

**Air Pollution Control District  
Jefferson County, KY  
15 September 2000**

**TITLE V PERMIT SUMMARY**

**Company:** Brown-Forman Corporation  
Early Times Distillery Company and Shively Warehouse Complex

**Plant Location:** 2921 Dixie Highway, Louisville, KY 40216

**Date App Received:** 22 April 1997

**Date Admin Complete:** 15 May 1997

**Date of Draft Permit:** 24 September 2000

**Date of Proposed Permit:** 30 Nov 2000

**District Engineer:** Ronald Bohannon

**Permit No:** 136-97-TV

**Plant ID:** 0244

**SIC Code(s):** 2085

**NAICS:** 31214

**AFS:** 00244

**Introduction:**

This permit will be issued pursuant to: (1) District Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

Jefferson County is classified as an attainment area for sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM), particulate matter less than 10 microns (PM<sub>10</sub>), and lead (Pb); unclassifiable for particulate matter less than 2.5 microns (PM<sub>2.5</sub>); and is a moderate non-attainment area for ozone (O<sub>3</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

**Compliance Summary:**

Compliance certification signed

Compliance schedule included

Source is out of compliance

## I. Source Description

1. **Class I Area Impacts:** This plant is not located in or near a Class I area.
2. **Product Description:** Various alcoholic beverage production.
3. **Overall Process Description:** The company produces a variety of distilled spirits through mashing, fermenting and distilling of grains. The production of distilled spirits involves six major processes:

Grain Receiving  
Grain Mashing  
Fermentation  
Distillation  
Barrel warehousing, aging, dumping  
Stillage Processing

4. **Site Determination:** There are no other facilities which are contiguous or adjacent and under common control.

### 5. Emission Unit Summary:

**U1 - Grain handling operation** - Grains such as corn, wheat, rye, and barley malt are received by railroad car or truck. Grain is unloaded from railroad cars and trucks into a pit that drops the grain onto a screw conveyor. The conveyor transfers the grain into a grain cleaner and then the material is pneumatically conveyed to the appropriate storage silo.

**U1A - Fermentation** - Following grain mashing, the grain mash is transferred to fermentation tanks where the grain sugars are converted to ethanol and carbon dioxide. Yeast is used to assist in the conversion process.

**U2 - Barrel filling and dumping operations** - Following the mashing, fermentation and distillation processes, the liquid is transferred into stainless steel cistern tanks and diluted with demineralized water to the desired alcohol concentration. From the cistern tanks the distilled spirits are transferred to the barreling operation and loaded into wooden barrels.

**U3 - By-products processing and handling (Whole Stillage)** - Whole stillage from the bottom of the distillation columns is passed through a set-back screen to separate the grain (thick) stillage from the liquid (thin) stillage. The thick stillage is loaded into a storage tank prior to being transferred into a paddle screen for further separation. The thick stillage then enters a dryer to drive off the remaining moisture. The distilled dried grain is then loaded into the by-products storage tank prior to being conveyed onto trucks for off-site shipment.

The thin stillage is pumped from the set-back and paddles screens into sour mash storage tanks for subsequent use in the mashing units. Thin stillage overflow is pumped into a thin stillage storage tank. This thin stillage then enters a steam heated evaporator that concentrates the stillage by driving off the moisture. Depending upon the desired product, the

reduced stillage is either transferred into a dumping tank for mineral addition to form special solubles or transferred into a bulk syrup tank. The syrup tanks feed the dehydrators that further drive off moisture from the thin stillage. The dried product is transferred via cyclones to a final cyclone that conveys the material to storage.

**U4 Power generation** - The company operates one 121 MMBtu/hr coal/gas fired boiler designated as Boiler #1 and one 55 MMBtu/hr gas/fuel oil fired boiler designated as Boiler #2 to generate process steam. Steam generated by the boilers is used in the mashing units, distillation columns, multiple-effect evaporators, steam tube dryers, dehydrators and the warehouse.

**U5 - Low alcohol beverage line** - The company operates a bottling line to produce a 5% alcohol product. This facility is subject to District regulation 7.25.

**U6 - Whiskey Maturation Warehouses** - The barrels are transported from the barreling operations to maturation warehouses and stored for a period of three to ten years to allow maturation. Matured whiskey is removed from the warehouses and taken to the dump room where the whiskey is drained into stainless steel tanks and stored until loaded onto tank trucks and transported to another facility for further processing.

**U7 - Cold Solvent Parts Washers** - The company operates two parts washers subject to District regulation 7.18 which limits the solvent used for parts cleaning to a vapor pressure of 1 mm Hg or less.

6. **Fugitive Sources:** Whiskey Maturation Warehouse, U6.

7. **Title V Major Source Status by Pollutant:**

Pollutant	Actual Emissions (TPY) 1999 Data	Major Source Status Based On PTE
CO	31	Yes
NO <sub>x</sub>	86	Yes *
SO <sub>2</sub>	176	Yes
VOC	1319	Yes
PM	35	No
PM <sub>10</sub>	31	No
Total HAPs	0	No

\* *Company has requested to limit fuel usage for Emission Unit U4 to ensure NO<sub>x</sub> emissions are less than 100 TPY.*

8. **MACT Standards:** The USEPA is considering the promulgation of a Research & Development MACT, which may or may not apply to this source.

9. **Applicable Requirements:**

- |                              |                                  |   |                                |
|------------------------------|----------------------------------|---|--------------------------------|
| <input type="checkbox"/> PSD | <input type="checkbox"/> NSPS    | <input checked="" type="checkbox"/> SIP             | <input type="checkbox"/> Other |
| <input type="checkbox"/> NSR | <input type="checkbox"/> NESHAPS | <input checked="" type="checkbox"/> District-Origin | <input type="checkbox"/> MACT  |

II. **Regulatory Analysis**

1. **Emission and Operating Caps:** The company is limited to less than 100 tons per year of NO<sub>x</sub> emissions from Emission Unit U4 to avoid being subject to District regulation 6.42 - NO<sub>x</sub> RACT.
2. **Compliance Status:** The company signed and submitted a compliance certification with the Title V permit application.
3. **Operational Flexibility:** The company did not request to operate under any alternative operating schedules.
4. **Testing Requirements:** See specific testing requirements in the Title V permit.
5. **Monitoring, Record keeping and Reporting Requirements:** Monitoring, record keeping, and reporting requirements are specified in the permit
6. **Periodic Monitoring:**

a. **Opacity**

**U1 Grain Handling Operation** - The company shall perform weekly/monthly visible emissions surveys to monitor ongoing compliance with the opacity standard. The source is required to initiate corrective action within 8 hours if visible emissions are observed during the survey. If visible emissions persist a Method 9 test is required. These emission units have no history of compliance problems with the opacity standard. Actual PM emission rates are well below the emission standard. The periodic visible emissions surveys and Method 9 tests, if necessary, should be adequate monitoring to reasonably assure the source meets its opacity obligations for emission unit U1.

**U3 Byproducts** - The company shall perform daily/weekly visible emissions surveys to monitor ongoing compliance with the opacity standard. The source is required to initiate corrective action within 8 hours if visible emissions are observed during the survey. If visible emissions persist a Method 9 test is required. These emission units have no history of compliance problems with the opacity standard. Additionally, the company will monitor control device performance on a daily basis.

**U4 Boilers** - The company shall perform daily/weekly VE surveys when combusting coal or fuel oil #6 and monthly VE surveys when combusting natural gas to monitor ongoing compliance with the opacity standards..

b. **PM**

**U1 Grain Handling Operation** - The company will monitor the daily production rate, perform periodic inspections of each PM control device, and conduct VE surveys to reasonably assure ongoing compliance with the PM emission standard.

**U3 Byproducts** - The company will monitor the production rate, maintain various records of process parameters, and perform parametric monitoring to assure ongoing compliance.

**U4 Boilers** - The company will monitor the quantity and type of fuel combusted in each boiler in addition to the number of operating hours for each operating day. Also, the company will monitor the pressure drop for fabric filter C11 on a daily basis. Fuel monitoring coupled with daily monitoring of the control device performance should be sufficient periodic monitoring to reasonably assure ongoing compliance with the mass PM emission standard.

c. **VOC**

**U2 Barrel Filling/Dumping** - The company shall maintain records of the monthly throughput.

**U5 Bottling Line** - The company will monitor and maintain records of the monthly production rate and total VOC emissions for each calendar month to demonstrate ongoing compliance with the annual emission limit of 5 tons.

**U6 Warehouse** - There are no periodic monitoring requirements for this emission unit.

**U7 Parts Cleaners** - The company will maintain records of the solvent used to clean parts. Additionally, weekly visual inspections will be performed to monitor ongoing compliance with sections 3 and 4 of District regulation 7.18.

d. **SO<sub>2</sub>**

**U4 Boilers** - The company shall monitor and maintain records of the sulfur content (percent by weight) for each shipment of coal and fuel oil. Additionally, the company will maintain records of the total operating hours for each boiler for each operating day.

e. **NO<sub>x</sub>**

**U4 Boilers** - The company will monitor and maintain records of the quantity and type of fuel combusted in each boiler for each operating day to determine monthly

NO<sub>x</sub> emissions to demonstrate ongoing compliance with the annual NO<sub>x</sub> emission limit.

7. **40 CFR Part 60, Subpart Kb:** The storage of alcoholic beverages is exempt pursuant to 60.110b(7).

### III. Other Requirements

1. **Temporary Facilities:** The company did not identify any temporary facilities in its Title V permit application.
2. **Short Term Activities:** The company did not identify any short term operations in its Title V permit application.
3. **Compliance Schedule/Progress Reports:** None required.
4. **Emissions Trading:** None.
5. **Acid Rain Requirements:** This source is not subject to the Acid Rain requirements.
6. **Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances, in a quantity in excess of the corresponding specified threshold amount, as listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, for Chemical Accident Prevention Provisions.
7. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any source that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals.

### 8. Insignificant Activities:

Description	Quantity	Basis
Storage of lubricants or fuel oils with a vapor pressure <10 mm Hg at 20 degrees C.	Various	Reg 2.02, Section 2.3.9.2
Fuel burning equipment < 10 MMBtu/hr	Various	Reg 2.02, Section 2.1.1
Research and Development Activities, with potential emissions < 5 tons per year	1	Reg 2.02, section 2.3.27
Portable fuel tanks < 500 gallons and VOC storage vessels < 250 gallons	Various	Reg 2.02, section 2.3.23 and 2.3.24

Description	Quantity	Basis
Dust collectors which vent indoors and collect < 1 TPY of material	Various	Reg 2.02, section 2.3.21
Storage tanks for diesel or fuel oil usage. Fuel is not used for sale or distribution. Annual fuel turnover < twice the tank capacity, which is equal to 30,000 gallon	2	Reg 2.02, section 2.3.25
Internal combustion engines fixed or mobile	Various	Reg 2.02, section 2.2
Brazing, soldering and welding equipment	Various	Reg 2.02, section 2.3.4

1. Insignificant Activities are only those activities or processes falling into the general categories defined in District Regulation 2.02, Section 2, and not associated with a specific operation or process for which there is a specific regulation. Equipment associated with a specific operation or process (Emission Unit) shall be listed with the specific process even though there may be no applicable requirements. Information contained in the permit and permit summary shall clearly indicate that those items identified with negligible emissions have no applicable requirements.
  
2. Activities identified In District Regulation 2.02, Section 2, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the Title V permit.
  - a. No facility, having been designated as an insignificant activity, shall be exempt from any generally applicable requirement which shall include a 20% opacity limit for facilities not otherwise regulated.
  
  - b. No periodic monitoring shall be required for facilities designated as insignificant activities.