

TITLE V APPLICATION REVIEW

Facility Name: Anheuser-Busch Cartersville Brewery

City: Cartersville

County: Bartow

AIRS #: 04-13-015-00061

Application #: TV- 9042

Date Application Received: October 15, 1996, Updated application received June 11, 1998

Date Application Deemed

Administratively Complete: February 21, 1997

Date of Draft Permit:

Permit No: 2082-015-0061-V-01-0

Program	Review Engineers	Review Managers
SSPP/ASU	Curt Churchill	James Current
SSCP/ASU	Richard McDonald	Lou Musgrove
ISMP	Dan Abrams	Larry Webber
TOXICS	Michael Fortune	Neeraj Verma

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to [Facility name] and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Table 2: Comments on Specific Permits

Permit Number	Comments
2082-008-9777	Application did not include 1991 and 1992 amendments.
4952-008-11057	Originally the city of Cartersville was permitted to operate the wastewater treatment plant and were issued a permit with a 4952 SIC code for wastewater treatment. When Anheuser-Busch took over the plant they were issued a separate permit for this plant with the same wastewater number instead of the beer brewing number of 2082.

D. Process Description

1. SIC Code(s)

Major - 2082
Other - None

2. Description of Product

This facility is a complete beer brewery.

3. Overall Facility Process Description

Barley malt, cereal grains and hops are received at the plant and stored in silos or bins. The malt and grains are crushed, weighed, and mixed with brewing water and cooked. A fermentable sugar solution (wort) is separated from this cooked mash, leaving spent grains. Additional food ingredients are added to the wort and it is again cooked. After the mixture is clarified, yeast is added and the entire mixture is sent to batch fermenting tanks. Finished product is packaged in cans, bottles and kegs. Steam for cooking is supplied by four 99 MMBtu/hr gas fired boilers. A wastewater treatment plant is operated by Anheuser-Busch to handle the effluent from the brewing operations. Particulate matter emissions are generated by the handling of materials, including grains, malt, salt and diatomaceous earth. Volatile organic compound emissions are generated by fermentation, lagering, finishing and product packaging.

4. Overall Process Flow Diagram (optional) - Not included here, see attachment 1.20C of the application.

E. Regulatory Status

1. PSD/NSR

This facility is major under PSD regulations and went through a PSD review in order to obtain their initial air quality permit.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM ₁₀	✓	✓		
SO ₂	✓	✓		
VOC	✓	✓		
NO _x	✓	✓		
CO	✓	✓		
TRS	n/a			✓
H ₂ S	n/a			✓
Individual HAP	n/a			✓
Total HAPs	n/a			✓

3. MACT Standards

This facility is not subject to any proposed or final MACT Standards, but may be subject to future standards for industrial boilers or institutional boilers.

4. Program Applicability

Program Code	Applicable (Yes/No)
Program Code 6 - PSD	yes
Program Code 8 - Part 61 NESHAP	no
Program Code 9 - NSPS	no
Program Code M - Part 63 NESHAP	no
Program Code V - Title V	yes

II. Facility Wide Requirements

A. Emission and Operating Caps: Anheuser-Busch has no facility wide emission or operating caps.

B. Applicable Rules and Regulations

- Rules and Regulations Assessment - Anheuser-Busch is not subject to any facility wide air quality rules other than the general provisions in Part VIII and the general provisions contained in Rule 391-3-1-.02(2)(a).
- Emission and Operating Standards - Not applicable

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- C. Compliance Status: See Section VII.F.
- D. Operational Flexibility: See Section VII.A.
- E. Permit Conditions

No facility-wide conditions are included in the permit other than the general provisions in Part VIII, some of which are duplicated in Section II, Rule 391-3-1-.02(2)(a), which applies to all air contaminant sources in the state and a condition requiring the facility to comply with all applicable provisions of PSD regulations.

III. Regulated Equipment Requirements

- A. Brief Process Description

Malt, hops and grains are received, transferred, stored, milled and cooked. Yeast is added to the mash produced and the mixture is fermented in batches. The beer produced is packaged on site. Steam for cooking is provided by gas and oil fired boilers. The effluent from the plant is handled by a wastewater treatment plant.

- B. Equipment List for the Process

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
SB01	Steam Boiler No. 1, gas fired boiler with oil as a backup fuel	PM, NO _x , SO ₂ , CO, VOC	391-3-1-.02(2)(d) and (g), and 40 CFR 52.21	yes
SB02	Steam Boiler No. 2, gas fired boiler with oil as a backup fuel	PM, NO _x , SO ₂ , CO, VOC	391-3-1-.02(2)(d) and (g), and 40 CFR 52.21	yes
SB03	Steam Boiler No. 3, gas fired boiler with oil as a backup fuel	PM, NO _x , SO ₂ , CO, VOC	391-3-1-.02(2)(d) and (g), and 40 CFR 52.21	yes
SB04	Steam Boiler No. 4, gas fired boiler with oil as a backup fuel	PM, NO _x , SO ₂ , CO, VOC	391-3-1-.02(2)(d) and (g), and 40 CFR 52.21	yes
B001	Fermentation	VOC	None	n/a
B002	Lagering	VOC	None	n/a
B003	Finishing	VOC	None	n/a
B004	Packaging	VOC	None	n/a
F001	Flare No. 1	NO _x , SO ₂ , CO, VOC	None	n/a
F002	Flare No. 2	NO _x , SO ₂ , CO, VOC	None	n/a

C. Equipment & Rule Applicability

- Emission and Operating Caps - Emissions from the four boilers are limited for particulate matter, nitrogen oxides and opacity. Particulate matter emissions are limited to 0.10 lbs/10⁶ Btu heat input and nitrogen oxide emissions are limited to 0.30 lbs/10⁶ Btu heat input when firing natural gas and 0.40 lbs/10⁶ Btu heat input when firing fuel oil. The opacity of emissions are restricted to 20 percent. Each of these restrictions is the result of a Best Available Control Technology (BACT) analysis, which was required for this facility since it is subject to PSD regulations. A limit of 0.70 percent sulfur in the fuel oil burned is also required due to BACT.
- Applicable Rules and Regulations - Following is an overview of the Specific Rules and Regulations that apply to this facility.

Georgia Rule (d), parts 2 and 3 apply to the boilers located at this facility. Part 1 of this Rule doesn't apply since this entire facility was constructed after January 1, 1972. Georgia Rule (d)2.(ii) limits particulate matter emissions from all four boilers at this facility according to the following equation:

$$E = 0.5 * (10/R)^{0.5}$$

where E equals the allowable particulate emission rate in pounds per million Btu heat input and R equals the heat input in million Btu per hour.

This equation applies to boilers whose heat input is between 10 and 250 million Btus per hour. Based upon heat inputs of 99 MMBTU per hour, each of Anheuser-Busch's boilers would have a particulate matter limit of 0.158 lbs per million Btu. However, a more restrictive limit of 0.10 lbs per million Btu has is required by condition 3.3.1a, due to the BACT requirements of PSD. Part 3 of Rule (d) includes a 20 percent opacity limit which applies to all fuel burning sources constructed after January 1, 1972, regardless of size. Part 4 of Rule (d) does not apply since all of the fuel burning equipment at this facility have heat inputs of less than 250 million Btus per hour.

Georgia Rule (g) " Sulphur Dioxide" applies to all fuel burning sources capable of burning fossil fuel. However, part 1 of the Rule is inapplicable since there are no fuel burning sources at this facility with heat inputs of greater than 250 million BTUS per hour. All four boilers at this facility are limited to burning fuel containing no more than 3 percent sulfur, by weight, although condition 3.3.2 limits fuel oil sulfur content to only 0.70 percent. This is also due to BACT requirements.

40 CFR 52.21, the federal "Prevention of Significant Deterioration" regulations applied to the initial construction of this facility. The brewery has four boilers each rated at 99 million Btu per hour heat input, totaling 396 million Btus per hour. Facilities which have fossil fuel fired boilers totaling more than 250 million Btus per hour are major sources, by definition, under PSD regulations if they potentially emit more than 100 tons per year of a regulated pollutant. Once PSD regulations are triggered by any pollutant, other pollutants are considered to be emitted in significant quantities, if they are emitted above certain specified levels. The Best Available Control Technology (BACT) must be employed for each pollutant emitted in significant quantities. This usually includes the imposition of an emission limit in the permit for that pollutant. The original PSD permit issued to Anheuser-Busch included nitrogen oxide, particulate matter and opacity limits on boiler emissions as well as the fuel oil sulfur limit.

These limits were carried over into the Title V permit in condition 3.3.1 and 3.3.2.

D. Compliance Status: See Section VII.F.

E. Operational Flexibility: See Section VII.A.

F. Permit Conditions

3.3.1 Limits particulate matter emissions to 0.10 lbs/10⁶ BTU heat input, nitrogen oxide emissions to 0.30 lbs/10⁶ BTU heat input when firing natural gas, 0.40 lbs/10⁶ BTU heat input when firing oil and opacity emissions to 20 percent. These same limitations are contained in condition no. 6 of Anheuser-Busch's existing permit, were required by the PSD regulations and are carried over without change into this permit.

3.3.2 Limits fuel oil sulfur content to 0.70 percent and is condition no. 7 of the existing permit carried over without change into this permit.

3.5.1 Requires routine maintenance on all air pollution control devices and is condition no. 15 of the existing permit carried over without change.

3.5.2 Requires spare bags for baghouses be kept on hand and is condition no. 16 of the existing permit carried over without change.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

General Testing Requirements

None of the applicable regulations require performance testing, therefore testing was not required for any of the emissions units. However, the permit does contain a condition that the Division can require that a performance test be conducted to determine compliance with the emissions limits contained in Condition 3.4. Test methods for determining emissions are listed in Condition 4.1.3.

V. Monitoring Requirements (with Associated Record Keeping and Reporting)

General Monitoring Requirements

The general monitoring requirements have been included.

Specific Monitoring Requirements

The Steam Boilers (Emission Units B001, B002, B003, and B004) burn natural gas as the primary fuel, with fuel oil (a blend of no. 2 & no. 6 fuel oil) as the backup fuel. The boilers are subject to Georgia Rule for Air Quality Control 391-3-1-.02(2)(d) for opacity (visible emissions), Georgia Rule (2)(d) for particulate matter (PM) emissions and Rule (2)(g) for sulfur dioxide emissions. However, because of the Prevention of Significant Deterioration (PSD) regulations, emissions of particulate matter and sulfur dioxide are more strictly limited by this permit than would be required by the Georgia Air Rules. Nitrogen oxide emissions are also limited by the permit due to PSD regulations.

Low levels of excess air will result in nitrogen oxides emissions that are less than the permitted limitations, therefore an oxygen monitor is required to be installed on each boiler to measure flue gas oxygen concentration. Trigger levels of flue gas oxygen concentrations are specified to assure that the boilers are consistently operated with low excess air. Periodic checks of oxygen concentrations are required and any readings greater than the trigger levels are required to be reported.

The boilers do not have pollution control equipment for particulate matter. Particulate matter emissions and opacity will be well below applicable limits when the boilers are fired with natural gas and for this reason, no monitoring is required. However, when fuel oil is burned, a minimum level of flue gas oxygen (3%) as measured by the oxygen monitors is used as a trigger to assure compliance with PM and opacity limitations. Periodic checks of oxygen concentrations are required and any readings less than the trigger level are required to be reported.

The sulfur content of the fuel oil is limited to 0.70 percent sulfur by weight and fuel sulfur content is to be monitored through sampling and analysis. A sample of the fuel oil is required to be taken each time a shipment of oil is transferred to the storage tank. The sample is required to be taken using the appropriate American Society for Testing and Materials (ASTM) sampling method and the ASTM Test Method for analyzing the sulfur content is specified.

Record Keeping and Reporting Requirements

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence and the corrective action taken are required to be kept by the Permittee and reporting is required on a semiannual basis.

VI. Other Record Keeping and Reporting Requirements

General Record keeping and Reporting Requirements

All records specified in the permit are required to be maintained for a period of five years and a prompt reporting requirement is included in Condition 6.1.2.

Specific Record keeping and Reporting Requirements

Semiannual reports are being required for the analysis of the fuel oil burned. Also submitted are the quantity of each fuel burned (natural gas, fuel oil, and biogas).

VII. Specific Requirements

A. Operational Flexibility

Operational flexibility does not need to be incorporated into this Title V Permit. The applicant did not include any alternative operating scenarios in their Title V Application.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

C. Insignificant Activities

Insignificant activities are listed in Attachment B of the permit and in section 4.10 of the Title V permit application.

D. Temporary Sources

Anheuser-Busch did not request the permitting of any temporary sources.

E. Short-Term Activities

Anheuser-Busch did not report any short-term activities in their Title V application.

F. Compliance Schedule/Progress Reports

The facility is considered to be in compliance with all Air Quality Regulations. Therefore, no compliance schedule or progress reports are necessary.

G. Emissions Trading

This facility is not involved in any emissions trading programs.

H. Acid Rain Requirements

This facility is not subject to any requirements of Title IV of the Clean Air Act Amendments (acid rain).

I. Prevention of Accidental Releases

This facility has indicated that they have three substances which are stored in quantities above the thresholds for the Accidental Release Prevention Program.

J. Stratospheric Ozone Protection Requirements

The facility has indicated that they are subject to Title VI, Subparts F and potentially G of 40 CFR, Part 82.

K. Pollution Prevention

There are no pollution prevention provisions incorporated into this Title V Permit.

L. Specific Conditions - None

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

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Closing Block: We have reviewed and recommend issuance of draft Permit No. 2082-015-0061-V-01-0

Program	Review Engineers	Dates	Review Managers	Dates
SSPP/ASU				
SSCP/ASU				
ISMP				
TOXICS				

Stationary Source Permitting Program Manager

Date

Addendum to Narrative

Appendix B

Table titled Insignificant Activities Checklist

Under Storage Tanks and Equipment, the number of pressurized tanks was changed from 1 to 0.

Table under Generic Emission Groups titled Description of Fuel Burning Equipment

The number of units was changed from 18 to 19 and the words listing LPG as a fuel were deleted.