can bond with hydrogen to form HCl and HF acid gases. It was then assumed that all of these ions would be converted to HCl and HF in the thermal oxidizer. The scrubber is estimated to remove a minimum of 99% of the acid gas emissions, based on manufacturer specifications. The HCl and HF acid gas emissions from the BSVE system during AOS-1 operation were calculated using the following equation:

$$\text{Hourly PTE}_X = CL_{X\text{-}in} \times \frac{MW_{HCl}}{MW_{Cl}} \times (1 - RE_{Scrubber})$$

$$\text{Hourly PTE}_{HCL\text{-}TCE} = 5.1 \text{ x } 10^{-4} \times \frac{36.5}{35.5} \times (1 - 0.99) = 5.3 \text{ x } 10^{-6}\ \text{lb/hr}$$

$$\text{Annual PTE}_{HCL\text{-}TCE} = 5.3 \text{ x } 10^{-6}\ \text{lb/hr} \times 8760 = 0.046\ \text{lbs/yr} = 2.3 \text{ x } 10^{-5}\ \text{tons/year}$$

where:

PTEx	=	HCl acid gas oxidizer emission from chlorinated compound "X" (lb/hr)
$Cl_{X\text{-}in}$	=	Chlorine ion mass inlet from chlorinated compound "X" (trichloroethene = 5.1 x 10^{-4} lb/hr)
MW_{HCl}	=	Molecular weight of HCl (36.5 g/mol)
MW_{Cl}	=	Molecular weight of chlorine (35.5 g/mol)
$RE_{scrubber}$	=	Removal Efficiency of the scrubber (99%)

Emission calculations for acid gasses in the soil vapor are presented in Table E-5 in Appendix E.

HAP Emissions from Soil Vapor (AOS-4 and AOS-5) – HAP emissions during operation in AOS-4 and AOS-5 were calculated based on the maximum inlet concentrations of HAP compounds in the inlet to the BSVE system during 2015 and a maximum operating capacity of 5,300 scfm. A VOC removal efficiency of 90%, based on the minimum required efficiency in the current operating permit, is used for each compound, except vinyl chloride, which will not be removed in the VGAC units. A 90% efficiency for removal of vinyl chloride in the PPA units was also assumed. Only compounds that were detected in the inlet in 2015 are included in the HAP calculations, with the exception of vinyl chloride. Since vinyl chloride is a permitted compound, one-half the maximum detection limit observed in 2015 was used for HAP emission calculations. The following equations demonstrate emissions calculations for HAPs in the soil vapor:

$$\text{Hourly PTE}_{\text{X-SV}} = \text{InletConc.} \times \text{RC}_{\text{AOS-4,5}} \times 60 \times (1 - \text{RE}_{\text{VGAC}}) = \text{lbs/hr HAP X}$$

$$\text{Hourly PTE}_{\text{Benzene-SV}} = 1.07 \text{ x} 10^{-8} \times 5300 \times 60 \times (1 - .90) = 3.39 \text{ x} 10^{-4} \text{ lbs/hr}$$

$$\text{Annual PTE}_{\text{Benzene-SV}} = 3.39 \text{ x} 10^{-4} \text{ lbs/hr} \times 8760 = 2.97 \text{ lbs/yr} = 1.49 \text{ x} 10^{-3} \text{ tons/yr}$$

where:

PTE_{X-SV}	=	PTE for HAP X from the treatment of soil vapor, not including HAP emissions from combustion
InletConc.	=	Maximum benzene inlet concentration observed in 2015 (1.07×10^{-8} lb/scf).
$RC_{AOS-4,5}$	=	Rated capacity of the BSVE system in AOS-4 and 5 (5,300 scfm)
RE_{VGAC}	=	Minimum Removal Efficiency of VGAC units (90%)

3.3.10 Potential Dioxin/Furan Emissions (AOS-1 only)

The BSVE system is designed to minimize, if not eliminate the potential for PCDD/PCDF emissions. Design considerations include limiting the potential for carbon monoxide formation in the thermal oxidizer, minimizing the residence time in high temperature exhaust (exhaust quenching), and filtering particulates out of the inlet air.

An impact assessment was conducted during the original BSVE permit revision application to evaluate the maximum PCDD/PCDF emissions that could occur while still meeting the Arizona Ambient Air Quality Guidelines (AAAQGs). This emission rate is 0.0026 grams per year for the operation of the BSVE system in AOS-1 and 0.0068 grams per year for other

operating scenarios in the current operating permit. These PCDD/PCDF emission rates were established as maximum allowable emissions in the permit based on all operating scenarios, and represent a conservative estimate for the maximum PTE for the BSVE process as shown in Table E-1. The Facility is required to perform an emission source test to verify that the dioxin and furan emissions will not exceed the permit limits.

4 REGULATORY ANALYSIS AND COMPLIANCE METHODS

The following discussion reviews the applicability of federal and Maricopa County Air Quality Department (MCAQD) Air Pollution Control Regulations with respect to the Honeywell Engines' emissions units. This analysis specifically addresses regulations that may affect permit Specific Conditions, and compliance with applicable current rules.

4.1 APPLICABLE AIR QUALITY PROGRAMS

Title 40 of the Code of Federal Regulations (40 CFR), Parts 50 through 98 implement the statutory provisions in the Clean Air Act, and subsequent amendments. The United States Environmental Protection Agency (EPA) delegates the authority to administer and enforce many of these regulations to individual states and agencies such as the MCAQD. In such cases, the delegated agency may write equivalent or more stringent requirements into their own rules, or can adopt the federal requirements by reference. However, the underlying federal requirements generally remain applicable, and may constitute "federally-enforceable" requirements.

The Honeywell Engines facility is primarily regulated by a variety of MCAQD rules that stipulate Reasonably Available Control Technology (RACT) for different categories of emissions units present at the site. These rules are contained in Maricopa County Air Pollution Control Regulations, primarily in Regulation III Control of Air Contaminants. In addition, some Engines facility operations are subject to federal requirements that are derived from regulations contained in subparts of Title 40 of the Code of Federal Regulations. The following sections identify the applicable federal and county regulations, and the proposed ongoing compliance methods for the Engines facility.

4.2 NEW SOURCE PERFORMANCE STANDARDS (NSPS, 40 CFR PART 60)

There are only a few emissions units at the Honeywell Engines facility that are subject to federal New Source Performance Standards (NSPS), from 40 CFR Part 60. This is due largely to the nature of the facility emissions sources, and because few emissions units have undergone modification. For the Engines facility the following NSPS subparts are applicable:

- Subpart A – General Provisions; and,
- Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

The current roster of emergency internal combustion engines at the facility was reviewed with respect to the applicability criteria of NSPS Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. All of the existing engines at the facility have installation or model years that predate the current NSPS standard.

Note that there are no NSPS subparts that currently apply to the larger, gas-fired boiler units, or the numerous engine test cells. If the former units were to undergo a qualifying modification, then the NSPS found at Subpart Dc, Standards of Performance for Small Industrial-Commercial_Institutional Steam Generating Units would be applicable. Also, the facility has not recently installed a new, emergency generator or fire water pump engine. Should this action be taken during the term of the permit, then certain provisions for such engines in NSPS Subpart IIII (Diesel-fired) or Subpart JJJJ (Gasoline-fired) would become applicable.

A brief description of applicable NSPS Subparts is contained in Sections 4.2.1 through 4.2.3. These regulations include requirements related to emission source testing, and monitoring/record keeping for volatile organic liquids stored in certain vessels at the Engines facility. A more detailed analysis of the applicable requirements within these subparts is provided in this section. Specifically, Table 4-1 summarizes the applicable federal NSPS requirements, identifies the affected sources to which the requirement applies, identifies the corresponding emission points for the affected sources, and generally describes how the Engines faciltiy will continue to comply with the requirements.

4.2.1 40 CFR 60, Subpart A – General Provisions

The NSPS General Provisions are applicable to the Engines facility, and are referenced in the existing Title V permit. Table 4-1 outlines the sections that translate into specific requirements.

4.2.2 40 CFR 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

As provided in Subpart Kb, compliance requirements for tanks at the Engines facility must be met by organic liquid storage vessels with capacity equal to or greater than 75 cubic meters (approximately 19,800 U.S. gallons), storing liquids with true vapor pressure higher than 15.0 kPa. Most fuel storage tanks at the facility have capacity above the applicability threshold, but the liquid vapor pressures are less than the applicability threshold (e.g., JP-A and JP-8 have vapor pressure of 1 kPa at 100 F). The methanol tank is below the volume threshold (6,000 gallons) but the vapor pressure is approximately 32 kPa at 100F. Consequently, the affected sources at the Engines facility at this time are the tanks storing JP-4, (Tanks 201N and 203N in Tank Farm 2) primarily used as fuel for engine test cells. The regulatory requirements related to this subpart are outlined in Table 4-1.

Table 4-1. Description of Applicable Requirements and Compliance Methods - New Source Performance Standards

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
40 CFR Part 60, Subpart A: General Provisions				
§60.1	Refers to new and modified affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	The provisions in 40 CFR Part 60 will apply to any new or modified stationary source that contains an affected facility.	Engines facility will comply with all applicable provisions for affected new and modified facilities subject to a subpart of 40 CFR Part 60.
§60.4(a)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	All requests, reports, applications, submittals, and other communications to the Administrator of the EPA pursuant to this part must be submitted in duplicate to the Region 9 of the EPA.	Engines facility has submitted a copy of this renewal application to Region 9 of the EPA, and will continue to comply with this requirement for all future requests, application updates, submittals, or other written communications.
§60.4(b)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	All information that is submitted to the EPA in accordance with §60.4(a) must also be submitted to the State for each subpart for which authority was delegated to the State.	Engines facility has submitted a copy of this renewal application to Region 9 of the EPA, and will continue to comply with this requirement for all future requests, application updates, submittals, or other written communications.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.5	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	When requested by an owner/operator, the Administrator will make a determination of whether an action taken constitutes construction or modification within 30 days of receipt of the request.	Engines facility will copy the MCAQD on any requests made to the EPA regarding whether an action taken constitutes construction or modification.
§60.6	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	When requested by the owner/operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice.	Engines facility will copy the MCAQD on any construction or modification plans submitted to the EPA.
§60.7(a)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	The owner/operator must furnish the EPA Administrator with notification of the following events: date of construction or reconstruction, actual date of initial startup, any physical/operational change that may cause an increase in emission rates, date on which continuous monitoring system (CMS) performance commences, and anticipated date for conducting opacity observations under §60.11(e)(1).	If a modification to the affected storage tanks, or a new source subject to an NSPS is constructed or modified, the Engines facility will notify the MCAQD and the EPA of the date of construction (within 30 days after activity); initial startup (within 15 days after activity); physical/operational changes that may cause an increase in emissions (60 days prior to change); CMS performance commencement (30 days prior to activity); and dates for conducting opacity observations, if required, under §60.11(e)(1) (30 days prior to activity).

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.7(b)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	The owner/operator must maintain records of the occurrence and duration of any startup, shutdown, or malfunction for affected facilities, any malfunction of air pollution control equipment, or any periods when a CMS or monitoring device is inoperative.	To the extent appropriate for the affected sources the Engines facility will maintain an on-site log containing the information required by this rule and will make the log available for inspection upon request.
§60.7 (c), (d), and (e)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Not Applicable	If the owner/operator is required to install a continuous monitoring system (CMS), the owner/operator must submit excess emission and monitoring systems performance reports and/or summary report forms to the Administrator on at least a semi-annual basis.	Requirements related to CMS not currently applicable. There are no affected NSPS sources at the Engines facility for which a CMS is required.
§60.7(f)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	The owner/operator must maintain a file of all measurements (including CMS and performance testing); CMS performance evaluations; CMS or monitoring device calibration checks; adjustments or maintenance performed on these systems or devices; and all other information required by an applicable requirement in 40 CFR Part 60 in a permanent form for at least two years.	Requirements related to CMS not currently applicable. There are no affected NSPS sources at the Engines facility for which a CMS is required. Engines facility will maintain at least the most recent two years of required records on-site (e.g., vapor pressure determinations). As a Title V source, all of the required records for the past five years will be made available for inspection upon request.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.7(g)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	If similar to that in §60.7(a), notifications required by State may be copied to the EPA to satisfy the requirements in §60.7(a).	No Comment
§60.7(h)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	Subparts in 40 CFR Part 60 may make the provisions in §60.7 inapplicable.	No Comment
§60.8	Refers to all affected sources subject to Subpart Kb, or other Subparts.	BSVE	The owner/operator must conduct any specified performance tests in accordance with §60.8 within 60 days after achieving the maximum production rate for the affected facility, but not later than 180 days after the initial start-up of the facility, and at other times as required. The owner/operator must notify the EPA and the State at least 30 days in advance of the test, and at least 7 days in advance if the scheduled date changes, and furnish a written report with the results.	BSVE permit condition 33.d requires performance test notifications and reports.
§60.9	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	Availability of information for the public, provided or obtained under 40 CFR Part 60, is governed by Part 2 of Chapter I.	No Comment

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.10	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	The State may adopt and enforce emission standards/limitations for an affected facility or require the owner/operator to obtain permits or other approvals prior to construction, modification, or operation.	This Title V renewal application constitutes a request for permit approval to operate affected facilities under 40 CFR Part 60.
§60.11(a) – (c), and (e), (f)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Not Applicable	Compliance with all standards must be demonstrated in accordance with the performance test requirements in §60.8.	Requirements related to source testing not currently applicable. There are no affected NSPS sources at the Engines facility for which a Performance Test is required.
§60.11(d)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Not Applicable	Affected facilities, including associated air pollution control equipment, must be maintained and operated, to the extent practicable, in a manner consistent with good air pollution control practice for minimizing emissions.	Requirements related to air pollution control equipment not currently applicable. There are no affected NSPS sources at the Engines facility for which air pollution control equipment is required.
§60.11(g)	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	Use of credible evidence when submitting compliance certifications or establishing potential violations is not precluded by 40 CFR Part 60.	Engines facility reserves the right to use credible evidence if necessary.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.12	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	The owner/operator must not circumvent requirements by concealing emissions or by use of diluents to achieve compliance.	Engines facility will not conceal emissions that would otherwise constitute a violation of an applicable standard, or introduce diluents in order to achieve compliance.
§60.19	Refers to all affected sources subject to Subpart Kb, or other Subparts.	Entire Facility	This rule contains general notification and reporting requirements.	Engines facility will comply with these general notification and reporting requirements when submitting information to the State and the EPA.
40 CFR Part 60, Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984				
§60.110b	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	Establishes Applicability and Exemption criteria for VOL storage tanks.	The affected source tanks at the Engines facility are subject only to requirements for documentation of tank contents, volume, and true vapor pressure.
§60.111b	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	Definitions for Subpart Kb.	No comment.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.112b through §60.114b	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Not Applicable	Establishes design, work practice standards for VOL storage tanks, which, under §60.112b or 113b requirements, must utilize internal or external floating roofs	The tanks at the Engines facility are prohibited by existing permit conditions from exceeding the tank volume or VOL true vapor pressure criteria to become subject to these requirements.
§60.115b	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Not Applicable	Establishes inspection and testing standards for VOL storage tanks that must utilize internal or external floating roofs	The tanks at the Engines facility are prohibited by existing permit conditions from exceeding the tank volume or VOL true vapor pressure criteria to become subject to these requirements.
§60.116b(a), and (b)	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	The owner/operator shall keep copies of records for at least 2 years, records of the dimensions of the vessel and analysis showing capacity of the vessel will be retained for the life of the source.	Engines facility will maintain at least the most recent two years of required records on-site (e.g., vapor pressure determinations), and the dimensional/capacity analysis for affected tanks.
§60.116b(c), and (d)	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	For a VOL stored in vessel with capacity between 75 m3 and 151 m3, storing a liquid with maximum true vapor pressure less than 27. 6 kPa, notify the Administrator within 30 days when that vapor pressure exceeds maximum range for that tank capacity range.	Engines facility will maintain vapor pressure determinations for the affected tanks. Additional tanks will be tracked if JP-4 or other fuel with true vapor pressure above 15.0 kPa is stored.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§60.116b(e),	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Volatile organic liquid storage tanks for JP-4 (201N, 203N)	Tank actual storage temperature data may be used, with Reid vapor pressure data, and/or standard reference texts, to calculate the true vapor pressure	Engines facility will utilize storage tank temperature data to determine true vapor pressure, from standard reference texts or a method approved by the Control Officer.
§60.116b(f), and (g)	VOL Storage Tanks equal/greater than 75 m^3 volume, containing liquid with true vapor pressure more than 15.0 kPa.	Not Applicable.	(f) Establishes vapor pressure determination requirements for tanks containing variable waste mixtures; (g) exemption for vessel equipped with closed vent system and control device.	The Engines facilities tanks do not contain waste mixtures, and do not have closed vent systems.

4.3 *NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) AND MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT) STANDARDS (40 CFR PARTS 61 AND 63)*

The federal NESHAPs rules are codified at 40 CFR Part 61 and 63, and are incorporated in the MCAQD Air Pollution Control Regulations in Rule 370. As part of the NESHAPs program, federal maximum achievable control (MACT) standards are enacted to reduce the emissions of HAPs from source categories. Consideration of NESHAP Subparts in Part 63 indicates that, as described in this section, several are currently applicable to the Honeywell Engines facility. In the case of the Hard Chromium Plating NESHAP, the requirements are embodied in several Specific Conditions in the current permit.

In general, the NESHAP regulations apply to affected sources that are located at (or are themselves) major sources of HAP emissions as defined in 40 CFR 63.2. That is, any stationary source that emits or has the potential to emit, considering controls, in the aggregate, 10 tons per year or more of any single HAP or 25 tons per year or more of any combination of HAPs. Based upon the annual HAP potential to emit emission rates presented herein the Engines facility is an Area Source, not a major source of HAPs. However, certain NESHAP are defined as applicable to Area Sources of HAP, which are facilities that have annual emissions below the major source thresholds. The following sections and Table 4-2 describes in more detail the applicable requirements and compliance methods.

4.3.1 40 CFR Part 61, Subpart M: National Emission Standards for Asbestos

In the event that a building or structure is renovated, modified, or demolished at the Engines facility, measures shall be taken to comply with NESHAP sections 61.145 through 61.147. In general, these provisions require a suitable survey of the modified or demolished structure components and each homogeneous material to determine if the material must be deemed an "asbestos containing material" (ACM). Should ACM be identified, then additional control and monitoring measures in Subpart M may become applicable.

4.3.2 40 CFR Part 63, Subpart N: National Emission Standards for Hazardous Air Pollutants from Hard Chromium Electroplating.

This NESHAP is applicable to the hard chromium electroplating line operations and the at the Engines facility. There are two process tanks currently in service that would contain

chromium solutions. Table 4-2 outlines the applicable provisions of this NESHAP, and the methods used at the facility to demonstrate compliance.

4.3.3 40 CFR Part 63, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (ICE).

Subpart ZZZZ as revised in March 2010 includes various categories of reciprocating internal combustion engines (RICE) located at area sources. The Honeywell facility emergency engines are compression-ignition, diesel engines that are all affected sources under this renewal. As such the engine-driven emergency generators and fire water pumps are subject to certain management practice requirements. Table 4-2 outlines the applicable provisions of this NESHAP, and the methods used at the facility to demonstrate compliance.

4.3.4 40 CFR Part 63, Subpart GGGGG: National Emission Standards for Hazardous Air Pollutants: Site Remediation

This NESHAP was promulgated in October 2003, and applies generally to remediation activities involving cleanup of contaminated soil, waters, or groundwater that are located at major sources of HAP emissions. As a source category, the BSVE operation that is extracting hydrocarbons from an underground plume at the Engines facility would be potentially subject to this NESHAP. This NESHAP is intended to establish emissions limitations and work practice standards for HAP emissions from site remediation activities. Also, the hydrocarbon liquids removed by the BSVE system may contain some HAP constituents. However, the Engines facility is not a major source of HAP emissions, which means that this regulation does not currently apply.

4.3.5 40 CFR Part 63, Subpart PPPPP: National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Standards

This NESHAP was promulgated in May 2003, and applies generally to internal combustion engine test stands that are located at major sources of HAP emissions. As a source category, the Test Cells at the Engines facility would be potentially subject to this NESHAP. This NESHAP is intended to regulate emissions of HAP from internal combustion engines, including turbine types, that are operated in a testing stand and not installed in a finished vehicle. However, the Engines facility is not a major source of HAP emissions, which means that this regulation does not currently apply.

4.3.6 40 CFR Part 63, Subpart XXXXXX: National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations

This NESHAP was promulgated in July 2008, and applies to a variety of non-chromium plating operations and polishing operations that involve any of five "plating and polishing metal HAP", which are cadmium, chromium, lead, manganese and nickel. Since this NESHAP applies to affected sources located at area sources of HAP emissions, it is applicable to certain operations at the Engines facility. Specifically, this regulation will apply to the electroless nickel plating line and thermal spray operations. Mechanical grinding and polishing of the plated components that can be performed at the facility would also constitute operations that are subject to this NESHAP. The applicable requirements are included in Table 4-2.

Table 4-2. Description of Applicable Requirements and Compliance Methods – Naional Emission Standards for Hazardous Air Pollutants

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
40 CFR Part 63, Subpart A: General Provisions				
§63.1	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Hard chromium plating line, emergency RICE (8 generators and 2 fire water pumps), and other toxic metals plating and polishing.	The provisions in 40 CFR Part 63 apply to any stationary source that contains an affected facility for which any subpart is applicable.	Engines facility will comply with all applicable provisions for existing and potential newly affected sources under 40 CFR Part 63.
§63.2, §63.3	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Entire facility	Definitions and units pertaining to 40 CFR Part 63	No comment.
§63.4	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Entire facility	Prohibits circumvention by means of concealing emissions, or use of diluents to achieve compliance with a standard.	Engines facility will not conceal emissions that would otherwise constitute a violation of an applicable standard, or use diluents to achieve compliance.
§63.5	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Entire facility	Establishes preconstruction review and notification requirements. The facility is to apply for approval of construction or modifications to existing affected sources, would create a new Major Source, or create a new Area source subject to any Subpart of 40 CFR Part 63.	Engines facility has submitted this renewal application for its existing affected sources, and will continue to comply with this requirement for future construction, reconstruction, or modifications.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Hard chromium plating line, emergency RICE (8 generators and 2 fire water pumps), and other toxic metals plating and polishing.	(b)(c) Establish compliance dates; (e) requirement for development and implementation of Startup, Shutdown and Malfunction Plans; (f) (g) sets requirements for compliance with non-opacity standards; (h) requirements for compliance with opacity standards; (i) (j) pertain to compliance extensions.	Engines facility has met and will continue to meet the compliance dates and the standards in applicable Subparts, and will develop and implement Startup, Shutdown and Malfunction Plans for affected sources. To date, there are no applicable opacity standards and provisions for compliance extensions are not applicable.
§63.7	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Not Applicable	The owner/operator must conduct applicable Performance Tests that meet requirements for: (b) notifications; (c) Test Plans; (d) testing facilities; (e) (f) test methods; and (g) data analysis.	The applicable subparts do not include a requirement for Performance Tests that is applicable to the Engines facility affected sources.
§63.8	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Currently affects hard chromium plating line and emission control scrubber (#HPV773D).	The owner/operator is to install, operate and maintain a continuous monitoring system (CMS) for affected sources as identified in applicable Subparts, as required in (a) – (c). These requirements include (d) quality control, and (e) performance evaluations. Also establishes general requirements for alternative monitoring (f), and data reduction (g).	The hard chromium plating line is served by a scrubber with monitoring requirements for operating parameters. Continuous parameter monitoring systems (CPMS) are included in the definition of CMS in §63.2. Engines facility will maintain the parameter monitoring systems, perform daily checks, and conduct periodic quality assurance/quality control checks.
§63.9	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Hard chromium plating line, emergency RICE (8 generators and 2 fire water pumps), and other toxic metals plating and polishing.	Notification requirements: (b) initial notifications; (c) for extensions; (d) special compliance requirements; (e) for performance tests; (f) for opacity observations; (g) related to CMS evaluations; (h) notifications of compliance status; (i) administrative matters.	For the Engines facility affected sources, initial notifications have been filed. Future requirements for notifications, e.g., of compliance status under Subpart ZZZZ, will be submitted as required. Notification requirements related to performance tests, opacity observations and CMS evaluations are not applicable.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.10	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Hard chromium plating line, emergency RICE (8 generators and 2 fire water pumps), and other toxic metals plating and polishing.	Record keeping and Reporting requirements: (a) reporting frequency; (b) general record keeping; (c) additional CEMS record keeping; (d) reporting for compliance events (perf. tests, opacity tests, progress reports, SSM reports, CMS monitoring reports and excess emission reports) (e) frequency and content of and monitoring and excess emission reports; and (f) waiver of requirements	For the Engines facility affected sources, the required record keeping and reporting will be performed as required by applicable Subparts. Facility will continue to submit semi-annual monitoring reports for Subpart N, and in the future for Subpart ZZZZ sources. Record keeping requirements related to performance tests, opacity observations and CMS evaluations are not applicable under the NESHAP standards.
§63.11	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	Not Applicable	Control device and work practice requirements for flares and equipment leak sources.	The emission control and work practice requirements in this section do not apply to the affected sources at the Engines facility.
§63.12	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	No Applicable Requirements.	State Authority and Delegations	No Comment
§63.13	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	No Applicable Requirements.	Addresses of Agencies	No comment.
§63.14	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	No Applicable Requirements.	Incorporations by Reference	None of the methods incorporated by reference pertain to the Engines facility affected sources.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.15	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	No Applicable Requirements.	Availability of Information and Confidentiality. Submittals pursuant to the NESHAP program are generally available to the public. Sources may claim protection from disclosure under section 114(c) of the Act for certain information, not including Title V applications.	Engines facility reserves the right to claim protection from disclosure for submitted information, as allowed by this Section.
§63.16	Refers to sources subject to Subparts N, ZZZZ, XXXXXX and potential newly affected sources.	No Applicable Requirements.	Performance track provisions. Facilities may qualify for reduced reporting frequency if additional HAP emission reductions are achieved.	Facility may opt to meet Performance Track requirements; these provisions are not currently applicable.
40 CFR Part 63, Subpart N - National Emission Standards for Hazardous Air Pollutants from Hard Chromium Electroplating				
§63.340	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Identifies the affected sources for Subpart N	There are 5 tanks currently in service on the Engines facility line, two tanks perform plating or contain chromium solutions.
§63.341	Hard chrome plating lines, electroplating and anodizing tanks	No Applicable Requirements.	Definitions for Subpart N	No. comment.
§63.342 (a) and (b)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	(a) Each owner/operator to apply MACT; (b) emission limits apply during normal operations including startup and shutdown, not during malfunction, and standard for affected sources must be met even if commingled with non-affected sources.	The Engines facility chrome electroplating line is controlled by a dedicated scrubber, and the facility will comply with established standards during operation, startup and shutdown.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.342(c)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	For a small, hard chromium electroplating facility, (ii) the exhaust stream discharged to the atmosphere may not exceed 0.03 milligrams of total chromium per dry standard cubic meter (mg/dscm). (2)(i) A small electroplating facility is one for which cumulative rectifier capacity is 60 million amp-hr/yr or less.	The Engines chrome plating line will maintain records to demonstrate that the" small facility" amp-hr/yr threshold is not exceeded. Compliance with the emission standard will be demonstrated by source testing, and continued compliance will be based on scrubber parameters and operating/maintenance work practices.
§63.342 (d) and (e)	Hard chrome plating lines, electroplating and anodizing tanks	Not Applicable.	Standards for decorative chromium electroplating and decorative chromium baths using trivalent chromium.	These types of processes are not present at the Engines facility.
§63.342(f)(1)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Work practice standards. Facility is to operate in a manner consistent with good practices; malfunctions to be corrected as soon as practicable in accordance with site-specific O&M Plan.	Engines facility will consistently operate and maintain the affected source and control device following good practices. Malfunctions to be corrected as soon as practicable in accordance with the site-specific O&M Plan.
§63.342(f)(2)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Work practice standards. Determination by the Administrator of acceptable practices will be made using available information. Administrator may require changes to the O&M Plan if it is inadequate, based on criteria in this paragraph.	Engines facility will consistently operate and maintain the affected source and control device following good practices. Malfunctions to be corrected as soon as practicable in accordance with the site-specific O&M Plan.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.342(f)(3)(i)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Operation and Maintenance Plan. This Plan to be included by reference in the Title V permit. It shall specify O&M criteria, and include checklists for documentation. For sources with add-on control device, the Plan shall include the work practice standards from Table 1 of this Section, and procedures to identify malfunctions and implement corrective actions. .	Engines facility will continue to follow the most current O&M Plan. The Plan contains suitable work practices, checklists, procedures, and documentation. The work practice procedures provided in Table 1 in (f)(3) for the packed bad scrubber, including quarterly activities, are incorporated in the O&M Plan.
§63.342(f)(3)(ii)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Operation and Maintenance Plan. If it is found in the event of a malfunction that the O&M Plan fails to address adequately malfunction procedures and corrective/preventative measures, the Plan shall be revised within 45 days of that event.	Engines facility will continue to follow the most current O&M Plan. Should a malfunction event demonstrate that some aspect of the Plan must be revised (e.g, work practices, checklists, procedures), the facility will do so within 45 days of the event.
§63.342(f)(3) (iii), (iv), (v) and (vi))	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Operation and Maintenance Plan. Record keeping shall follow requirements in §63.347(g); if malfunction response actions deviate from the O&M Plan, facility will notify within 2 days, and file a letter report within 7 days; the current O&M Plan, and prior Plans for a period of 5 years shall be kept available for inspection. Existing SOPs or O&M Plans for other programs may be used if they meet the specifications of this section.	Engines facility will continue to follow the most current O&M Plan, and maintain specified records and prior versions of the Plan. Notifications and reports, if required, will be submitted by the facility as required by this paragraph.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.343(a)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Establishes compliance dates and alternative procedures for extensions, etc.	Engines facility has met the required compliance milestones for this Subpart.
§63.343(b)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	To demonstrate initial compliance a performance test for emissions to the atmosphere is to be conducted as specified in this section.	Engines facility has met the requirement for the initial performance test. The current permit contains a provision for periodic re-test every 24-30 month period, which is more stringent than the requirement in this Subpart.
§63.343(c)(2)(i)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Monitoring for continuous compliance – Packed bed scrubber. During the initial performance test, establish the system pressure drop and inlet velocity pressure parameter ranges.	Engines facility has met the requirement for the initial performance test and established suitable parameter ranges that correspond to emissions meeting the standard.
§63.343(c)(2)(ii)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Monitoring for continuous compliance – Packed bed scrubber. Monitor and record the system pressure drop and inlet velocity pressure parameter values. To be in compliance, the pressure drop shall be within +/- 1 " of water column, and the velocity pressure within 10% of the values established during the performance test.	Engines facility has established monitoring systems and procedures for the scrubber parameters. Ranges may be revised as appropriate in response to results from subsequent performance tests.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.344 (a), (b) and (c)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Performance Test requirements. (a) Submit a Test Plan containing elements listed in this paragraph; (b) provisions if an initial start up test is to be used for Subpart N compliance; (c) establishes RM 306 or 306A as the primary reference methods for chromium emissions, other allowable alternatives are provided.	Engines facility has met the requirement for the initial performance test following the procedures and test methods that meet these requirements. The current permit contains a provision for periodic re-test which is more stringent than the requirement in this Subpart. Re-test programs will comply with the Test Plan and methodology requirements in this section.
§63.344(d)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Performance Test requirements (continued): (d) specifies parameter monitoring devices: (2) general specifications, (4) velocity pressure monitoring , and (5) pressure drop monitoring (5) are applicable to the Engines facility.	Engines facility has met the requirements for the installation of scrubber parameter monitoring devices that meet the specifications of this section.
§63.344(e)	Hard chrome plating lines, electroplating and anodizing tanks	Not Applicable.	Compliance provisions for multiple sources controlled by a common add-on device.	Multiple affected sources (i.e., multiple plating lines) are not present.
§63.345	Hard chrome plating lines, electroplating and anodizing tanks	Not Applicable.	Establishes notification timeframe and content requirements for new or reconstructed sources subject to this Subpart.	Should the Engines facility plan a new or reconstructed chrome plating line that would be an affected source, these provisions will be followed.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.346	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Record keeping requirements. (a) general duty to maintain records specified by this Subpart and Subpart A; (b) lists the expected records for the source process and control device to include but not limited to: inspection records, maintenance documentation, malfunction events (if any) and response actions, test reports, documentation related to excess emission events (if any), cumulative process operating time, cumulative rectifier capacity; (c) requires records to be retained on-site for 5 years.	Engines facility has established the procedures and systems for record keeping pursuant to Subpart N. Records will continue to be maintained following the specifications in this section. Records will be retained on-site for 5 years from the date of the record.
§63.347 (a) and (b)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	General reporting requirements. Source is to adhere to reporting requirements in Subpart A and Table 1 of this Subpart.	Engines facility has established procedures for ongoing reporting in compliance with this section. Report submittals are made to the Compliance Officer of MCAQD.
§63.347(c)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Initial Notifications. Establishes timeframe, procedures and content for initial notification related to a new or reconstructed affected source.	Engines facility has met this requirement for existing process. Should the Engines facility plan a new or reconstructed chrome plating line that would be an affected source, these notification provisions will be followed.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.347(d)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Notification of performance test. Establishes timeframe and procedures for notification related to a performance test.	Engines facility has completed the initial performance test for this process. Notifications for re-tests will be provided according to this section, and related requirements in MCAQD Rule 270. Notifications will be sent to the Compliance Officer of MCAQD.
§63.347(e)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Notification of compliance status. Establishes timeframe and procedures for notification required each time an affected source becomes subject to this Subpart.	Engines facility has completed the notification of compliance status for this process. Should the Engines facility plan a new or reconstructed chrome plating line that would be an affected source, these notification provisions will be followed.
§63.347(f)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Performance Test results. Establishes timeframe and reporting procedures for a performance test report. For a facility with a Title V permit, reports are to be submitted within 90 days following completion of the test to the permitting authority.	Engines facility has completed the initial and a subsequent performance test for this process. Future test reports will be submitted according to this section, and related (or more stringent) requirements in MCAQD Rule 270.
§63.347(g)	Hard chrome plating lines, electroplating and anodizing tanks	Not Applicable.	Ongoing compliance status reporting requirements for affected sources located at Major sources.	The Engines facility is not a major HAP source.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.347(h)	Hard chrome plating lines, electroplating and anodizing tanks	2 in-service chrome-containing tanks and scrubber #HPV773D	Ongoing compliance status reporting requirements for affected sources located at Area sources. A summary report containing the applicable elements in paragraph (g)(3) is to be completed annually and retained on-site. If exceedences are reported, then frequency may be increased to semi-annual until this frequency is re-set on a case-by-case basis.	Engines facility has completed the initial and a subsequent compliance status reports for this process. Future reports will be submitted according to this section. The existing Title V permit is more stringent than this Subpart, as it requires that the reports be submitted semi-annually. Further, the Title V permit specifies that reporting frequency will be increased to quarterly if monitoring data shown the chromium emission limit has been exceeded. Periodic compliance status reports will be sent to the Compliance Officer of MCAQD.
§63.347(i)	Hard chrome plating lines, electroplating and anodizing tanks	Not Applicable.	Reports associated with trivalent chromium baths	Trivalent chromium baths are not included in the Engines facility process.
40 CFR Part 63, Subpart ZZZZ: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE).				
§63.6580, §63.6585, and §63.6590	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes the affected source categories, and identifies the engines at area sources that are subject to this Subpart. "An existing stationary CI RICE located at an area source of HAP emissions" are included as affected sources.	No comment

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6595	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Stationary CI RICE located at area sources must comply with the applicable emission and operating limitations in this Subpart no later than May 3, 2013.	The roster of emergency engines at the Engines facility is compliant with the Subpart requirements from 2013.
§63.6600 through §63.6602 and §63.6604	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	Not Applicable.	Provides references to Subpart ZZZZ Tables for emission and operational limitations for categories of RICE at major sources. §63.6604 sets fuel standard for stationary non-emergency engines rated more than 300 hp.	The Engines facility is an area source, so the requirements for major sources of HAP are not applicable.
§63.6603	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Section (a) specifies that existing stationary RICE located at an area source of HAP must comply with requirements in Table 2d and operating limitations in Table 2b for the appropriate engine category. For emergency CI RICE these tables require: a. Change oil and filter every 500 operating hours or annually, whichever comes first b. Inspect air cleaner every 1,000 operating hours or annually, whichever comes first. c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.	The roster of emergency engines at the Engines facility is compliant with these operating and maintenance requirements from 2013.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6605	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	General Requirements. (a) Comply with the Subpart requirements at all times; (b) determination of compliance based on available information, e.g., review of O&M procedures and records, and inspections.	The Engines facility will ensure that the emergency engines are operated and maintained in a manner that will comply with the Subpart requirements. Records will be maintained as specified in this Subpart to demonstrate compliance.
§63.6610 and §63.6611	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	Not Applicable.	Provides references to Subpart ZZZZ Tables for performance testing dates and other requirements for categories of RICE at major sources.	There are no numerical emission limits or testing requirements specified for CI RICE emergency engines. Therefore, these engines at the facility (an area source) are not subject to initial testing requirements.
§63.6612	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Includes performance testing requirements for CI RICE at area sources. (a) specifies that affected sources must conduct initial performance tests stipulated in Tables 4 and 5 of this subpart, according to Table 4, Stationary CI RICE are to reduce CO emissions as tested by a portable CO/O_2 analyzer technique; (b) outlines that conditions for valid testing.	There are no numerical emission limits or testing requirements specified for existing CI RICE *emergency engines* in Table 2d. Therefore, these engines at the facility (an area source) are not subject to initial testing requirements from Table 4.
§63.6615 and §63.6620	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	Not Applicable.	Establishes the initial testing timeframes and procedures for various categories of stationary RICE	There are no numerical emission limits or testing requirements specified for existing CI RICE *emergency engines* in Table 2d. Therefore, these engines at the facility (an area source) are not subject to initial testing requirements.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6625	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes monitoring, installation, collection, operation and maintenance requirements. For emergency RICE at area sources: (f) the installation of a non-resettable hour meter is required; (g) engine idling time at start up is not to exceed 30 minutes, and (h) the facility has an option of using an oil analysis program to extend the specified oil change requirement.	Engines facility will install non-resettable hour meters and establish routine test protocols for the emergency engines to ensure that idling time does not exceed 30 minutes per startup. The facility reserves the option to implement an oil analysis program to extend the oil change frequency requirements.
§63.6630 and §63.6635	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	Not Applicable.	Establishes requirements for the initial testing for operating limitations, reporting of results, and continuous monitoring for compliance with numerical limits.	There are no numerical emission limits or testing requirements specified for existing CI RICE *emergency engines.* Therefore, engines at the facility (an area source) are not subject to initial testing and monitoring requirements.
§63.6640 (a), (b), and (d)	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes methods for continuous demonstration of compliance. For emergency RICE at area sources: (a) demonstrate compliance with operational requirements (Tables 2b and 2d) using Table 6 procedures. (b) report each event when operational requirements are not met as a deviation in accordance with §63.6650; (e) report each instance when applicable requirements in Subpart A are not met.	Compliance and deviation reporting procedures meeting these requirements have been implemented at the Engines facility for the roster of emergency RICE from 2013.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6640 (f)	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes special operational limits for emergency RICE: (1) non-emergency operation outside of maintenance purposes limited to 50 hrs/yr; (2) no limit on emergency operating hours; (3) maintenance and readiness testing limited to 100 hrs/yr; (4) sets special situation, non-emergency operational limits.	Engines facility will comply with these operating hour limitations for the affected source generators. Operating time and purpose records will be maintained to demonstrate compliance.
§63.6645	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes notification requirements. (a) for existing emergency RICE not subject to numerical emission limits, notifications under Subpart A are not applicable; remainder of this section outlines notification requirements for RICE at major sources, and/or those subject to testing requirements.	There are no numerical emission limits or testing requirements specified for existing CI RICE at the Engines facility. The exemptions from notifications given in this section apply to the facility.
§63.6650 (a) – (d), and (e)	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Establishes reporting dates and contents. In (a) and (b) submit semi-annual and annual compliance reports, and these may be submitted according to the schedule established by a permit under Part 70; (c) and (d) outline the contents of the compliance reports; (e) outlines report contents for units using CMS and is not applicable.	Compliance and deviation reporting procedures meeting these requirements have been implemented at the Engines facility for the roster of emergency RICE from 2013.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6650 (f)	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	For affected sources with a Part 70 permit having semi-annual Monitoring Report requirements, the contents of, and deviations to be reported in the semi-annual Compliance Reports outlined in this section may be incorporated in the Part 70 permit Monitoring Reports	As allowed by this paragraph, the Engines facility will incorporate the deviation and other items to be reported under this subpart in the semi-annual Monitoring Reports required by its Title V permit.
§63.6655	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Specifies record keeping requirements. For emergency RICE at area sources: (a) records pertaining to Subpart A notifications, records of malfunction events and response actions, records of maintenance actions; (d) records pertaining to RICE operation and as specified in facility maintenance plan; (e) keep records demonstrating compliance with operational standards from Table 2d; (f) records of hours recorded on non-resettable meter and purpose for operation.	Compliance record keeping procedures meeting these requirements have been implemented at the Engines facility for the roster of emergency RICE from 2013.
§63.6660	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Records to be kept readily accessible in hardcopy or electronic form for 5 years from the date of the record.	Engines facility will continue to retain compliance records for 5 years as specified in this Title V permit.
§63.6665	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Table 8 of this subpart lists the provisions of Subpart A that are applicable. These are limited for existing emergency RICE operated at an area source of HAP.	Notifications and other General Provision requirements have been met at the Engines facility for the roster of emergency RICE from 2013.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.6670	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Specifies the authorities delegated to the permitting agency and retained by the Administrator.	No comment.
§63.6665	Stationary reciprocating internal combustion engines (RICE) at Major or Area Sources of HAP	8 Emergency Generators, and two Fire Water Pumps, all are compression-ignition (CI) RICE.	Definitions for this subpart.	No. comment.
40 CFR Part 63, Subpart XXXXXX: National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations.				
§63.11504 and §63.11505	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Definition of affected facilities at Area Sources of HAP emissions	Listed units at the Engines facility are subject to this NESHAP subpart. ***Note – thermal spray operations are scheduled to be removed.***
§63.11506	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Existing sources to achieve compliance by July 1, 2010; new affected sources with startup date prior to July 1, 2008, to achieve compliance by July 1, 2008.	Listed units at the Engines facility have achieved compliance with all applicable work practice standards.
§63.11507(a)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, Bldg 422	Work practices for plating tanks are to comprise either (1) a wetting agent; (2) capture and control exhaust emissions; or (3) cover the tank based on standards in this section.	The electroless Ni plating tank operates as a batch process. The electroless Ni tank(s) are also under a vapor capture hood, and captured emissions are routed to a scrubber at Building 422, conforming to paragraph (a)(2).

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.11507 (b) – (d)	Electroless Ni plating, thermal spray, and polishing operations	Not Applicable.	Sets work practices for (b) flash or short-term plating tanks, (c) tanks used for both short-term and for plating that is not short-term, and (d) tanks containing cyanide solutions.	None of these categories of plating tanks are present at the Engines facility.
§63.11507 (e)	Electroless Ni plating, thermal spray, and polishing operations	Dry mechanical polishing equipment (e.g., metal HAP part polishing units)	For dry mechanical polishing equipment operations on parts containing plating metal HAP, operate a capture system that transports emissions to a stipulated control device. Operate the device in accordance with manufacturer instructions and maintain documentation.	Dry polishing units at the Engines facility may consist of hand-held grinding and polishing equipment. These work stations are covered by hoods that convey captured particles to fabric filter (baghouses or cartridge filters) control devices.
§63.11507 (f)(1)	Electroless Ni plating, thermal spray, and polishing operations	thermal spray (if applying metal HAP coatings)	Existing thermal spray operations must operate with PM capture system that conveys particulate to stipulated control device. Operate the device in accordance with manufacturer instructions and maintain documentation.	The existing thermal spray units at the Engines facility are to be removed. When in operation, exhaust is routed to either a fabric filter or rotocolone control devices.
§63.11507 (g)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	For existing plating or polishing operations subject to this subpart, implement the applicable work practices from paragraphs (1) – (12) in this section	The electroless Ni plating tank does not have a cover, however, agitation is minimized, quality control is maintained, inspections and housekeeping measures (vacuuming and washdowns) are used to minimize releases and spills, among other measures.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.11508 (a), (b)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	a) Submit a Notification of Compliance Status, in accordance with §63.11509 (b); and b) maintain compliance with applicable management practices.	The Engines facility is in compliance with the applicable management practices.
§63.11508 (c)(2)(i) through (v)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27,	For the control system capturing emissions from the Ni plating line, comply with demonstrations of compliance in (c)(2)(i) – (v).	The Engines facility has installed a suitable packed bed scrubber for the Ni plating line, it is managed and operated according to manufacturer recommendations, and facility has stated compliance with these requirements in the Notification of Compliance Status.
§63.11508 (c)(3)	Electroless Ni plating, thermal spray, and polishing operations	Not Applicable	For the covers used on the Ni plating line tanks, comply with demonstrations of compliance in (c)(3)(i) – (iv).	The Engines facility complies with the control system option in (c)(2), and does not utilize tank covers for the Ni plating line.
§63.11508 (c)(4) – (7)	Electroless Ni plating, thermal spray, and polishing operations	Not Applicable	Sets management and compliance demonstration requirements for (4) continuous electrolytic tanks, (5) and (6) flash/short term electrolplating tanks, and (7) plating tanks containing cyanide.	None of these affected sources or control systems is in use at the Engines facility.
§63.11508 (c)(8)	HAP metal part polishing operations	Ni part polishing, hand-held grinding/polishing	For the emission control system used on Ni part polishing operations comply with demonstrations of compliance in (c)(8)(i) – (iii).	The Engines facility has installed suitable particulate capture and control systems for the Ni part polishing operations, and these are managed and operated according to manufacturer recommendations, and facility has stated compliance with these requirements in the Notification of Compliance Status.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.11508 (c)(9) and (10)	Electroless Ni plating, thermal spray, and polishing operations	Thermal spray units (if applying metal HAP coatings)	For permanent thermal spray systems for which a HEPA or fabric filter is installed as the control device, follow the compliance demonstration requirements in paragraphs (9)(i) through (10)(iii).	The Engines facility has installed suitable particulate capture and control systems for the thermal spray systems, and these are managed and operated according to manufacturer recommendations, and has stated compliance with these requirements in the Notification of Compliance Status. ***Note – thermal spray operations are scheduled to be removed.***
§63.11508 (d)(1) and (2)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	1) always operate and maintain the affected sources in accordance with specified management and work practices, and 2) prepare annual compliance certification in accordance with §63.11509 (c).	The Engines facility operates and maintains the affected sources and control devices for emission units subject to this subpart, and includes the compliance requirements for this subpart in annual compliance certifications.
§63.11508 (d)(4)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	For these affected sources (i) operate and maintain in accordance with manufacturer's specifications; (ii) take corrective action after malfunctions; (iii) state that system has been properly operated in annual certifications; (iv) record: results of control system inspections, deviations; and corrective actions; (v) keep manufacturer's documentation readily available.	The Engines facility operates and maintains the affected sources and control devices for emission units subject to this subpart, documents inspections, deviations, malfunctions and corrective actions, and refers to this information in annual compliance certifications.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.11508 (d)(6) and (8)	Electroless Ni plating, thermal spray, and polishing operations	Not Applicable	For the covers used on a batch Ni plating line tanks: (i) cover the tank 95% of the electrolytic process time, (ii) record the times the tank is operated and that the tank is covered, (iii) state in annual certification that the tank has been compliant with the 95% cover requirement.	The Engines facility complies with the control system option in (c)(2) of this section, and does not rely on tank covers for the Ni plating line. The requirements related to operational and work practice standards for tank cover controls are not applicable.
§63.11508 (d)(3), (5), and (7)	Electroless Ni plating, thermal spray, and polishing operations	Not Applicable	Sets management and compliance demonstration requirements for (3) surfactant/fume suppressants, (5) limited plating time, and (7) tank covers.	The Engines facility complies with the control system option in (c)(2) of this section. None of the control systems described in this paragraph are in use at the Engines facility.
§63.11509 (a)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Submit an Initial Notification within 120 days after July 1, 2008, containing items (1) through (4) of this section	The Engines facility has already submitted this Initial Notification.
§63.11509 (b)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Submit a Notification of Compliance Status, by July 1, 2010, containing items in §63.11509 (b)(2)(i) – (iv).	The Engines facility has already submitted this Notification of Compliance Status.
§63.11509 (c)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Submit, an annual certification of compliance report, containing the items in §63.11509 (c)(2), (4) and (6), which are the paragraphs applicable to the Engines affected sources. The report is to be submitted no later than January 31 of the year following the reporting period.	The Engines facility will continue to prepare the certification of compliance report for this NESHAP subpart as a component of the annual Compliance Certification and the semi-annual Monitoring Reports that are submitted for the Title V permit.

Section Citation	Affected Source(s)	Emission Point	Requirement	Comments
§63.11509 (d)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Deviations from compliance requirements during the year for affected sources subject to this subpart must be reported, along with corrective actions, to the delegated authority.	It is understood that MCAQD is the delegated authority for this NESHAP, and deviations and corrective actions will be included in the annual reports submitted to MCAQD.
§63.11509 (e) and (f)	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Retain records related to compliance with this subpart for 5 years from the date of the record (at least 2 most recent years on-site). Records to include Notifications, items in §63.10(b)(2)(i) – (iii) and (xiv), records showing compliance with management/equipment standards.	The Engines facility has developed record keeping formats for these required records related to this NESHAP, and will retain these records for at least 5 years.
§63.11510	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Comply with the applicable requirements of NESHAP General Provisions (40 CFR Part 63, Subpart A) as outlined in Table 1 of this subpart.	The Engines facility has implemented the General Provisions for the NESHAPs as required for this and other subparts that are applicable to the facility.
§63.11511	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	Definitions for this subpart.	No comment.
§63.11512	Electroless Ni plating, thermal spray, and polishing operations	Electroless Ni plating, Tank #27, thermal spray (if applying metal HAP coatings) Ni part polishing units	EPA may delegate authority to implement and enforce this NESHAP, with the exception of several items in (1) – (4) of this section, such as alternative opacity emissions standards, or major change to test methods.	The Engines facility acknowledges the limits on delegated authority, and will defer to the Administrator, rather than MCAQD, if one of the listed alternative standards or test method changes is to be considered.

4.4 OTHER FEDERAL AIR QUALITY PROGRAMS

4.4.1 Compliance Assurance Monitoring Program (40 CFR Part 64)

The federal regulations implementing Compliance Assurance Monitoring (CAM) are provided at 40 CFR Part 64. These regulations potentially apply to major sources that must obtain a Title V operating permit pursuant to 40 CFR Part 70. The Engines facility is such a source, and is potentially subject to the provisions of 40 CFR 64, depending upon other applicability factors.

The CAM rules are primarily aimed at emission units that are individually above major source thresholds and that utilize control devices in order to comply with an emission limitation (40 CFR 64.2). The emission units at the Engines facility, consisting primarily of gas-fired equipment, liquid-fuel fired Test Cells, and materials-use related to manufacturing, are subject to various emission standards under the current permit. Although these emissions units are in many cases controlled by an emission control device, none of them have individual PTE that approaches Major source thresholds. Consequently, the facility is not subject to CAM requirements.

4.4.2 Accidental Release Prevention Program / Risk Management Plans (40 CFR Part 68)

The Accidental Release Prevention Program requirements are contained in 40 CFR Part 68, and include development of site-specific Risk Management Plans (RMP). At this time, the Engines facility does not store on-site quantities of listed chemicals or fuels in quantities at or above the thresholds listed in 40 CFR Part 68. Consequently, this program is not applicable to the Engines facility. As provided in the General Conditions for the facility Title V permit, should the facility in the future store materials in above-threshold quantities then the requirements for RMP development and other Part 68 requirements will become applicable. However, these requirements have not been detailed in the current Title V permit.

4.4.3 Stratospheric Ozone Protection Regulations (40 CFR Part 82, Subpart F)

Manufacturing and test processes at the Engines facility do not involve the use of regulated chlorofluorocarbon (CFC) compounds. Therefore, these operations are not subject to CFC-related regulations in 40 CFR Part 82. However, to the extent that Engines facility personnel are to service air conditioning units of sufficient size to be covered under the rule, those personnel would be required to be certified and must use certified

equipment for refrigerant recovery and recycling. Further, the facility will comply with program management practices to track the compliance of contractors and suppliers of regulated CFC refrigerants. At this time, there is no plan to have in-house servicing of CFC-containing air conditioning equipment.

4.4.4 Mandatory Greenhouse Gas Reporting (40 CFR Part 98, Subparts A and B)

On October 30, 2009, this federal rule was promulgated requiring industrial facilities to report greenhouse gas (GHG) emissions from stationary source categories. The so-called mandatory reporting rule (MRR) requires facilities that may emit more than 25,000 tons per year of carbon dioxide (CO_2) or GHG equivalents to monitor/calculate emissions and report for all included categories starting on January 1, 2010. Annual reports are to be submitted to the EPA.. A framework for the necessary levels of quality assurance for the supporting monitoring techniques is also provided in the rule.

The Engines facility includes a number of stationary fuel combustion sources potentially subject to Subpart C of the MRR. The facility has conducted an examination of the maximum anticipated GHG emissions for the normal operation of these sources. The higher heating value and carbon content of the fuels were obtained from fuel specifications. Using these parameters, calculated annual emissions of CO_2, methane (CH_4) and nitrous oxide (N_2O) were determined for these units, and the facility concluded that the annual emissions will not approach the 25,000 ton per year threshold.

None of the other Subparts of the MRR apply to sources that are present at the Engines facility. Consequently, this monitoring and reporting program does not apply to the Engines facility. The documentation of this applicability review will be maintained at the facility and will be updated as required to reflect the current status of fuel combustion sources. At minimum, the natural gas and liquid fuel inputs will be monitored on a cumulative basis to comply with other Title V permit conditions.

4.4.5 Greenhouse Gas Tailoring Rule (40 CFR Parts 51, 52, 70, et al.)

The mandatory greenhouse gas reporting rule was followed by the so-called "tailoring rule" promulgated on June 3, 2010. This set of rules provides for the Prevention of Significant Deterioration (PSD) and Title V permitting processes for projects that increase emissions of greenhouse gases above an established significance level. The fundamental applicability test pertinent to the Engines facility is that a project is subject to PSD permitting, and a GHG BACT evaluation, if the resultant net GHG emissions increase is 75,000 tons per year or more of carbon dioxide equivalent. Currently, the Engines facility does not have a combined actual emission rate of 25,000 tons per year that would trigger applicability of the MRR. In the event that a large project is contemplated that may result in an increase of 75,000 tons carbon dioxide equivalent or above, the facility will become

subject to the MRR, and will assess the PSD permitting requirements pursuant to the "tailoring rule".

4.5 MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS I AND II

Several of the Regulation I and II rules are applicable to the Engines facility. To clarify the facility understanding of the primary requirements, this section addresses the rules from Regulations I and II that create General Conditions for the facility. Several Regulation II rules have been extensively revised as of February 3, 2016, to address changes to the MCAQD new source review (NSR) process. The following discussion identifies if any such revision changes the applicable requirements for the Engines facility.

4.5.1 Rule 100 – General Provisions and Definitions

Rule 100 contains general administrative procedures applicable to the Engines facility as a permit holder under Maricopa County Air Pollution Control Regulations. This rule provides definitions, administrative requirements, and general record keeping and reporting requirements. Among the general provisions are several that define specific compliance actions that will continue to be performed by the Engines facility:

- Retention of records related to air permit compliance for a five-year period after the date of the record (Section 504).

- Submittal of an Annual Emissions Inventory to MCAQD in a specified timeframe and format (Section 505).

4.5.2 Rule 130 – Emergency Provisions

Rule 130 establishes criteria and administrative requirements for reporting and affirmative defense of noncompliance due to emergencies. An emergency is defined as any situation arising from sudden and reasonably unforeseeable events beyond the control of the source that require immediate corrective action to restore normal operation. Notification procedures address the demonstration of a situation meeting the definition of an emergency to provide the facility an affirmative defense to an action brought for noncompliance. The recordkeeping requirements used to document an Emergency are listed in the rule. Emissions from emergency equipment such as generators and fire water pumps are not limited by this rule.

Sources at the Engines facility that potentially could be affected by an emergency include all of the gas-fired equipment, and the jet engine test cells. For example, the gas-fired units are subject to a 20 percent opacity limitation (Rule 300) that could be exceeded in an

emergency or due to a malfunction caused by a facility emergency. In that event, it is understood that the Control Officer must be notified by telephone of the emergency. Additionally, a notice of the emergency must be submitted to the Control Officer by certified mail, facsimile, or hand delivery within two (2) working days of an emergency.

4.5.3 Rule 140 – Excess Emissions

Rule 140 establishes criteria and administrative requirements for identifying and reporting excess emission events. Under certain abnormal operating conditions, such as equipment malfunction, there is some possibility for excess emissions from gas-fired equipment or the engine test cells at the Engines facility. In such an event, the facility will comply with the record keeping and reporting requirements, which include:

- The Control Officer must be notified by telephone or facsimile within twenty four (24) hours of the time the occurrence of excess emissions was first recognized (Section 501.1).

- More detailed written notification and technical description of the event's circumstances, including emission estimates and corrective measures performed, must be provided to the Control Officer within seventy two (72) hours (Section 501.2).

4.5.4 Rule 200 – Permit Requirements

Rule 200 describes the categories of air quality-related permits issued by MCAQD. As a Title V source, based on facility wide PTE levels, the requirement for the Engines facility is contained in Section 302.3: "A Title V permit . . . shall be required for a person to commence construction of . . ." (§ 302.3). By submitting this application, the Engines facility is acting to request a renewal Title V Operating Permit. Additional applicable requirements in this rule state that the Air Quality *Authority to Operate* for the current permit must be posted and supporting records must be retained at a location readily available for inspection (Section 311). Sections 301 (Permits Required) and 309 (Standards for Application) are also included in Permit V97-008.

4.5.5 Rule 210 – Title V Permit Provisions

Rule 210 includes provisions for Title V Permit application submittal, review, and permit issuance for facilities in Maricopa County deemed to be "major sources". Requirements for changes allowed without a permit revision and requirements for permit modifications are also covered in Rule 210. The Honeywell Engines facility will continue to be permitted as a Title V source due to its facility-wide PTE levels.

It is understood that the applicable compliance requirements contained in Rule 210 will be incorporated into the requested renewal permit to be issued by MCAQD, including those changes that result from the February 3, 2016 rule revision. In the existing facility permit a substantial number of monitoring and record keeping requirements are included that are not required by other applicable rules. These provisions, in accordance with the Permit Content requirements in Rule 210, Section 302, provide the means to ensure compliance with permit conditions. Detailed requirements derived from Rule 210 are listed in Table 4-3.

4.5.6 Rule 240 – Permit for New Major Sources and Major Modifications to Existing Major Sources

This rule implements the Prevention of Significant Deterioration (PSD) program for Maricopa County, for those geographic portions of the county and criteria pollutants that meet NAAQS, or are maintenance areas having come into NAAQS conformance. The locale of the Engines facility is considered to be in an attainment/maintenance area for NO_2, Lead (Pb), CO, and SO_2. Consequently, changes in annual emissions (in tons per year) of those pollutants must be evaluated in the event of a facility modification, to assess applicability of the PSD program to a project meeting the definition of a "major modification to an existing major stationary source".

Existing operational limitations on fuel-burning sources at the Engines facility allow the facility to be considered a “synthetic minor” source with respect to the PSD program (although it remains a major source under the Title V Operating Permit program). No substantive physical changes that could result in a net increase in emissions are anticipated at this time. Therefore, the requirements of Rule 240 are not applicable.

4.5.7 Rule 241 – Minor New Source Review (NSR)

Rule 241 (formerly "Permits for New Sources and Modifications to Existing Sources") was extensively revised as of February 3, 2016. It now provides control technology requirements and ambient air quality compliance assessment for new Title V or Non-Title V sources and minor modifications to existing Title V or Non-Title V sources of air pollution. This revised rule is applicable to new and existing sources other than new major sources and major modifications to permitted sources which would be subject to PSD permitting under Rule 240.

In the event that a physical change is made to existing sources, or if new sources are to be constructed, then the net emissions change on daily and annual bases will be compared to the listed threshold levels (§301) for criteria pollutants. Furthermore, contemporaneous changes during the preceding five (5) years will be combined with the project net emission increases for the comparison with thresholds. Should a qualifying modification

occur, that project would be subject to the requirement for consideration and possible implementation of lowest achievable emission rate (LAER) or best available control technology (BACT).

4.5.8 Rule 270 – Performance Tests

Rule 270 provides the administrative requirements and performance test criteria for stationary sources. The requested permit includes emissions units with controls that will be subject to testing requirements. For example, these requirements pertain to the BSVE System and Chrome Scrubber (Maintenance Number 92415005).

Sufficient demonstration of performance is to be specified in the requested renewal permit in the form of periodic performance tests in conformance with an approved Test Protocol, and compliance with an approved Operating and Maintenance Plan. The facility anticipates that required performance testing and supporting requirements outlined in Rule 270, and 40 CFR 60.8 will be incorporated in the requested permit, and the Engines facility will comply with these requirements.

4.5.9 Rule 280 – Fees

Rule 280 establishes fees for permitting actions and annual administrative and emission-based fees that are applicable to the Engines facility. This rule was most recently revised and reissued by MCAQD in May 2010. Applicable provisions in the revised rule and 2016 fee schedule are:

- The application fee for a renewal Title V permit is $3,500 (§ 301.1.a);
- Hourly engineering fees of approximately $150 per hour (as adjusted annually since 2010) will be assessed for processing of the renewal Title V application (§ 301.1);
- Annual administrative fee assessed for the Engines facility classified as "aerospace" as noted in § 301.2.a.
- Annual emissions-based fee of $42.39 per ton of actual emissions of all regulated pollutants during the previous calendar year, as per § 301.2.b, as determined by § 305 and adjusted annually under §304 of Rule 280.
- There is no fee for performance tests that are or may become applicable to the facility during the 5-year term of the Title V permit.

4.6 MARICOPA COUNTY AIR POLLUTION CONTROL REGULATION II, RULE 210 AND REGULATION III

For the Engines facility, a number of permit Specific Conditions involving operational limits, monitoring, and record keeping are derived from the generic Permit Content provisions in Regulation II, Rule 210 (Title V Permit Provisions). These conditions in the existing Title V permit are not tied to Regulation III RACT rules, but do impose enforceable requirements. To provide a more complete discussion of these applicable requirements, the existing permit conditions under Rule 210 are included in Table 4-3.

The county rules that implement reasonably available control technology (RACT) requirements are contained in Regulation III of the Air Pollution Control Regulations. These rules generate a variety of Specific Conditions in the current facility Title V permit. The understandings of the Engines facility regarding the applicable requirements, and the proposed methods to demonstrate ongoing compliance, are outlined in Table 4-3.

Table 4-3. Description of Applicable Requirements and Compliance Methods – MCAQD Regulation II Rule 210 and Regulation III

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
Rule 210 – Title V Permit Provisions – Permit Contents				
§301.7	Entire Facility	Entire Facility	Certification Required. Any application form, report, or compliance certification submitted under the County Rules or these Permit Conditions shall contain certification by a responsible official of truth, accuracy, and completeness of the application form or report as of the time of submittal.	Every submittal to the County by the facility contains within it a statement of certification of truth, accuracy, and completeness and is signed by the Responsible Site Official.
§302.1.b	Entire Facility	Entire Facility	Facility-Wide Requirements. The facility shall not cause, allow, or permit emissions in excess of the monthly and 12 month rolling limits of any single hazardous air pollutant (HAP) greater than 9.0 tons or total HAPs greater than 22.5 tons.	The facility will continue to calculate the facility-wide HAP emissions. Results will be contained in the Semi-annual Compliance Report.
§302.1.b	Engine Test Cells	Test Cells #: C-917/817, 930 & 931, 941 & 942, 943 & 944, 671	If at any time the rolling twelve month total for the listed groups of test cells exceeds the emissions listed in Table 21.3 of the existing Permit, the facility shall submit to the Department, new turbine engine specific emission factors or a testing protocol to determine turbine engine specific factors from the effected test cell(s) for approval.	The facility will comply with the requirement should emissions exceed the Table 21.3 levels.
§302.1.b	Engine Test Cells	Test Cells #: C-917/817, 930 & 931, 941 & 942, 943 & 944, 671	The facility shall not exceed the limits for each modification set forth in Table 31.2 of the Permit, based on prior BACT determinations.	The facility complies with this requirement.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1.b	Engine Test Cells	All test cells as enumerated in the equipment list	The facility shall use the emission factors in Table 31.1 of the Permit when calculating the emissions for all the test cells including the calculations for the annual CO and NO_X limits found in Table 31.2.	The facility complies with this requirement.
§302.1.b	Gas-fired boilers equipment	Gas-fired boilers and air heaters; incl 36MMBTU Boilers in Bldg 202; Rite Boiler in Bldg 105	Operational Limitations. The facility shall use only natural gas to fuel the affected boilers and air heaters. For the Rite Boiler, natural gas consumption is limited to 18 MMSCF for any rolling 12-month period, and install/operate a dedicated non-resettable gas usage meter.	The Engines facility will only use natural gas to fuel the affected boilers, the non-resettable meter on the Rite boiler will be used to monitor and limit usage to less than eighteen (18) MMSCF during any 12-month rolling period.
§302.1.b	Certain gas-fired equipment	Two (2) Superior Mohawk Boilers in Bldg 422 and the Two (2) GasTech Air Heaters outside Bldg 204	Emission limits. Emissions of NO_X from the 2 Mohawk boilers shall not exceed 1.1 tons, and from the 2 GasTech air heaters shall not exceed 3.2 tons during any rolling 12-month period.	The Engines facility will use gas consumption data and conservative emissions factors to calculate NO_X emissions and demonstrate compliance with these limits.
§302.1.b	Certain gas-fired equipment	Two (2) Superior Mohawk Boilers in Bldg 422 and the Two (2) GasTech Air Heaters outside Bldg 204	Operational Limits. Gas consumption by the 2 Mohawk boilers shall not exceed 22 MMSCF and shall not exceed 45.5 MMSCF in the 2 GasTech heaters during any rolling 12-month period.	The Engines facility will monitor gas consumption data using dedicated, non-resettable gas usage meters.
§302.1.b	VOL Storage Tanks	Methanol Storage Tank	The facility shall limit annual throughput of methanol in the Building 422 underground methanol tank to less than 88,301 gallons methanol per year. Usage calculations shall be made monthly and on a rolling twelve month basis.	The facility complies with this requirement.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1.b and .c	Thermal Spray Units	Thermal Spray Units (Note – thermal spray is scheduled to be removed.)	The facility will record weekly pressure differential readings for the thermal spray ECS, and will investigate the cause of any reading out of range. Thermal spray units shall operate only when the emissions are routed through the ECS, and the ECS shall not be bypassed.	All thermal spray equipment at the facility subject to the requirements of this condition are equipped with pressure differential monitors, and are interlocked to prevent operation if the ECS is not operating.
§302.1.b	Engine Test Cells	Test Cell # 671	The annual fuel usage limit for Test Cell 671 is 374,400 gallons per year calculated as a twelve month rolling average.	The facility complies with this requirement.
§302.1.b	BSVE System	BSVE System	Emission standards and operational limits as imposed through the NSR permitting process for the BSVE system. Contained in AOS 1 through 5 in existing Operating Permit.	The Engines facility will continue to comply with the emission standards and operational limits contained in the current permit.
§302.1.c	Visible Emissions Sources Facility-Wide	Point and fugitive visible emissions sources.	Compliance Determination – Opacity. The existing permit conditions require that visible emissions and opacity observations be conducted in accordance with a weekly schedule, with follow up observations by EPA Reference Method 9 as stipulated in existing Condition 20.D.	The Engines facility will comply with all applicable opacity monitoring provisions for point and fugitive sources. If visible emissions are observed, the facility will apply Method 9 visual observations within 24 hours with the calculations specified in Method 203B for time-based opacity limits. Follow-up observations will be conducted as specified in the current Title V permit.
§302.1.c	Engine Test Cells	All test cells as enumerated in the equipment list	The facility shall use the emission factors set forth in EPA Document; *Locating and Estimating Air Emissions from Sources of Polycyclic Organic Matter* Table 4.11.2-1 PAH Emission Concentrations in Aircraft Turbine Engine Exhaust for HAP calculations and the emission factors in AP-42, Table 3.1-1 for criteria pollutants as listed in Table 31.1 of the Permit.	The facility complies with this requirement.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1.c	Engine Test Cells	Test Cells #: C-917/817, 930, 931, 941, 942, 943, 944, 671	The facility shall calculate the monthly emissions of NO_X and CO for all tests of the turbine engines.	The facility will continue to calculate monthly emissions from the test cells.
§302.1.d	Entire Facility	Entire Facility	Monitoring Records. The facility shall retain records of all required monitoring data and support information for a period of at least five years from the date of the monitoring sample, measurement, report, or application.	The required information will be collected during any monitoring events conducted by the facility.
§302.1.d	Engine Test Cells	Test Cells #: C-917/817, 930, 931, 941, 942, 943, 944, 671	The facility shall keep the following records for each test cell: the date, duration, fuel usage and type of engine tested on a daily basis.	The facility will continue to maintain these records.
§302.1.d	BSVE System	BSVE system thermal oxidizer, and BSVE stack emission point.	Continuously monitor BSVE system thermal oxidizer operating temperature, quantity of soil vapor entering the thermal oxidizer(s), and supplemental fuel flow rate as prescribed in AOS1 in existing Operating Permit.	The Engines facility will continue to monitor the specified thermal oxidizer operating parameters contained in the current permit.
§302.1.e	Engine Test Cells	Test Cells #: C-917/817, 930 & 931, 941 & 942, 943 & 944, 671	The facility shall provide the rolling twelve month totals of CO and NO_X, including the calculations using the emission factors for each of the listed groups of test cells.	The required information will continue to be included in the semi-annual monitoring reports and associated compliance certifications.
§302.1.e	Processes and operations that may emit air contaminants to the atmosphere	Entire Facility	The facility shall provide a copy of the portion of the odor log that covers the applicable 6-month reporting period. If no complaints were received during the reporting period, a statement to that effect may be substituted for a copy of the odor log.	An odor log covering the reporting period will continue to be submitted with the semi-annual monitoring report. If no complaints were received during the reporting period, a statement to that effect may be substituted for a copy of the odor log.
§302.1.e	Processes and operations that may emit air contaminants to the atmosphere	Entire Facility	Deviation Reporting. The facility shall report deviations from permit requirements, including those attributable to upset conditions	The facility will notify the MCAQD of any deviations within two (2) working days from knowledge of the deviation and include this information on the Semi-Annual Monitoring Reports.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1.e	Entire Facility	Entire Facility	Facility-Wide Reporting Requirements. The facility shall file semiannual monitoring reports with the Control Officer in 6-month intervals by the end of the month following the reporting period.	Semiannual monitoring reports will continue to be submitted to the Control Officer by the end of the month following the reporting period.
§302.1.e	Entire Facility	Entire Facility	Semiannual monitoring reports shall identify instances of deviations from the permit requirements in the semi-annual monitoring report.	A deviation log covering the reporting period will continue to be submitted with the semi-annual monitoring report.
§302.1.e	Processes and operations that may emit air contaminants to the atmosphere	Entire Facility	The facility shall include the results of the monthly and the rolling 12-month HAP emissions calculations for each month in the six-month reporting period.	The facility will continue to submit a table of monthly and 12-month rolling sum HAP emissions with the semi-annual compliance reports.
§302.1.e	BSVE System	Emission controls included in the BSVE System	The facility shall submit a semiannual report containing a data review pertaining to the BSVE system (parameter monitoring and continuous data records). Iif any unit is found to be operating outside of the specified operating limits, a detailed description of the deviation must be recorded.	The required information will continue to be included in the semi-annual monitoring reports and associated compliance certifications.
§302.1.e	Abrasive Blasting Units listed in Equipment List (other than Insignificant)	Dust Collector Maintenance Numbers: 92401443, 92401472	Limitations for Blasting. Discharge of particulate matter to ambient air shall not be in excess of 0.02 gr/dscf from any abrasive blasting emissions unit.	The facility conducts all Abrasive Blasting Operations in confined enclosures, which are vented through interior, dedicated filters or to a building exterior through department-approved emission control devices.
§302.1.h	Entire Facility	Entire Facility	The facility must comply with all conditions of this permit and with all applicable requirements of Arizona air quality statutes and the air quality rules.	The facility maintains compliance with all applicable Arizona air quality statutes and regulations.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1.h	Entire Facility	Entire Facility	The facility shall halt or reduce the permitted activity in order to maintain compliance with applicable requirements of Federal laws, Arizona laws, the County Rules, or other conditions of this Permit.	The facility ensures proper equipment inspections and other observations are performed to verify compliance. The Engines facility will continue to comply with this requirement.
§302.1.h	Entire Facility	N/A	For any major source operating in a nonattainment area designated as serious for PM10, for which the source is classified as a major source for PM_{10}, the source shall comply with the best available control technology (BACT), as defined in County Rule 100.	Current facility PM10 emissions are less than the major source threshold; therefore the facility is not subject to PM10 BACT requirements.
§305.1.c	Entire Facility	N/A	The facility shall file an annual compliance certification with the Control Officer and also with the Administrator of the USEPA.	The facility submits the proper annual compliance certifications.
§305.1.d	Entire Facility	N/A	Based on the certified information contained in the application for this Permit, the facility is in compliance with all applicable requirements in effect as of the first date of public notice of the proposed conditions for this Permit unless a compliance plan is included in the Specific Conditions section of this Permit.	No compliance plan is required at this time. However, the facility shall continue to comply with all applicable requirements and shall meet any applicable requirements that may become effective during the term of this permit on a timely basis.
§305.1.d	Entire Facility	N/A	Annual Compliance Certification. The facility shall file an annual Compliance Certification for the period January 27 through January 26, of each year, by the end of the month following the reporting period.	The facility will continue to submit the proper annual compliance certifications.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
Rule 300 – Visible Emissions				
§301	Sources for which no source-specific opacity requirements apply.	Applicable to gas-fired units, test cells, IC-engines (< 50 bhp), as enumerated in the Equipment List	Limitations Opacity/General. This rule states that 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 percent opacity for a period aggregating more than three minutes in any 60-minute period."	The Engines facility will comply with all applicable opacity provisions for those point and fugitive sources not otherwise subject to a source-specific Regulation III opacity requirement. The facility will continue to conduct a weekly facility walk-through to observe possible visible emissions.
§501	Sources for which no source-specific opacity requirements apply.	Applicable to gas-fired units, test cells, IC-engines (< 50 bhp), as enumerated in the Equipment List	Compliance Determination – Opacity. This rule requires that opacity observations be conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203B. This latter method addresses the appropriate averaging calculations when one or more of the individual readings are above the 20 percent opacity standard.	The Engines facility will comply with all applicable opacity monitoring provisions for those point and fugitive sources not otherwise subject to a source-specific Regulation III opacity requirement. If visible emissions are observed, the facility will apply Method 9 visual observations within twenty four (24) hours with the calculations specified in Method 203B for time-based opacity limits. Follow-up observations will be conducted as specified in the current Title V permit.
Rule 310.01 – Fugitive Dust from Non-Traditional Sources of Fugitive Dust				
§301	Open areas, unpaved roadways and parking areas	Non-Traditional Dust Sources: Vehicle use in open areas, parking lots, and vacant lots	Owners/operators of non-traditional dust sources are subject to Rule 310.01 standards and other requirements. Section provides for Control Officer to provide written notice of required stabilization, and to enter property to take remedial/corrective actions.	The Engines facility will comply with dust control measures for stabilization where required.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.1 to 302.3	Open areas, unpaved roadways and parking areas	Non-Traditional Dust Sources: Vehicle use in open areas, parking lots, and vacant lots	When engaged in dust generating activities, owner/operators will implement control measures to meet visible emissions requirements	The Engines facility will comply with dust control measures for stabilization where required.
§302.4	Vehicle use in open areas and vacant lots	Not Applicable	Owner/operator shall not allow visible emissions beyond the property line; stabilization and/or control measures required include soil crust, vegetative cover, preventing motor vehicle travel, gravel, or alternative measures for open areas and vacant lots 0.1 acre or larger, with 500 sq. ft. or more used by motor vehicles.	The Engines facility does not have unpaved areas on which vehicles travel or park.
§302.5	Open areas and vacant lots	Open areas and vacant lots	Owner/operator shall not allow visible emissions beyond the property line; stabilization and/or control measures required include soil crust, vegetative cover, application of dust suppressant, gravel, or alternative measures for open areas and vacant lots 0.1 acre or larger, with 500 sq. ft. or more that are disturbed.	The Engines facility does not have open areas or vacant lots of 0.1 acre or areas 500 sq. ft. or larger that have been disturbed. Some small landscaped or unpaved areas are stabilized by gravel or other pallatives, and are not non-traditional sources of fugitive dust.
§302.6	Unpaved parking lots	Unpaved parking lots at developments other than residential, used more than 35 days per year.	Owner/operator shall not allow visible emissions beyond the property line; stabilization and/or control measures required include pavement, application of dust suppressant, gravel, or suitable trackout control device.	Not Applicable. No unpaved areas at the Engines facility are used for parking of vehicles.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302.7	Unpaved roadways including alleys, in which there are 150 or more vehicle trips per day	Not Applicable.	Owner/operator shall not allow visible emissions to exceed 20% opacity, or silt loading above 0.33 oz./sq.ft.; control measures required include pavement, application of dust suppressant, gravel, or suitable trackout control device.	Not Applicable. No unpaved roadways or alleys at the Engines facility are used for vehicle travel.
§501 - 503	Open areas, unpaved roadways and parking areas	Non-Traditional Sources of Fugitive Dust	Visible Emission and Stabilization Observations. This section requires that EPA Method 203B observations shall be conducted to demonstrate compliance with opacity standards surface stabilization observations be conducted in accordance with methods in Appendix C of Regulation III.	If non-traditional sources of fugitive dust are created, the Engines facility will perform additional visible emission observations and adopt the stabilization observations as necessary to demonstrate that open areas, unpaved roadways and unpaved parking areas are compliant with the requirements of this rule. On-site records will be maintained of stabilization tests and/or observations, and will be retained for at least two years.
Rule 312 – Abrasive Blasting				
§301	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Limitations for Blasting. All abrasive blasting performed at the facility shall be in a confined enclosure with a forced air exhaust through a Department approved emission control device.	The facility conducts all Abrasive Blasting Operations in confined enclosures, which are vented through interior, dedicated filters or to a building exterior through department-approved emission control devices.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§303	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401428, 92401435, 92401436, 92401472	Requirements for Confined Blasting. Dry abrasive blasting in a confined enclosure with a forced air exhaust shall be conducted by implementing either of the following: a) Using a certified abrasive, or b) Venting to an ECS	The facility conducts all Abrasive Blasting Operations in confined enclosures, which are vented through interior, dedicated filters or to a building exterior through department-approved emission control devices
§304.1	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	O&M Plan Required for ECS. The facility will provide and maintain an O&M Plan for ECS and ECS monitoring devices that are used pursuant to this rule. The O&M Plans of each ECS are submitted to the Control Officer for approval. The facility will comply with all identified actions and schedules provided in each O&M Plan.	The facility has submitted, maintained, and complied with all identified actions and schedules provided in each Dust Collector O&M Plan, Maintenance Numbers: 92401428, 92401435, 92401436, 92401472.
§304.2	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Installing and Maintaining ECS and Monitoring Devices. The facility shall install and maintain in calibration, pressure monitors in good working order and in operation for all control devices that capture the exhaust for abrasive blasting units.	All abrasive blasting equipment at the facility maintained and operated as described in the Engines facility O&M Plan, and are compliant with the requirements of this section, including use of pressure differential monitors.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§305	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers92401028, 92401825, 92401472	Allowable Emissions/Opacity. The facility shall not discharge into the atmosphere from any abrasive blasting emissions unit any air contaminant for an observation period or periods aggregating more than three minutes in any sixty minute period an opacity equal to or greater than 20 percent. An indicated excess will be considered to have occurred if any cumulative period of 15-second increments totaling more than three minutes within any sixty minute period, based on Method 203B calculations, was in excess of the opacity standard.	The Engines facility will continue to comply with all applicable opacity monitoring provisions for the abrasive blasting ECSs. The facility will apply Method 9 visual observations with the calculations specified in Method 203B for time-based opacity limits.
§308.2	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Work Practices for Confined Blasting. At the end of the work shift, the facility shall clean up spillage, carry-out, and or trackout of any spent abrasive material with the potential to be transported during a wind event.	The Engines facility will continue to comply with the requirements for confined blasting work practices.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§501.1 and .2	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Monitoring and Records. The facility shall record daily and/or periodic records for blasting operations including description of the type of blasting, locations of units and ECS, days of week and normal hours of operations. The normal records include weekly pressure differential readings. The facility shall log all pressure differential readings, including the date when the reading was taken, identify each ECS and the name or initials of the person who took the reading.	The facility will continue to maintain the required records for abrasive blasting units and ECS, and conduct weekly inspections of the abrasive blasting equipment ECS emission points.
§501.3	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Monitoring and Records. The facility shall keep records onsite and maintain all of the specified records to be made available to the control officer upon request, including: The normal hours of operation, The type and amount of solid abrasive material consumed on a monthly basis. Include name of certified abrasive used, if applicable.	The facility will continue to maintain these records.
§502	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers92401028, 92401825, 92401472	Records Retention. Copies of reports, logs, and supporting documentation will be retained for at least 5 years for Title V sources	As a Title V source, the Engines facility will continue to maintain these records for a period of 5 years from the date of the record.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§505 and 506	Abrasive Blasting Operations and Control Devices	Units listed in Equipment List (other than Insignificant); Dust Collector Maintenance Numbers: 92401028, 92401825, 92401472	Opacity Observations. Emissions from confined blasting shall be observed at the densest point after the air contaminant leaves the enclosure or associated ECS. The opacity test method are to be applied from EPA test methods as adopted by reference in this section.	The Engines facility will continue to comply with the requirements for opacity observations, including use of EPA methods.
Rule 315– Spray Coating Operations (Thermal and Non-thermal)				
§301.1.a	Processes and operations that emit particulate matter to the atmosphere via non-thermal spray coating	Paint and Thermal Spray (Note – thermal spray scheduled to be removed.)	Controls Required. The facility shall operate all spray coating equipment inside an enclosure which has at least three sides a minimum of eight feet in height and contain the object(s) being coated.	The facility conducts all thermal and non-thermal spray coating operations in enclosures and/or spray booths in conformance with listed requirements.
§301.1.b	Processes and operations that emit particulate matter to the atmosphere via non-thermal spray coating	Paint and Thermal Spray (Note – thermal spray scheduled to be removed.)	Controls Required. For three-sided enclosures, the facility shall direct the spray in a horizontal or downward pointing manner so that overspray is directed at the walls or floor of the enclosure. For enclosures with three sides and a roof, or for complete enclosures, the facility shall direct the spray into the enclosure so that the overspray is directed away from any opening in the enclosure. No spraying shall be conducted within three feet of any open end and/or within two feet of the top of the enclosure.	The facility conducts all thermal and non-thermal spray coating operations in enclosures and/or spray booths in conformance with listed requirements.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§301.2	Processes and operations that emit particulate matter to the atmosphere via non-thermal spray coating	Paint and Thermal Spray (Note – thermal spray scheduled to be removed.)	Controls Required. Spray booths or enclosures with forced air exhaust must have a filtering system with an average overspray removal efficiency of at least 92% by weight, devices to capture particulate shall effectively remove 92% of the overspray.	The facility conducts all thermal and non-thermal spray coating operations in enclosures and/or spray booths in conformance with listed requirements.
Rule 320 – Odors and Gaseous Air Contaminants				
§300	Processes and operations that may emit air contaminants to the atmosphere	Stationary emission points from facility operations – as enumerated in the Equipment List	Standards. No person shall emit gaseous or odorous air contaminants from equipment, operations, or premises under his control in such quantities or concentrations as to cause air pollution. Odors are generally defined as smells, aromas, or stenches commonly recognized as offensive, obnoxious, or objectionable to a substantial part of the community.	The emission sources at the facility that may emit odors are controlled by wetted-media scrubbers. The O&M requirements for these controls are sufficient to avoid emissions in such quantities or concentrations as to cause air pollution.
§302	Processes and operations that may emit air contaminants to the atmosphere	Stationary emission points from facility operations – as enumerated in the Equipment List	Material Containment Required. Suitable work practices are to be in place for pollutant-containing materials including, but not limited to, solvents or other volatile compounds, paints, acids, alkalis, pesticides, fertilizer, and manure. These materials shall be stored, processed, used, and transported in such a manner and by such means that they will not unreasonably evaporate, leak, escape, or be otherwise discharged into the ambient air so as to cause or contribute to air pollution.	The Engines facility has implemented work practices to ensure material containment. These include but are not limited to keeping tanks and containers closed when not in use, proper disposal of containers and waste materials, and signage to advise employees of the material containment work practices.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§303	Processes and operations that may emit air contaminants to the atmosphere	Stationary emission points from facility operations that have stack or vent	Reasonable Stack Height Required. Where a stack, vent or other outlet is at such a level that air contaminants are discharged to adjoining property, installation of abatement equipment or alteration of the stack may be required to adequately dilute, reduce or eliminate the discharge to adjoining property.	The existing stacks and vents at the Engines facility, both with and without emission controls, have proper design and height to avoid discharge of air contaminants to adjoining property.
Rule 323 – Fuel-Burning Equipment at Industrial, Commercial, and Institutional Facilities				
§302	Fuel-burning equipment at Industrial Commercial Facilities	Gas-fired Boilers and Air Heaters (other than Insignificant) in Equipment List	Limitations – Opacity. The facility shall not discharge into the ambient air from any single source of emissions any air contaminant, other than combined water, in excess of 20% opacity.	The Engines facility complies with the opacity requirements applicable to boilers and air heaters.
§304.1.a	Gas-fired Boilers and Air Heaters	Two (2) 36MMBTU Boilers in Bldg 202	Emission Limitations Nitrogen Oxides. The facility shall establish initial optimal baseline concentrations for NO_X and CO utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. Tune the unit annually in accordance with good combustion practices or a manufacturer's procedure, if applicable.	The Engines facility conducts annual inspections and hand-held monitor testing on the boilers as required by the rule.
§304.1.b	Gas-fired Boilers and Air Heaters	Two (2) 36MMBTU Boilers in Bldg 202	Emission Limitations Nitrogen Oxides. The facility shall limit NO_X emissions to no more than 155 ppm heat input, calculated as nitrogen dioxide. During steady state operations, EPA Reference Method(s) 7 shall results shall be based upon the arithmetic mean of three, one-hour test runs.	The Engines facility may at its option conduct annual testing on the boilers to implement compliance with this section, in lieu of compliance with §304.1.a. The facility currently implements the program of boiler tuning and inspections as described in §304.1.a.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§306	Gas-fired Boilers and Air Heaters	All Gas-fired Boilers and Air Heaters	Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment. For operations which may exceed any of the applicable standards set forth in Section 300 of this rule, the facility may comply by installation and operating an ECS.	The affected boilers at the facility do not exceed any of the standards and limitations set forth in Section 300 therefore are not subject to ECS requirements in this section.
§501.1	Gas-fired Boilers and Air Heaters	Two (2) Superior Mohawk Boilers in Bldg 422 93010006, 9101007 and Two (2) GasTech Air Heaters outside Bldg 204 93021037 and 93021038	Monitoring and Recordkeeping. The facility shall record for each affected boiler the type of fuel used, amount of fuel used and the days and hours of operation.	The information required by this section will continue to be recorded and maintained by the facility.
§502	Gas-fired Boilers and Air Heaters	All Gas-fired Boilers and Air Heaters	Records Retention. Copies of reports, logs, and supporting documentation will be retained for at least 5 years.	The facility will continue to maintain these records.
Rule 324 – Fuel-Burning Equipment at Industrial, Commercial, and Institutional Facilities				

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§205	Emergency IC engines greater than 50 hp.	Applicable to eight (8) diesel-fired emergency generators (Maintenance #: 93202053, 93202017, 93202059, 93202077, 93202082, 93202081, 93202083, 93202084) and two (2) fire water pump engines (93801034 and 93801052).	To meet the rule definition of "Emergency Engine" these engines shall not operate for more than 500 hours per year (incl. emergency operation) including 100 hours per year for reliability-related activities (§104.5).	The facility will continue to monitor the annual operating hours for the emergency engines using a non-resettable hour meter. The facility will continue to maintain records for the annual hours of total operation, and reliability-related testing and maintenance operation.
§301	Emergency IC engines and other IC engines greater than 50 hp.	Applicable to eight (8) diesel-fired emergency generators (Maintenance #: 93202053, 93202017, 93202059, 93202077, 93202082, 93202081, 93202083, 93202084)	For new and existing engines, establishes requirement that fuel must not contain more than 0.05% sulfur by weight.	The Engines facility will continue to maintain on-site supplier documentation that liquid fuels meet the sulfur specification.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§302	Emergency IC engines and other IC engines greater than 50 hp.	Applicable to eight (8) diesel-fired emergency generators (Maintenance #: 93202053, 93202017, 93202059, 93202077, 93202082, 93202081, 93202083, 93202084)	Good Combustion Practices/Tuning Procedure: 1) Change oil and filter every 3 months or 300 hrs, whichever occurs last; 2) Clean inlet air filters every 3 months, after 300 hours, and replace after 1,000 hours, whichever occurs last; 3) Clean fuel filter once per year, or replace after 1,000 hours, whichever occurs last; 4) Perform other component adjustment once per year, or after 1,000 hours, whichever occurs last; 5) Replace spark plugs every year, or after 3,000 hours, whichever occurs last; 6)Change coolant every year, or after 3,000 hours, whichever occurs last; 7) Check exhaust system for leaks/restrictions every year, or after 3,000 hours, whichever occurs last;	The Engines facility will continue to perform the specified maintenance on the schedules contained in this section, and will prepare records of performance of these tasks in the form of completed Work Orders.
§303	Emergency IC engines and other IC engines greater than 50 hp.	Applicable to eight (8) diesel-fired emergency generators (Maintenance #: 93202053, 93202017, 93202059, 93202077, 93202082, 93202081, 93202083, 93202084)	No owner or operator shall discharge in the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.	The Engines facility will perform sufficient visible emission surveys to ensure the IC engines subject to this rule will comply with the 20% opacity standard.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§502	Emergency IC engines and other IC engines greater than 50 hp.	Applicable to diesel-fired emergency engines (Maintenance #: 93202053, 93202017, 93202059, 93202077, 93202082, 93202081, 93202083, 93202084) and other IC engines at the facility.	Establishes record keeping requirements to support compliance with the limitations and work practice standards for IC engines subject to this Rule.	The Engines facility will maintain on-site the required records, including visible emission surveys, maintenance records, monthly rolling 12-month total hours, fuel type and sulfur content, and explanation of the use of the engine, and if it is used for emergency.
Rule 330 – Volatile Organic Compounds				
§301	Processes and operations that may emit VOC contaminants to the atmosphere	Operations Involving Heat, with temperatures above 200F.	Limitations – Operations Involving Heat. The facility shall not discharge more than 15 pounds of VOC into the atmosphere in any one day from any machine, equipment, or device in which the VOC comes into contact with a flame or is evaporated at temps exceeding 200°F.	Not Applicable. The Engines facility does not have VOC operations involving heat; therefore this requirement is not applicable.
§302	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Limitations – Non-complying solvents. The facility shall not discharge more than 40 pounds of VOC into the atmosphere in any one day from any machine, equipment, or device for employing, apply, evaporating or drying any non-complying solvent.	The Engines facility complies with the requirement by only using solvents containing VOCs which are approved and listed in the current Permit. Usage of solvents/cleaners in individual units does not approach 40 pounds per day.
§305	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Equipment Cleanup. A person shall not use any liquid materials containing more than 10 percent VOC for the cleanup of equipment.	The Engines facility complies with the requirements to contain for cleanup liquids, preferring to use non-VOC cleaners.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§306	Processes and operations that may emit VOC contaminants to the atmosphere; BSVE System.	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	VOC Containment and Disposal. No person shall store, discard, or dispose of VOC or VOC-containing material in a way intended to cause or to allow the evaporation of VOC to the atmosphere. Reasonable measures shall be taken to prevent such evaporation, including: All materials from which VOC can evaporate shall be stored in closed containers; and such containers one gallon and larger shall be legibly labeled with their contents; and records of the disposal/recovery of such materials shall be kept.	The facility will continue to comply with these work practice standards. Specific operating procedures have been implemented facility-wide to ensure compliance.
§502	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Determination of Compliance. Determination of the organic solvent content and composition of a solvent or material shall be made as of the time that the solvent or material is in its final form for application or employment.	Determinations of VOC content and status as complying or non-complying are made at the Engines facility using the Material Safety Data Sheets of as-purchased materials. If a material is blended, thinned or otherwise prepared for application or employment, the VOC content of as-used material will be assessed by material balance calculations.
§503.1	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Recordkeeping and Reporting. Maintain a current list of coatings, adhesives, makeup solvents, and any other VOC containing materials; state the VOC content of each in pounds per gallon or grams per liter.	The Current List of VOC containing materials, monthly usage records, and waste disposal records will continue to be maintained by the facility HSE department.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§503.2	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Recordkeeping and Reporting. Maintain monthly records of the amount of each coating; adhesive; makeup solvent; solvent used for surface preparation, for cleanup, and for the removal of materials; and any other VOC-containing material used.	The monthly usage of each VOC-containing material is determined from facility purchase records, and will continue to be maintained by the facility HSE department.
§503.4	Processes and operations that may emit VOC contaminants to the atmosphere	Various dip cleaners, solvents/degreasers in other than dip cleaning, and miscellaneous product use	Recordkeeping and Reporting. Maintain records of the type, amount, and method of disposing of VOC-containing materials on each day of disposal.	The list of VOC containing materials, monthly usage records, and waste disposal records will continue to be maintained by the facility HSE department.
Rule 331 – Solvent Cleaning (Volatile Organic Compounds)				
§301.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Various dip cleaners and use of solvents/degreasers in other than dip cleaning units	Solvent Handling Requirements. All cleaning-solvent, including solvent soaked materials, shall be kept in closed leak-free containers that are opened only when adding or removing material. Rags used for wipe cleaning shall be stored in closed containers when not in use. Each container shall be clearly labeled with its contents.	The facility will continue to comply with these work practice standards. Specific operating procedures have been implemented facility-wide to ensure compliance.
§302.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Various dip cleaners and use of solvents/degreasers in other than dip cleaning units	Equipment Requirements. The facility shall provide a leak-free container (degreaser) for the solvents and the articles being cleaned. The VOC-containment portion shall be impervious to VOC-containing liquid and vapors. No surface of a cleaning vessel shall have an opening through which VOC can escape through the atmosphere, except as controlled by an ECS, or required by OSHA.	VOC-containing equipment at the facility complies with these requirements. Certain equipment may be vented to atmosphere due to safety/OSHA requirements. Equipment list contains information about the types of dip cleaners and other solvent cleaners.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§303.1a, b and c	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Various dip cleaners and use of solvents/degreasers in other than dip cleaning units	Operational Requirements for Cleaning Machines. a) Comfort fans shall not be used near cleaning machines; b) Do not remove any device designed to cover the solvent unless processing work in the cleaning machine or maintaining the machine; c) Drain cleaned parts for at least (15) fifteen seconds after cleaning or until dripping ceases, whichever is later.	The facility will continue to comply with these work practice standards. Specific operating procedures, signage and training have been implemented facility-wide to ensure compliance.
§303.1.d	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Cleaning units involving a circulating solvent stream, as enumerated on the Equipment List	Operational Requirements for Cleaning Machines. When cleaning-solvent spray system, use only a continuous, undivided stream (not a fine, atomized, or shower type spray). Pressure at the orifice shall not exceed (10) ten- psig and shall not cause liquid solvent to splash outside the solvent container.	VOC-containing equipment at the facility complies with these operational requirements. Equipment list contains information about the types of dip cleaners and other solvent cleaners.
§303.1.e	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks as enumerated on the Equipment List.	Operational Requirements for Cleaning Machines. The facility shall not cause agitation of a cleaning-solvent in a cleaning machine by sparging with air or other gas. Covers shall be placed over ultrasonic cleaners when the cleaning cycle exceeds (15) fifteen seconds.	VOC-containing equipment and operating practices at the facility comply with these requirements. Equipment list contains information about the types of dip cleaners and other solvent cleaners.
§303.1.f	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Cleaning Units as enumerated on the Equipment List.	Operational Requirements for Cleaning Machines. The facility shall not place porous or absorbent materials in or on a cleaning machine. This includes, but is not limited to, cloth, leather, wood, and rope. No object with a sealed wood handle, including a brush, is allowed.	The facility will continue to comply with these operational standards. Specific operating procedures, signage and training have been implemented facility-wide to ensure compliance.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§303.1.g	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Cleaning Units as enumerated on the Equipment List.	Operational Requirements for Cleaning Machines. The ventilation rate at the cleaning machine shall not exceed 65 cfm per square foot of evaporative surface (20 m3/min/m2).	The facility will continue to comply with this operational standard. Ventilation rates are periodically checked to ensure compliance
§303.1.h	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks with part-holding racks	Operational Requirements for Cleaning Machines. Limit the vertical speed of mechanical hoists moving parts in and out of the cleaning machine to a maximum of 2.2 inches per second and (11) eleven ft/min (3.3 m/min).	The facility will continue to comply with these operational standards. Specific operating procedures have been implemented to ensure compliance.
§303.1.i	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Cleaning Units as enumerated on the Equipment List.	Operational Requirements for Cleaning Machines. The facility shall prevent cross contamination of solvents regulated with solvents that are not so regulated. This includes those spray gun cleaning solvents that are regulated by another rule.	The facility uses dedicated cleaning units for specific individual cleaners. This practice prevents cross contamination.
§303.2	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Cleaning Units as enumerated on the Equipment List.	Signage Requirements for Cleaning Machines. When using cleaning-solvent, other than Low-VOC Cleaner, in any solvent cleaning machine (degreaser) or dip tank, the facility shall provide the appropriate signage requirements on the machine, or within 3.4 feet (1 meter) of the machine, a permanent, conspicuous label, or placard. Refer to the specific permit condition for applicable signage instructions.	The facility has posted the required signs in the close vicinity of cleaning equipment following the wording in MCAQD Rule 331.
§304.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Cleaning Units (non-vapor) as enumerated on the Equipment List.	Compliance for non-vapor cleaning and degreasing by solvent specifications. All cleaning solvents, except for Low-VOC Cleaners used at the facility shall be conforming solvents. A conforming solvent is one which has total vapor pressure at 68 deg F (20 deg C) not exceeding 1 mm of mercury.	VOC-containing cleaners and/or solvents used at the facility will continue to be either Low VOC Cleaner, or conforming solvents, as defined in Rule 331..

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§305.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks operated as batch mode.	Batch Cleaning Machines with a remote reservoir shall be equipped with the following: A sink-like work area or basin which is sloped sufficiently towards the drain. A single, unimpeded drain opening or cluster of openings served by a single drain, contained within a contiguous area not larger than 15.5 square inches, and such that the drained solvent is returned to the cleaning machine.	The batch cleaning units at the facility comply with these requirements.
§305.2	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks operated as batch mode.	Batch Cleaning Machines without a remote reservoir at the facility shall be equipped with the following: an internal drainage rack or other assembly, and an impervious cover which prevents cleaning-solvent vapors from escaping into the air/atmosphere. The freeboard height shall be no less than 6 inches (15.2 cm). The freeboard zone shall have a mark that locates the maximum allowable solvent level.	The batch cleaning units at the facility comply with these requirements.
§305.3	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks operated as batch mode.	Batch Cleaning Machines. If the facility uses use any heated, agitated or non-conforming solvent in its batch cleaning machines, then additional control requirements must be followed (e.g, freeboard ratio and cover design).	Not Applicable. The solvent cleaning units at the facility are not heated, so these additional requirements for heated batch cleaners do not apply.
§307.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Blasting/Misting Cleaning units using conforming solvent	Blasting or misting cleaning units with conforming solvent shall operate and equip the device(s) as follows: The device shall have internal drainage, a reservoir or sump, and a completely enclosed cleaning chamber, and the device shall be operated such that there is no perceptible leakage from the device.	Should blasting/misting solvent cleaning units be used at the facility the units will meet these requirements.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§308.1 and 308.2	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Wipe Cleaning, Small Cleaners, (< 1gallon capacity, or <1 square foot surface)	Work practice requirements in Sections 302 – 307 do not apply to wipe cleaning. Provisions in Sections 303 to 307 do not apply to small solvent cleaners, except that such cleaners shall be covered when work is not being processed.	At the Engines facility wipe cleaning is performed and small cleaners (e.g., some dip tanks) are in use. It is understood that certain work practice requirements may not apply to these operations.
§501	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks as enumerated on the Equipment List.	Recordkeeping and Reporting. The facility shall include in the semiannual report: The monthly summary of the solvent usage and legal disposal of solvents for the six month semiannual reporting period, A summary of any testing that may have been performed during the period.	The required information will continue to be included in the semi-annual monitoring reports and associated compliance certifications.
§501.1	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks as enumerated on the Equipment List.	Recordkeeping and Reporting. The facility shall maintain a current list of cleaning-solvents; state the VOC-content of each in pounds VOC per gallon of material or grams per liter of material, and documentation such as an MSDS for VOC vapor pressure.	The Current List of VOC containing materials and supporting documentation will continue to be maintained by the facility HSE department.
§501.2a	Operations that use VOC-containing solvents to remove impurities from exterior or interior surfaces	Solvent Dip Cleaning Tanks and non-dip cleaning tanks as enumerated on the Equipment List.	Recordkeeping and Reporting. The facility shall record the amount of cleaning-solvent used at the end of each month for the previous month. Show the type and amount of each make-up and all other cleaning-solvent.	The monthly usage of each VOC-containing material is determined from facility purchase records, and will continue to be maintained by the facility HSE department.
Rule 348 – Aerospace Manufacturing and Rework Operations				

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§301	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths or work stations that apply coatings, adhesives, maskants, etc.	Limitation – VOC Emissions. The facility shall not apply any surface coating including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits in Tables 1a and 1b (Tables 27.1 and 27.2 of the existing Engines Permit).	VOC-containing coating and other materials used at the Engines facility conform to the VOC content limits in this section.
§302 - 303	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths or work stations that apply coatings, adhesives, maskants, etc.	As an alternative to the VOC-containing material specifications in §301, implement an ECS having at minimum 81 percent capture and control efficiency for VOC. Requirements for O&M Plans for the ECS also provided in §303.	Alternative not used at Engines Facility, VOC containing materials used are compliant with limits in §301. Therefore, none of the aerospace operations applying coatings or using VOC-containing materials are required to vent to a control device.
§304	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc.	Application equipment for any primer or topcoat shall be one of specified types in Section 304, intended to reduce the emission of VOC.	The Engines facility aerospace operations will continue to utilize only approved primer and topcoat application processes listed in this section.
§305	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Solvent cleaning units and/or part cleaning operations for aerospace components	Solvent Cleaning. Solvents used in hand-wipe cleaning operations shall utilize an aqueous cleaning solvent, or have a VOC composite vapor pressure less than or equal to 45 millimeters of mercury (mm Hg) at 20°F. Flush cleaning solvents must be emptied into an enclosed container or collection system that is kept closed when not in use or captured with wipers.	Solvents used at the facility for aerospace component cleaning will continue to comply with the requirements of this section.
§306	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Spray Gun Cleaning for aerospace coating operations.	Spray Gun Cleaning. Specifies operational and work practices for cleaning of spray guns used to apply aerospace component coatings.	The Engines facility will continue to use one or more of the methods specified to contain cleaning solvent and promptly repair leaks in gun cleaning systems.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§307	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc.	VOC Containment and Disposal. All fresh and used VOC containing material shall be stored in closed, leak free, legibly labeled containers when not in use. In addition, the facility must implement handling and transfer procedures to minimize spills during filling and transferring the cleaning solvent.	The facility will continue to comply with the operating requirements of this section.
§308	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc.	Exemptions. Specifies small-quantity coating uses, types of applications and application equipment, and solvent cleaning operations that are exempt from VOC material limitations in Tables 1a and 1b. Identifies "Small Sources" as an entire facility with VOC emissions from all operations as less than 15 pounds per day.	To the extent that Engines performs the specified coating and cleaning operations identified as exempt, the facility may elect to use materials that do no comply with the VOC limits in Tables 1a and 1b. The Engines facility does not qualify for the "Small Sources" exemption.
§501	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc. Solvent cleaning for aerospace components.	Records specified in Sections 501.1 (Current L:ist for coatings), 501.2 (Current List for hand-wipe solvents) and 501.3 (enclosed spray gun cleaner inspections) will be prepared retained for five years from date of the record, and made available to the Control Officer upon request.	The Engines facility will continue to collect and maintain the records specified in this section.
§501.1	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc.	Recordkeeping and Reporting - Coatings. Maintain a current list of all coatings in use, VOC content, and records of monthly usage of such materials.	The Engines facility will continue to collect and maintain these records, and update from purchasing records on a monthly basis.

Section Citation	Affected Source(s)	Emission Points or Units	Requirement(s)	Comments
§501.2	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Solvent cleaning units and/or part cleaning operations for aerospace components	Recordkeeping and Reporting – Cleaning Solvents. Maintain a current list of all aqueous and semi-aqueous hand-wipe cleaning solvents with either their vapor pressures or VOC composite vapor pressures, and a current list of all cleaning solvents with a vapor pressure greater than 45 mm Hg. Maintain records of the monthly usage of such cleaning solvents.	The Engines facility will continue to collect and maintain these records, and update from purchasing records on a monthly basis.
§501.3	Manufacture or rework of aerospace vehicles, processes and operations that may emit VOC	Booths and/or work stations that apply aerospace coatings, adhesives, maskants, etc. Solvent cleaning for aerospace components.	Specifies test methods for compliance determinations related to VOC-content of materials. Allows use of manufacturers' supplied data to determine the water content for aqueous and semi-aqueous cleaning solvents. Also allows use of manufacturers' supplied data or standard engineering reference texts or other equivalent methods to determine the vapor pressure or VOC composite vapor pressure for blended hand-wipe cleaning solvents.	The Engines facility obtains the required VOC and water content information from manufacturers' data sheets, MSDS' and similar documentation. These documents are retained on site.

4.6.1 Rule 360 – New Source Performance Standards (NSPS)

This rule adopts by reference the federal requirements for design and performance criteria for specified new or modified emission sources. The federal rules contained in 40 CFR Part 60 are adopted by reference. This rule is therefore applicable to the affected sources in the source categories described in subparts of 40 CFR Part 60 (refer to Table 4-1). Specifically, this rule is only directly applicable to the storage tanks at the Engines facility that are subject to Subpart Kb in 40 CFR Part 60.

4.6.2 Rule 370 – Federal Hazardous Air Pollutant Program

This rule established the emission standards for federally-listed hazardous air pollutants (HAPs). This county rule adopts the federal standards as specified in 40 CFR Part 61 and Part 63. This rule is applicable to only a small number of sources at the Engines facility. As discussed in section 4.4, federal NESHAP rules in Part 63 that apply to the facility pertain to hard chromium plating operations (Subpart N), stationary reciprocating emergency engines (Subpart ZZZZ), and HAP-metal plating and polishing operations (Subpart XXXXXX).

It should be noted that 40 CFR Part 61, Subpart M (National Emission Standard for Asbestos) is technically applicable to the Engines facilities. Those requirements would be evaluated if and when the facility plans a renovation or demolition of a building with materials of construction, including process insulating materials, which are deemed to be asbestos-containing material (ACM).

4.6.3 Rule 372 – Hazardous Air Pollutants (HAPS) Program

The Maricopa County program for control of hazardous air pollutant (HAP) emissions is contained in Rule 372, adopted on June 6, 2007. The MCAQD program is patterned after the ADEQ state HAP rule (ACC R18-2 - Article 17), and covers certain major sources of HAP in SIC code categories that are not covered by federal NESHAP. However, the Engines facility is not subject to this rule. First, it is a minor source of HAP, with individual HAP emissions below 10 tons per year, and combined HAP emissions less than 25 tons per year. Second, the SIC code for the facility (SIC 3724) is not one of the regulated SIC code categories identified in Section 102.1.a.

4.7 MARICOPA COUNTY RULES IN STATE IMPLEMENTATION PLAN (SIP)

In accordance with the requirements of the Clean Air Act, the MCAQD has prepared rules that are included in a State Implementation Plan (SIP) to address the specific methods and regulations that will allow the area to come into compliance with the National Ambient Air Quality Standards (NAAQS). In general, the rules contained in the SIP are equivalent to, or less stringent than, rules contained in the current MCAQD Air Pollution Control Regulations. In practice, operations to be conducted at the Engines facility will comply with applicable rules in MCAQD Regulations I, II and III, and thus will be also deemed to be in compliance with the SIP. Furthermore, the applicable SIP rules are cited in the current Title V permit, and would also be cited in the renewal permit.

4.8 SUPPLEMENTAL REGULATORY ANALYSIS FOR BSVE

This section presents a supplemental review of the applicable MCAQD Air Pollution Control Regulation requirements that govern the operation of the existing BSVE system. This section provides a summary of applicable regulations and compliance methodologies. The primary compliance obligations that pertain to BSVE operations, as contained in General Conditions in the existing Operating Permit are:

- Posting the Air Quality Permit as required at the BSVE location.
- Completing and submitting annual emission inventories that include BSVE air emissions; and,
- Submitting annual certification and compliance reports to MCAQD and maintaining records as identified in the permit.

The BSVE system will continue to be operated in compliance with applicable requirements identified in permit, and underlying rules. The facility will continue to comply with applicable monitoring, recordkeeping, and reporting requirements in the current operating permit. Table 4-4 lists the SIP rules and corresponding MCQAD rules that provide applicable requirements for the BSVE. These rules are covered in the General and Specific Conditions contained in the current Operating Permit. The remainder of this section provides a more detailed discussion of the potentially-applicable and applicable rules, and resulting compliance obligations.

Table 4-4. Applicable Maricopa County / State Implementation Plan (SIP) Rules- BSVE

SIP Rule Citation (MCAQD Rule)	Description	Discussion and Permit Reference
General Conditions		
SIP Rule 3 (Rule 100)	Air Pollution Prohibited	Conditions related to this regulation already included in Title V Permit V97-008 condition 1.
SIP Rule 26 (Rule 200)	Modeling	Conditions related to this regulation already included in Title V Permit V97-008 condition 12.
SIP Rule 27 (Rule 270)	Testing Required	Conditions related to this regulation already included in Title V Permit V97-008 condition 13.
SIP Rule 28 (Rule 280)	Fees	Conditions related to this regulation already included in Title V Permit V97-008 condition 11.
SIP Rule 40 (Rule 100) A C D	Recordkeeping Records Required Retention of Records Right of Inspection of Records	Conditions related to this regulation already included in Title V Permit V97-008 conditions 15 and 16.
SIP Rule 40 (Rule 210, Rule 100)	Reporting Annual Emissions Inventory Report Data Reporting Deviation Reporting	Conditions related to this regulation already included in Title V Permit V97-008 condition 16.
SIP Rule 41 (Rule 200)	Monitoring Required	Conditions related to this regulation already included in Title V Permit V97-008 condition 13.
SIP Rule 42 (Rule 270)	Monitoring, Testing and Sampling Facilities	Conditions related to this regulation already included in Title V Permit V97-008 condition 13.
SIP Rule 43 (Rule 100, Rule 210)	Right to Entry and Inspection of Premises	Conditions related to this regulation already included in Title V Permit V97-008 condition 17.
SIP Rule 80	Severability	Conditions related to this regulation already included in Title V Permit V97-008 condition 14.
SIP Rule 100 (Rule 100)	Emissions Statements Required	Conditions related to this regulation already included in Title V Permit V97-008 condition 16.

SIP Rule Citation (MCAQD Rule)	Description	Discussion and Permit Reference
SIP Rule 140 (Rule 140)	Excess Emissions	Conditions related to this regulation already included in Title V Permit V97-008 conditions 10 and 16.
SIP Rule 210 (Rule 210)	Compliance / RACT	Not applicable to BSVE. Not a major source.
SIP Rule 310 (Rule 310)	Dust Control Permit / Plan	Conditions related to this regulation already included in Title V Permit V97-008 condition 14.
SIP Rule 314 (Rule 314)	Burn Permits	Not applicable to BSVE.
SIP Rule 600 (Rule 600)	Emergency Episodes	Conditions related to this regulation already included in Title V Permit V97-008 condition 8.
Specific Conditions		
SIP Rule 27A & B (Rule 270)	General Performance Test Requirements	Conditions related to this regulation already included in Title V Permit V97-008 condition 22.
SIP Rule 30 (Rule 300)	Facility Wide Allowable Emission Limits – Opacity Requirements	Conditions related to this regulation already included in Title V Permit V97-008 condition 18.
SIP Rule 31H (Rule 311)	Facility Wide Allowable Emission Limits - Particulate Matter Limits for Fuel Burning Equipment	Not applicable – applies to air heaters and boilers, not BSVE.
SIP Rule 32 (Rule 320, 210) A (Rule 320) C (Rule 320) D (Rule 320)	Facility Operational Limitations and Requirements Gaseous and Odorous Contaminants VOC Containment and Disposal Installation of Abatement Equipment	Conditions related to this regulation already included in Title V Permit V97-008 condition 19.
SIP Rule 32 (Rule 320, 210)	Facility Monitoring and Recordkeeping Requirements	Conditions related to this regulation already included in Title V Permit V97-008 condition 20.
SIP Rule 42 (Rule 270)	Testing Facilities Required	Conditions related to this regulation already included in Title V Permit V97-008 condition 22.

4.8.1 Rule 240 – Permits for New Major Sources and Major Modifications to Existing Major Sources

There is no emission increase associated with the requested permit renewal. Therefore, the net emission increases for each regulated pollutant is less than the significant threshold established in MCAPCR Rule 100, Section 200.99 and the requirements of Rule 240 do not apply.

4.8.2 Rule 241 – Minor New Source Review (NSR)

Rule 241 (formerly "Permits for New Sources and Modifications to Existing Sources") was extensively revised as of February 3, 2016. It now provides control technology requirements and ambient air quality compliance assessment for new Title V or Non-Title V sources and minor modifications to existing Title V or Non-Title V sources of air pollution. This revised rule is applicable to new and existing sources other than new major sources and major modifications to permitted sources which would be subject to PSD permitting under Rule 240.

Currently, the requirements of revised Rule 241are not be triggered for the BSVE system, as no physical change is planned that is not already contained in the facility Operating Permit. Therefore, Rule 241 does not apply to the BSVE system at this time. In the event that a physical change is planned for existing BSVE sources at the Engines facility, or if new sources are to be constructed subject to this rule, then the emissions rate changes will be evaluated to assess which requirements of Rule 241 may be applicable.

4.8.3 Rule 270 – Performance Tests

Rule 270, Section 400 requires a source test within 60 days after a source has achieved its maximum capacity to operate on a sustained basis, but no longer than 180 days after initial start up. The BSVE project is subject to these requirements.

4.8.4 Rule 320 – Odors and Gaseous Air Contaminants

Rule 320, Section 300 requires the prevention of emission of gaseous or odorous air contaminants. Section 303 may require abatement equipment on stacks or other outlets to prevent discharge of air contaminants to adjoining property.

4.8.5 Rule 330 – Volatile Organic Compounds

Rule 330 requires storage of solvents and other volatile organic compounds in a manner that will reduce evaporation or leakage. The containers of free product recovered

during this project are stored to meet the requirements of this rule. This rule applies to the BSVE system for VOC containment and disposal (Section 306).

Figures

Appendix A

Emission Calculations

Appendix B

Honeywell Engines Safety Data Sheets (CD in Back Cover Pocket)

Appendix C

Fuel Storage Tanks, Tanks 4.09d Output Files

Appendix D

MCAQD Title V Air Quality Permit Number V97-008

Appendix E

Emission Calculations for BSVE