

Ventana Medical Systems, Inc.

Air Quality Operating Permit 6075

Technical Support Document (TSD)

I. General Comments:

A. Company Information

1. Source Name: Ventana Medical Systems, Inc.
2. Source Address: 1910 E. Innovation Park Drive, Oro Valley, AZ 85755

B. Background

The manufacturing facility operates under the following industrial classification:

- In-Vitro Diagnostic Substance Manufacturing/Biotechnology Research and Development
SIC Codes: 2835, 8731; NAICS Codes: 325413, 541711

The facility manufactures medical diagnostic systems.

Air pollution sources at the facility include 4 natural gas fired emergency generators which are subject to federal standards.

Previously, the facility operated under an ATO and general permit for NSPS generators. This is the first 5-year, individual air quality permit issued to Ventana Medical Systems to include the facility wide operations and requirements for the older generators now subject to 40 CFR Part 63, Subpart ZZZZ.

The facility is a true minor stationary source for all criteria pollutants and area source of HAP.

Table 1

Summary of permit actions since the previous permit was issued

Date	Permit Action
February 12, 2014	This revision application results in a significant permit revision since the replacement of one of the emergency generators triggers the generators to become subject to RICE NESHAP, Subpart ZZZZ. The facility is now required to hold a Class II permit pursuant to PCC 17.12.140.B.2.b.

C. Attainment Classification

Ventana Medical Systems is located in a region that is designated attainment for all criteria pollutants.

II. Source Description

A. Process Description

The air pollutant emitting equipment and operations at Ventana Medical Systems consists of the following:

- Four natural gas fired emergency generators

B. Operating Capacity and Schedule

The operating schedule at the facility is not limited and the facility can operate 7 days/week, 24 hours/day, 365 days/year.

The operating capacity of the affected generator/engines is limited by the permit to 100 hours each for maintenance and readiness testing, including non-emergency use in accordance with the applicable federal standards.

C. Air Pollution Control Equipment

N/A

III. Emission Estimates

Table 2

Potential to Emit (Tons/yr)

Emission Sources	PM₁₀	PM_{2.5}	NO_x	SO₂	CO	VOC	HAP Total	HAP Single
Emergency Generators ¹	0.02	0.02	1.9	0.00	1.7	0.05	0.04	0.02
Facility Wide Total	0.02	0.02	1.9	0.00	1.7	0.05	0.04	0.02

¹ PTE for the emergency generators/engines is calculated on a 100 hour/year basis. Other sources are based on annual usage or operation 8760 hours/year. See Attachment 1 for detailed emission factors and emission rate estimates.

IV. Applicable Requirements

40 CFR, Part 60 Standards of Performance for New Stationary Sources

Appendix A	Test Methods
Subpart A	General Provisions
Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants for Source Categories

Subpart A	General Provisions
Subpart ZZZZ	NESHAP for Reciprocating Internal Combustion Engines 'RICE'

Pima County Code Title 17, Chapter 17.12 – Permits and Permit Revisions

Article I – General Provisions

17.12.010	Statutory Authority
17.12.020	Planning, Constructing, or Operating Without a Permit
17.12.040	Reporting requirements
17.12.045	Test methods and procedures
17.12.050	Performance tests
17.12.080	Permit Display or Posting

Article II – Individual Source Permits

17.12.165	Permit application processing procedures for Class II and Class III permits
17.12.185	Permit contents for Class II and Class III permits
17.12.235	Facility Changes that require a permit revision
17.12.240	Procedures for certain changes that do not require a permit revision Class II or Class III
17.12.255	Minor Permit Revision
17.12.260	Significant Permit Revision
17.12.270	Permit Reopenings – Revocation and reissuance – Termination
17.12.350	Material permit condition

Article VI – Individual Source Permits

17.12.520	Fees related to Class II and Class III permits
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Pima County Code Title 17, Chapter 17.16 – Emission Limiting Standards

Article I – General Provisions

17.16.010	Local rules and standards; Applicability of more than one standard
17.16.020	Noncompliance with applicable standards
17.16.030	Odor limiting standards

Article II – Visible Emission Standards

17.16.040	Standards and applicability (includes NESHAP)
17.16.050	Visibility limiting standard

Article IV – New and Existing Stationary Source Performance Standards

17.16.130	Applicability
17.16.340	Standards of performance for stationary rotating machinery
17.16.400	Organic Solvents and other organic materials
17.16.430	Standards of performance for unclassified sources

Pima County Code Title 17, Chapter 17.20 – Emissions Source Testing and Monitoring

17.20.010	Source sampling, monitoring and testing
17.20.040	Concealment of emissions

Pima County Code Title 17, Chapter 17.24 – Emissions Source Recordkeeping and Reporting

17.24.020

Recordkeeping for compliance determination

V. Permit Changes and Applicability Determinations.

A. Permit and Permit Summary:

The facility previously operated under a PDEQ general permit for non-NSPS emergency generators. The engines are now subject to 40 CFR Part 63, Subpart ZZZZ, and an individual permit is required. The generator engine provisions have been included in Sections 3 and 4.

B. Applicability:

Section 1 of the permit provides a reference for the applicability of affected sources, PCC and federal rules to the facility and operations, and to help organize the permit sections.

C. Facility Wide Operations:

Section 2 incorporates the applicable facility wide provisions to include the following: general provisions, materials handling operations, odor limiting standard, and visibility limiting standards.

This section does not include periodic monthly monitoring of the materials handling operations, odors, and opacity as good modern practices at the facility prevent emission in excess of the facility wide standards. This section contains general provisions including requirements for recordkeeping and facility changes.

VI. Periodic Monitoring.

This is a Class II permit and does not include a semiannual summary report of required monitoring or annual compliance certifications. The permit requires the facility to maintain the required monitoring records on site or as requested by the Control Officer in order to demonstrate compliance with the standards.

VII. Insignificant Activities.

The insignificant activities per PCC are listed in a table in Attachment 3 of the permit.

VIII. Impact to Ambient Air Quality

Not a major source so no impact studies are required.

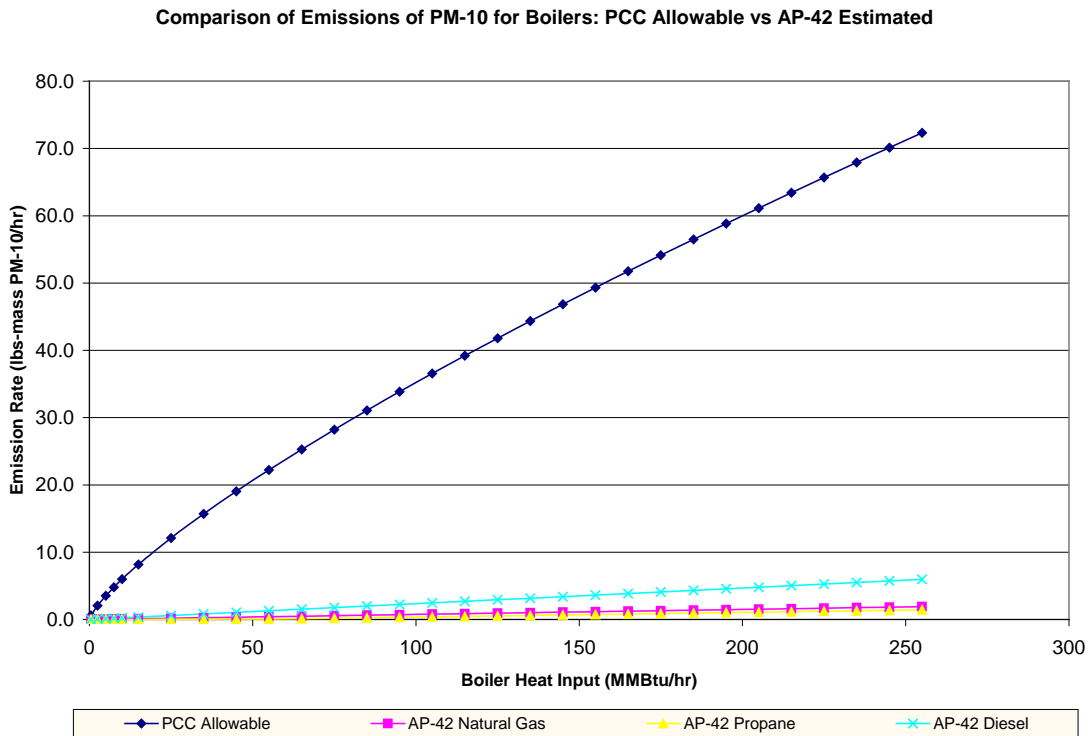
IX. Control Technology Determination

No control technologies needed to be determined; the source is not subject to RACT, BACT or LAER.

X. Exclusion of PCC Particulate Matter Discharge Rate Standards

The applicable PCC rules for the maximum particulate discharge rates are not normally included for Class II area source permits as explained below.

- For particulate matter sources, the calculated maximum particulate matter discharge rate, as provided in Title 17, yields maximum rates that far exceed the emissions expected from most typical area sources. For example a 200 ton/hour process source, which is typical for an average construction aggregate screening operation, would be limited to a maximum discharge rate of 40.4 lbs/hour or 177 tons/year. This limit far exceeds estimated emissions from typical sources and the source is far more likely to exceed opacity and visibility limiting standards well before reaching this limit.
- With regard to fuel burning equipment, PCC 17.16.165.C limits the emissions of particulate matter from commercial and industrial fossil-fuel fired equipment (including but not limited to boilers). This limit is not normally included in permits because allowable emissions are consistently over an entire order of magnitude higher than EPA AP-42 estimated potential emissions. The chart below, illustrates the point.



Comparative Chart of Allowable Particulate Emissions Under Pima County Code, Title 17, and Estimated Potential Emissions based on EPA AP-42 Estimates for External Combustion Sources. Allowable emissions are consistently over ten times estimated potential emissions. Therefore, it is not necessary to include the standard in the permit explicitly, but by reference in this TSD.

Attachment 1
PTE

Potential to Emit Calculations for Fuel Fired Engines

The following tables can be used to calculate emissions in tons per year from industrial and commercial generators. The tables are set up by taking the maximum capacity listed in column (a), multiplying it by the emission factor for each pollutant of the equipment in column (b), and finally multiplying it by the conversion factor listed in column (c). The emission factors provided are taken from AP-42 chapter three, sections three and four. If the permittee can supply emission data from the manufacturer or certified lab tested data with lower emission factors, then those emission factors can be used in place of the AP-42 factors. Simply cross out the emission factor provided and write in the new emission factor. In order to use the manufacturer's emission data or certified lab test data, the permittee must submit copies of the manufacturer's emission data or certified lab test data along with the specifications for each generator. **An individual table needs to be completed for each generator. Please make additional copies of this form if necessary.**

Gasoline Fired Generators (AP-42 Table 3.3-1)

Pollutants	(a) Maximum Capacity	(b) Emission Factor	(c) Conversion Factor	(d) Emissions (axbxc)	Reviewer	Date
	(horsepower)	(lb/hp-hr)	$\frac{\text{(tons/yr)}}{\text{(lbs/hr)}}$	(tons/yr)		
NOx		0.011	4.38	0.00		
CO	0	0.00696	4.38	0.00		
SOx	0	0.000591	4.38	0.00		
VOC ¹	0	0.021591	4.38	0.00		
PM-10	0	0.000721	4.38	0.00		

1.) TOC used as a surrogate

Less than 600 horsepower - Diesel Fired Generators (AP-42 Table 3.3-1, 3.3-2)

Pollutants	(a) Maximum Capacity	(b) Emission Factor	(c) Conversion Factor	(e) Emissions (axbxc)	Reviewer	Date
	(horsepower)	(lb/hp-hr)	$\frac{\text{(tons/yr)}}{\text{(lbs/hr)}}$	(tons/yr)		
NOx	0	0.031	4.38	0.00		
CO	0	0.00668	4.38	0.00		
SOx	0	0.00205	4.38	0.00		
VOC ¹	0	0.0025	4.38	0.00		
PM-10	0	0.0022	4.38	0.00		
HAPS ²	0	0.00004459	4.38	0.00		

1.) TOC used as a surrogate

2.) Conversion factor .007 used to convert from lb/MMBtu to lb/hp-hr

Greater than 600 horsepower - Diesel Fired Generators (AP-42 Table 3.4-1, 3.4-2, 3.4-3, 3.4-4)

Pollutants	(a) Maximum Capacity	(b) Emission Factor	(c) Conversion Factor	(f) Emissions (axbxc)	Reviewer	Date
	(horsepower)	(lb/hp-hr)	$\frac{(\text{tons/yr})}{(\text{lbs/hr})}$	(tons/yr)		
NOx		0.024	4.38	0.00		
CO	0	0.0055	4.38	0.00		
SOx	0	0.007281	4.38	0.00		
VOC ¹	0	0.00064155	4.38	0.00		
PM-10	0	0.0004011	4.38	0.00		
HAPS ²	0	0.00001043	4.38	0.00		

1.) TOC used as a surrogate

2.) Conversion factor .007 used to convert from lb/MMBtu to lb/hp-hr

Natural Gas - Fired Generator (AP-42 Table 3.2-1)

Pollutants	(a) Maximum Capacity	(b)	(c)	(g)	Reviewer	Date
	horsepower	(lb/MMBtu)	$\frac{(\text{tons/yr})}{(\text{lbs/hr})}$ $4.38 \times 0.007 \text{MM Btu/hp-hr}$	(tons/yr) adjusted to 100 operating hours		
NOx	1332	4.08	0.03066	1.90		
CO	1332	3.72	0.03066	1.73		
SOx	1332	0.00058	0.03066	0.02		
VOC	1332	0.12	0.03066	0.06		
PM-10	1332	0.04831	0.03066	0.02		
HAPS	1332	0.07957	0.03066	0.04	imi	4/2/2015
HAP Single Formaldehyde	1332	0.0528	0.03066	0.02		

Total Emissions from all generators

Pollutants	(d) Emissions from Gasoline Fired Generators	(e) Emissions from Less than 600 Horsepower Diesel Fired Generators	(f) Emissions from Greater than 600 Horsepower Diesel Fired Generators	(g) Natural Gas Dual Fired Generator	Total Emissions (d+e+f+g)	Reviewer	Date
	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)		
NOx	0.00	0.00	0.00	1.90	1.90		
CO	0.00	0.00	0.00	1.73	1.73		
SOx	0.00	0.00	0.00	0.02	0.02		
VOC	0.00	0.00	0.00	0.06	0.06		
PM-10	0.00	0.00	0.00	0.02	0.02		
HAPS	0.00	0.00	0.00	0.04	0.04		