

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office

MEMO

TO Air Quality Permit File OP-56-00155

FROM Jesse S. Parihar
Air Quality Engineering Specialist
Air Quality Program



THROUGH Thomas J. Joseph, P.E. *AAB for*
Environmental Engineer Manager
Air Quality Program

Mark R. Gorog, P.E. *M.R. Gorog*
Regional Manager
Air Quality Program

DATE October 11, 2016

RE **Comments and Response Document**
Somerset Area School District
Somerset Area Junior/Senior High School
Somerset Township, Somerset County
AUTH # 1129970, APS # 910962, PF # 513321

On March 17, 2016, the Department received a State Only Operating Permit (SOOP) renewal application from Somerset Area School District (SASD) for their existing Somerset Area Junior/Senior High School in Somerset Township, Somerset County. The facility is operating under OP-56-00155. The existing operating permit expires on November 21, 2016.

Notice of intent to issue the Operating Permit was published in the *Pennsylvania Bulletin* on September 10, 2016, in accordance with the requirements of 25 Pa. Code § 127.44-46. The required 30-day public comment period closed as of close of business on October 10, 2016.

A copy of the permit and review memo was sent to the applicant on September 7, 2016 for comments. No comments were received on the proposed permit from the public or the applicant.

I recommend issuance of OP-56-00155 for the above referenced facility for a five (5) year term from the date of issuance of this authorization.

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office

MEMO

TO Air Quality Permit File SOOP-56-00155

FROM Jesse S. Parihar
Air Quality Engineering Specialist
Bureau of Air Quality



THROUGH Thomas J. Joseph, P.E.
Environmental Engineer Manager
Air Quality Program

Mark R. Gorog, P.E.
Regional Manager
Air Quality Program



DATE: September 07, 2016

RE: SOOP Renewal Application OP-56-00155
Somerset Area School District
Somerset Area Junior/Senior High School
Somerset Borough, Somerset County
AUTH: 1129970 APS: 910962 PF: 513321

BACKGROUND

The Somerset Area School District (SASD) is a public school district in Somerset County, Pennsylvania. The district boundaries are within Somerset Borough and the Townships of Jefferson, Lincoln and Somerset. The district encompasses 156 square miles and occupies five buildings. Somerset Area High School is a public high school in Somerset, Pennsylvania, the county seat of Somerset County. The Senior High School serves about 700 Students in grades 9-12 and is attached to the Somerset Area Junior High School. The school is located on South Columbia Avenue in downtown Somerset. The SIC and NAICS Codes for the secondary school is 8211 and 611110, respectively.

The Somerset Area Junior/Senior High (SAJSHS) School District complex consists of two school buildings which are connected. The school operates two (2) tri-fuel boilers as well as an emergency electric generator. The boilers (Boiler No. 1 and Boiler No. 2) are coal-fired CNB Tri-Fuel, Model T-430LW-CH-G units; each rated at 14.9 MMBtu/hr, and designated as Source # 031 and # 032 in the operating permit. These boilers run on coal most of the year. Natural gas is fired only in early and late heating season. An elective coal usage restriction of 2,150 tons per year limits SO₂ emissions to less than 100 tons per year.

A natural gas-fired emergency generator is also on site at the senior high school. This unit is a 55 kW Kohler Model # 50 RZ282 which is test fired weekly and is included as Source # 101 in the permit.

The synthetic minor renewal application was received on March 17, 2016, was assigned to another reviewer, was re-assigned to me in August, 2016, and an administratively completeness review was performed on the application. On August 25, 2016, the applicant was sent an administrative completeness letter. The existing renewal operating permit expires on November 21, 2016. According to 25 § 127.446(e), permit renewal application must be received at least 6 months prior to expiration of the existing permit. The Department received the renewal application within the time frame.

SOURCES, CONTROL DEVICES AND EMISSIONS

In 1996 the permittee was advised by the Department to take a 2,160 tpy coal usage limit to avoid Title V status. SAJSHS proposed a 2,150 tpy coal limit which corresponds to the following potential to emit estimates at the facility:

**Table 1
Facility-wide Potential to Emit**

Pollutants	Potential to Emit (tpy)
NO _x	10.2
CO	11.8
VOC	1.4
SO _x	99.4
PM	16.1
HAP	1.5

1. PTE is based on 2,150 tons of coal throughput with a maximum 2.3% sulfur content per 12-month consecutive period.
2. Total HAP emission estimated by the Department and based on AP-42 emission factors for external combustion sources, Chapter 1.1.
3. HCL is the only single HAP which is greater than 0.5 tpy.

This elective restriction has been included in the operating permit. Typical actual annual coal usage is approximately 350 tpy and actual emissions are about 33.2 tpy SO_x and 2.6 tpy PM. The boiler emissions were estimated using AP-42 Section 1.1 emission factors for bituminous coal.

The boilers are equipped with underfeed stokers, over fire air systems, and opacity monitoring devices with alarms to control excess air flow if opacity is exceeded. Coal sulfur content is limited to 2.3% by weight and ash content to 10%.

There are several small emission sources at this facility which have been previously determined to be of minor significance in the previous operating permit and are included in the Miscellaneous Section of this permit. They include the following:

- Source # 034; one (1) natural gas-fired Bryant boiler, rated at 1.8 MMBtu/hr, and used to heat the water in the swimming pool.
- Source # 102; one (1) diesel-fired Kohler generator, rated at 37.5 kVA, and test fired weekly.

REGULATORY ANALYSIS:

This facility is a synthetic minor source of all air pollutants. Therefore, the SAJSHS facility is a minor facility and an area source of HAPs. A review of potentially applicable federal and Pennsylvania air pollution control regulations was made and the results are shown in Table 2:

**Table: 2
Somerset Area Junior/Senior High School (SOOP-56-00155) Regulatory Analysis**

Federal Regulations:

NSPS:

40 CFR Part 60 Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators.	Tri-Fuel Boilers at the SASHS facility are not greater than 250 MMBtu/hr. Subpart is not applicable to the SAJSHS facility.
40 CFR Part 60 Subpart Da – Standards of Performance for Electric Utility Steam Generating Units.	Tri-Fuel Boilers at the SAJSHS facility are not greater than 250 MMBtu/hr. Subpart is not applicable to the SAJSHS facility.
40 CFR Part 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.	Tri-Fuel Boilers at the SAJSHS facility are not greater than 100 MMBtu/hr. Subpart is not applicable to the SAJSHS facility.

<p>40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.</p>	<p>This subpart applies to ICI boilers 10-100 MMBtu/hr constructed after June 9, 1989. The SAJSHS boilers (Source ID 031 and Source ID 032) are greater than 10 MMBtu/hr whereas the boiler (Source ID 034) at the Junior High School is less than 10 MMBtu/hr. All three (3) boilers were installed on October 15, 1981, i.e. prior to June 9, 1989, and not subject to the requirements under the subpart.</p>
<p>40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.</p>	<p>There are no listed tanks at the SAJSHS facility. There are no fuel tanks at the SAJSHS facility and the boilers do not have the Tri-Fuel capability without a physical change.</p>
<p>40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.</p>	<p>No CI engine at the SAJSHS facility. Subpart is not applicable.</p>
<p>40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.</p>	<p>No SI engine at the SAJSHS facility is new enough (manufactured after June 12, 2006) to be applicable for this subpart. Subpart is not applicable.</p>

NESHAPs:

<p>40 CFR Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. (RICE)</p>	<p>This subpart applies to both major and area sources of hazardous air pollutants (HAP_s). However, 40 CFR 63.6585(f)(3) exempts existing institutional emergency Stationary Reciprocating Internal Combustion Engines (SRICE) located at area sources of HAP emissions from having to meet the requirements of Subpart ZZZZ. Institutional emergency RICE at area sources that are not obligated to operate for more than 15 hours annually for peak shaving, or load balancing, have no requirements under the subpart. No source has requirements under this subpart.</p>
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<p>40 CFR Part 63 Subpart DDDDD - National Emission Standards for Industrial, Commercial, Institutional (ICI) Boilers and Process Heaters.</p>	<p>The SAJSHS facility is not subject to this subpart as it is not a major source of HAP emissions.</p>
<p>40 CFR Part 63 Subpart UUUUU - National Emission Standards for Hazardous Air Pollutants (NESHAP) for electric utilities.</p>	<p>The SAJSHS facility is not subject to this subpart as there is no EGU source.</p>
<p>40 CFR Part 63 Subpart JJJJJ - National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers.</p>	<p>Two (2) Tri-Fuel Boilers at SAJSHS, each rated at 14.9 MMBtu/hr (Source ID 031 and Source ID 032) are authorized to burn a limited amount of coal. These boilers have requirements under the subpart and are considered existing, coal-fired boiler with heat input capacity of equal or greater than 10 MMBtu/hr, that do not meet the definition of limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio.</p> <p>The owner/operator of existing boilers must achieve less than or equal to the following emission limits, except during periods of startup and shutdown no later than March 21, 2014:</p> <ul style="list-style-type: none"> - Mercury: 2.2E-05 lb/MMBtu of heat input. - CO: 420 ppm by volume on a dry basis corrected to 3% O₂. - Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. <p>The owner/operator of existing boiler rated less than 5 MMBtu/hr must conduct an initial tune-up as specified in §63.11214, and conduct a tune-up of the boiler every 5 years as specified in §63.11223.</p>

Note: On September 2, 2016, Craig Smith, (contact person of the facility) informed the Department, during a telephone conversation, that no stack test was performed till date on the boilers, Source ID # 031 and Source ID # 032.

Air Programs:

40 CFR Part 64, Compliance Assurance (CAM) Monitoring.	No source at the facility is major for uncontrolled emissions.
40 CFR Part 98, Mandatory Greenhouse Gas Reporting	The SAJSHS facility is less than the 25,000 metric tons and are not required to report these emissions to the federal govt.

Pennsylvania Air Pollution Control Regulations:

25 Pa Code § 121.7 (Prohibition of Air Pollution)	Section is applicable.
25 Pa Code § 123.1 (Prohibition of Certain Fugitive Emissions)	Section is applicable.
25 Pa Code § 123.2 (Fugitive Particulate Matter)	Section is applicable.
25 Pa Code § 123.11 (Combustion Units)	Section is applicable to the SAJSHS facility's boilers (Source ID 031, Source ID 032, and Source ID 034) and each boiler is limited to maximum particulate emission of 0.4 lb/MMBtu.
25 Pa Code § 123.13 (Processes)	Section is applicable.

25 Pa Code § 123.22 (Combustion Units)	Section is applicable to all boilers at the SAJSHS facility (Source ID 031, Source ID 032, and Source ID 034) as they emit oxides of sulfur. The concentration of sulfur from each boiler is limited to 4 pounds per MMBtu of heat input over a 1- hour period.
25 Pa Code § 123.31 (Odor Emissions)	Section is applicable
25 Pa Code § 123.41 (Limitations - Visible Emissions)	Section is applicable
25 Pa Code § 123.42 (Exceptions - Visible Emissions)	Section is applicable
25 Pa Code § 123.43 (Measuring Techniques)	Section is applicable
25 Pa Code Chapter § 127.441 (Operating permit terms and conditions)	Section is applicable
25 Pa Code Chapter § 129.14 (Open Burning Operations)	Section is applicable. The SAJSHS facility is not in an air basin and open burning is allowed, with certain exceptions.

Conditions from the existing Operating Permit were carried forward into this proposed operating permit, with some deletions, changes, and additions. Permit language has been updated as follows:

Notable SIP standards which apply to the above facility include 25 Pa. Code Section 123.11 – 0.4 lb PM/MMBtu, 25 Pa Code §123.22 – 4 lb SO₂/MMBtu, the malodor provisions of 25 Pa Code §123.31, and the opacity standards of 25 Pa Code §123.41 have already been included in the permit.

As mentioned in regulatory analysis, the boilers are subject to the applicable requirements of 40 CFR Part 63 Subpart JJJJJ. Both the boilers are limited to a coal throughput of 2,150 tons per consecutive 12-month period. The permittee is required to do weekly monitoring for fugitive, visible, and malodor emissions and to keep records of the observations. Coal sulfur content is limited to 2.3% and ash content to 10%. Annual fuel usage records are required to be kept as well as coal analysis. A site level condition has been added to permit which limits the emergency generator to 500 hours of operation per consecutive 12-month period and requires records of operation to be maintained.

The existing malfunction conditions of the permit have been revised and replaced with the new malfunction conditions.

CONCLUSIONS AND RECOMMENDATIONS:

The SAJSHS facility has met the regulatory requirements associated with this renewal application submittal. On April 13, 2011, an annual compliance monitoring inspection was performed by Mr. Michael Kaufman, Air Quality Specialist. No permit deviation or violation was observed by the Department during the inspection in 2011. During the review of this application a potential violation of 40 CFR Part 63, Subpart JJJJJJ was discovered. This subpart required that boilers with a rating over 10 MMBtu/hr achieve emission rates less than 2.2E-05 lb/MMBtu for Mercury and 420 ppm for CO and perform stack testing no later than March 21, 2014. SAJSHS has not demonstrated compliance with these requirements. The Operations section has been notified of this issue, and will follow up with a facility inspection and any appropriate action. The attached permit reflects the applicable regulatory requirements associated with this facility.

The “Intent to issue Notice” will be published in the PA Bulletin for a 30-day public comment period on September 10, 2016. The proposed State Only Operating Permit Synthetic Minor renewal will be sent to the applicant for review as well as the Department’s Air Quality Specialist and District Supervisor for any comments.

It is my recommendation that the proposed State Only Operating Permit renewal be issued for this facility for a five (5) year permit term.