

Town of Sahuarita – Public Works
Sahuarita Water Reclamation Facility (SWRF)
Air Quality Operating Permit 3303

Technical Support Document

I. General Comments:

A. Company Information

1. Town of Sahuarita – Public Works, Sahuarita Water Reclamation Facility (SWRF)
2. Source Address: 14311 S. Rancho Sahuarita, AZ 85629

B. Background

The facility operates under the following industrial classification:

- Sewerage Systems, SIC code: 4952 (NAICS: Sewage Treatment Systems 221320)

The existing facility, emergency generators, and odor control units are subject to regulations of the Pima County Code (PCC), Title 17. The generators and facility are subject to Standards of Performance for Stationary Rotating Machinery and Unclassified Sources in accordance with PCC 17.16.340 and PCC 17.16.430.

One of the diesel emergency generators is subject to federal New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (CI – ICE), while the other unit is subject to federal National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines (RICE).

The wastewater treatment facility also operates two odor control units covered by the permit to control the generation of odors and gaseous emissions of Hydrogen Sulfide (H₂S). Hydrogen Sulfide emissions are not included on the list of Hazardous Air Pollutants (HAPS), but are subject to regulations of the PCC.

The facility is a Class II true minor stationary source for all criteria pollutants and an area source of hazardous air pollutants (HAPs). Potential emissions resulting from the operation of the emergency generators and odor control systems includes NO_x, SO₂, VOC, PM₁₀, PM_{2.5} and HAPs.

Currently there are no facility-wide Potential to Emit (PTE) estimates of VOC or HAP from the wastewater treatment processes at the facility other than those from the limited operation of the emergency generators, which are limited to 100 hours per year for maintenance and readiness testing and non-emergency use as defined in the Code of Federal Regulations (CFR), and the operation of the odor control systems.

The Control Officer may request the Permittee to provide an estimate of the facility-wide VOC and HAP emissions from the wastewater treatment processes should there be a need to review them for purposes of estimating VOC and HAP emissions.

Table 1: Summary of Permit Actions since the previous permit was issued

Date Received	Permit Action
March 9, 2009	1755-2P Significant Revision to include affected NSPS Generators.
December 31, 2013	1755-3P & 6P Significant revision to include provisions for NESHAP and remove an existing generator. The renewal included an updated application.

C. Attainment Classification

The SWRF facility 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 Sahuarita Water Reclamation Facility (SWRF) consists of the following:

- Two emergency generators
- Two facility odor control systems

B. Operating Capacity and Schedule

The operating schedule at the facility is not limited and the facility can operate 7 days/week, 24hours a day, 365 days a 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 by the applicable federal standards.

C. Air Pollution Control Equipment

N/A

III. Emission Estimates

Emissions are estimated based on 100 hour per year limited operation of the emergency generators for readiness and maintenance testing and non-emergency use as defined in the Code of Federal Regulations (CFR), and continuous operation of the odor control systems and a 99.5% removal efficiency for the units.

Facility-Wide Potential Emissions (tons/yr)						
PM	PM ₁₀	NO _x	CO	SO _x	VOC	TOTAL HAPS
0.10	0.10	2.20	0.94	0.06	0.18	0.00

IV. Applicable Requirements

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

Subpart A	General Provisions
Subpart IIII	NSPS for Stationary Compression Ignition Internal Combustion Engines
Appendix A	Test Methods

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 III – Emissions from Existing and New Nonpoint Sources

17.16.060	Fugitive dust producing activities
17.16.070	Fugitive dust emissions standards for motor vehicle operation
17.16.080	Vacant lots and open spaces
17.16.090	Roads and streets
17.16.100	Particulate materials
17.16.110	Storage piles

Article IV – New and Existing Stationary Source Performance Standards

17.16.130	Applicability
17.16.340	Standards of performance for stationary rotating machinery
17.16.430	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 – Emission Source Recordkeeping and Reporting

17.24.020	Recordkeeping for compliance determination
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V. Permit Changes and Applicability Determinations.

A. Permit and Permit Summary:

The facility previously operated under an ATO and general permit for the emergency generators. One Engine is now subject to 40 CFR Part 63, Subpart ZZZZ and one subject to 40 CFR Part 60, Subpart IIII and an individual permit is required. The generator engine provisions have been included in Sections 3 and 4. In addition, the facility has two odor control systems to control the emissions of hydrogen sulfide and odor. The facility is subject to the provisions in PCC 17.16.430. The PCC standards for unclassified sources have been incorporated into the Facility Wide Operations in Section 2.

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 standards, odor control systems, opacity limits, visibility limiting standards, and fugitive dust provisions.

This section also includes periodic monthly monitoring of materials handling operations, odors and odor control systems, and for fugitive dust at the facility as well as the general requirements for recordkeeping and facility changes.

VI. Periodic Monitoring.

This is a class III permit and does not include a semiannual summary report of required monitoring or annual compliance certifications. In order to demonstrate compliance with the standards, the permit requires the facility to maintain the required monitoring records on site and to be provided as requested by the control officer.

VII. Insignificant Activities.

The insignificant activities per PCC and additional equipment identified in the application are listed in a table in attachment 3.

VIII. Impacts to Ambient Air Quality

The facility is not a major source so no impact studies are required.

IX. Control Technology Determination

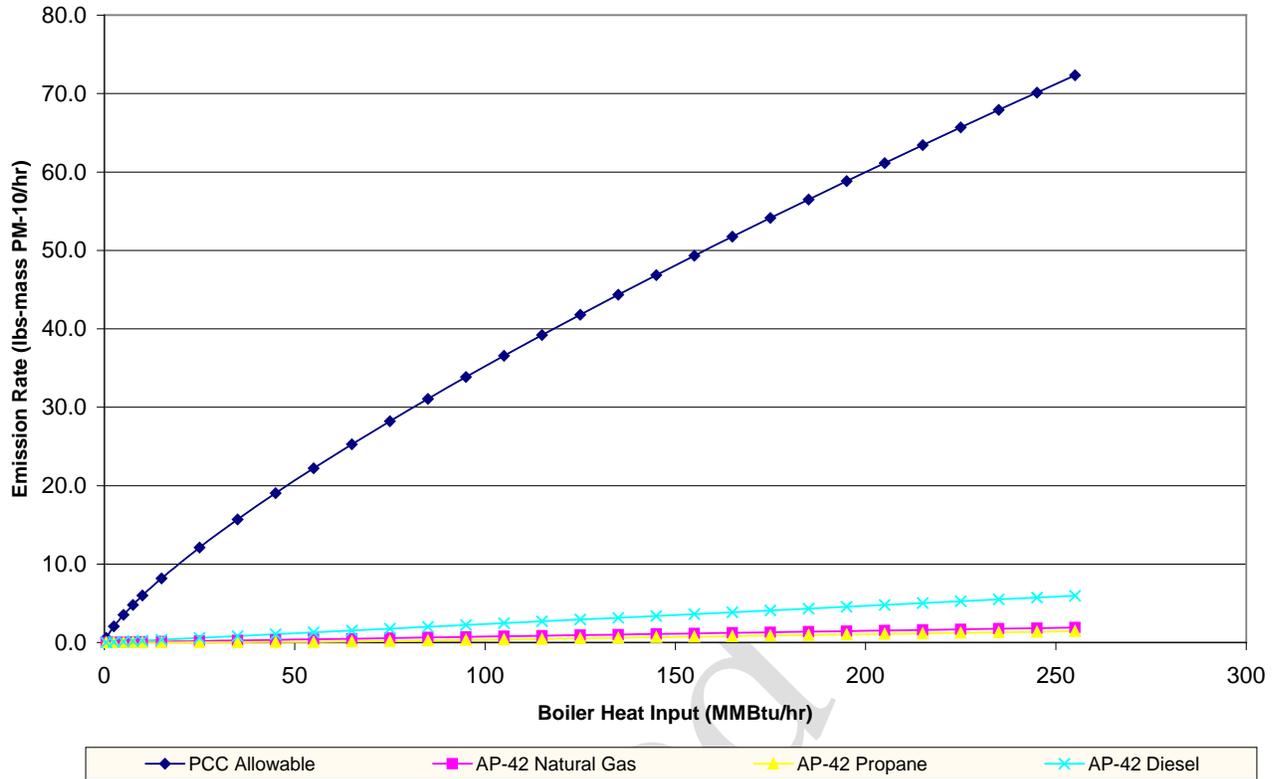
No control technologies needed to be determined; source is not subject to RACT, BACT or LAER.

X. Exclusion of PCC Particulate Matter Discharge Rate Standards From Permit

The applicable PCC rules for the maximum particulate discharge rates are not normally included for Class II and III 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 on page 6, illustrates the point.

Comparison of Emissions of PM-10 for Boilers: PCC Allowable vs AP-42 Estimated



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 Attachment 1.