

Facility Name: **CITGO Asphalt Refining Company**
 City: Savannah
 County: Chatham
 AIRS #: 04-13-051-00012

Application #: TV-14950
 Date Application Received: January 13, 2004
 Permit No: 2911-051-0012-V-02-0

Program	Review Engineers	Review Managers
SSPP	Jeng-Hon Su	John Yntema
ISMP	Sandra Alvarado	Douglas Waldron
SSCP	Bob Scott	Richard Taylor
Toxics	N/A	N/A

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Part 70 operating permit. Complex issues and unusual items are explained herein simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to **CITGO Asphalt Refining Company** 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, the applicable requirements and their significance, and the methods for determining compliance with those applicable requirements. This narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description**A. Facility Identification**

1. Facility Name:

CITGO Asphalt Refining Company

2. Parent/Holding Company Name

CITGO Petroleum Corporation

3. Previous and/or Other Name(s)

Amoco Oil Company

4. Facility Location

Foundation Drive, Savannah, Chatham County, Georgia.

5. Attainment, Non-attainment Area Location, or Contributing Area

This facility is located in Chatham County, which is in attainment for all criteria pollutants.

6. Class I Area Impacts

CITGO Asphalt Refining Company is located within 100 km of the Wolf Island Wilderness (Class I) Area. CITGO is located within 200 km of the Cape Romain National Wilderness Refuge and Okefenokee National Wildlife Refuge and Wilderness (Class I) Area.

B. Site Determination

CITGO Asphalt Refining Company (AFS No. 051-00012) and CITERCO (AFS No. 051-00200) are parts of the same Title V Site. The companies are located on contiguous property, operate under common control, and have the same 2-digit SIC code (29). This renewal Title V Permit will cover only CITGO Asphalt Refining Company (AFS No. 051-00012). CITERCO (AFS No. 051-00200) applied for a separate renewed Title V Permit under application No. TV-14545, and Renewed TV Permit No. 2951-051-0200-V-02-0 was issued to CITERCO on May 5, 2004. Note that this site is a Title V synthetic minor source for HAPs.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
2911-051-0012-V-01-0	July 13, 1999	Initial TV Permit.
2911-051-0012-V-01-1	February 17, 2003	For the replacement of Distillation Tower D001.
Off-Permit Change Letter	October 20, 2003	For the installation of three storage tanks, an inline mixer, a phase separator, and the operation of an existing tank.
2911-051-0012-V-01-2	November 9, 2004	For the replacement of Distillation Tower D002.

D. Process Description

1. SIC Codes(s)

Major - 2911

2. Description of Product(s)

This plant produces asphalt, naphtha, and gas oil.

3. Overall Facility Process Description

Crude oil received by marine vessel is temporarily held in storage tanks. Crude oil is pumped from storage to two independent distillation units (ID Nos. D001 and D002), where asphalt is the primary product separated. The incoming crude to D001 is heated by Heater F001, and the incoming crude is heated by Heater F002. D001 receives heat energy from Boiler B004, and D002 receives heat energy from Boiler B005. Distillation is a separation process in which a liquid is converted to a vapor to allow separation of compounds with different vapor pressures and the vapors are then condensed to liquids. Asphalt, naphtha, and various weight gas oils are distilled from crude oil when they travel through the distillation towers. The heavier distillates are separated from the crude at higher temperatures (near the bottom section of the towers) than are the lighter distillates. Gas oils are usually separated from the crude oil within the general range of 300°F to 750°F. VOC and HAP emissions from D001 and D002, the lightest compounds, are controlled by a refrigeration/condenser system (ID No. REF1). All liquid products are then stored in aboveground tanks prior to being shipped. Gas oils and naphtha are shipped by marine vessel, and asphalt is shipped by tank car, tank truck, and marine vessel.

4. Overall Process Flow Diagram

None applicable.

E. Regulatory Status

1. PSD/NSR

CITGO Asphalt Refining Company (hereinafter facility) is located in an attainment area. Refining is one of the 28 named source categories under PSD regulations, part of the NSR rules of the CAA. This plant is a major source under PSD/NSR regulations. The facility has made several modifications to its plant in the past but has avoided PSD reviews by accepting various operating and emission caps.

The facility modified No. 2 Unit Heater (ID No. F002) in 1984. The facility received a PSD avoidance permit, through a PSD netting exercise. The sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions from Heater F002 were capped by limiting the residual oil usage of Heater F002 and the sulfur content in the residual oil; the limits are now contained in Conditions 3.2.1 and 3.2.2 of initial TV Permit No. 2911-051-0012-V-01-0.

The facility submitted Application No. TV-13891 for the replacement of distillation tower No. 1 (ID No. D001) in 2002. The facility received a PSD avoidance permit by accepting facility-wide emission limits of NO_x, SO₂, volatile organic compounds (VOC), and reduced sulfur (H₂S). The emission limits are contained in Conditions 2.1.2 – 2.1.5 of TV Permit Amendment No. 2911-051-0012-V-01-1.

The facility submitted Application No. TV-14951 for the replacement of distillation tower No. 2 (ID No. D002), received on January 13, 2004. The facility got a PSD Avoidance Permit No. 2911-051-0012-V-01-2 on November 9, 2004, to authorize the replacement of Distillation Tower D002. The permit amendment contained new emission limits to avoid a PSD review and existing Conditions 2.1.2 – 2.1.5 of TV Permit Amendment No. 2911-051-0012-V-01-1 were replaced. New Conditions 2.1.3-2.1.5 included new emission limits for NO_x, VOC, and H₂S. New Condition 2.1.2 contained an annual facility-wide residual fuel oil consumption limit that effectively limited annual SO₂ emissions to 192.4 tpy. Note that this residual fuel oil limit was more stringent than the limit in existing Condition 3.2.2 of TV Permit No. 2911-051-0012-V-01-0; the residual fuel oil consumption limit in existing Condition 3.2.2 was deleted in Permit No. 2911-051-0012-V-01-2. Please refer to the narrative that explained Permit No. 2911-051-0012-V-01-2 for further details.

2. Title V Major Source Status by Pollutant

Table 2: 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	✓	✓		
H ₂ S	✓	✓		
Individual HAP	✓		✓	
Total HAPs	✓		✓	

3. MACT Standards

The facility is not subject to any MACT standard because they obtained synthetic minor permit limits for HAPs before any applicable compliance date. Condition 2.1.1 of Permit No. 2911-051-0012-V-01-0 contains the facility-wide HAPs emission limits that make the source synthetic minor under TV for HAPs (specifically to avoid 40 CFR 63 Subpart CC requirements).

4. Program Applicability (AIRS Program Codes)

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

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

The HAPs emission caps specified in Condition 2.1.1 are discussed in the initial Title V permit narrative. Please refer to this narrative.

Emission and operating caps specified in Conditions 2.1.3-2.1.5 are discussed in the Title V permit narrative that explains Permit Amendment No. 2911-051-0012-V-01-2. Please refer to this narrative. Some discussion about these emission and operating limits can also be found in Section I.E.1. above.

By a letter dated June 30, 2005, the facility requested that EPD modify Condition 3.2.1 to ban the firing of residual fuel oils in the boilers (ID Nos. B004 and B005) and distillation tower heaters (ID Nos. F001 and F002), except during periods of natural gas curtailment. This request was a requirement in Paragraph 65 of U.S. EPA, Civil Action Number H-04-3883, Southern District of Texas, Consent Decree entered January 26, 2005. This consent decree was a result of violations of the Clean Air Act that occurred at some CITGO sites in other states; the resulting requirements applied to all CITGO facilities nationwide. Paragraph 65 of the consent decree bans the firing of fuel oil in any combustion units at the covered refineries, and Item V of the definition section defines fuel oil as any liquid fossil fuel with sulfur content of greater than 0.05% by weight. As a result, the facility is not authorized to fire any fuel oil, including residual fuel oil, that contains more than 0.05% sulfur by weight. According to the facility's Environmental Manager, Mr. Frank White, the facility requests to have the flexibility to fire distillate fuel oils that have a sulfur content equal to or less than 0.05% by weight, during all operating periods. That is allowed but the facility may fire residual fuel oils with a sulfur content up to 2.4% only during periods of natural gas curtailment.

As discussed in Section I.E.1 of this Narrative, Existing Condition 2.1.2 of Permit Amendment No. 2911-051-0012-V-01-2 contains an annual residual fuel oil consumption limit (1,018,000 gallons) that is equivalent to an annual SO₂ emission limit of 192.4 tpy. Since the facility requests to have the flexibility to fire distillate fuel oils that have a sulfur content equal to or less than 0.05% by weight, during all operating periods, and since firing residual fuel oils will no longer be the only source of SO₂ emissions, this Condition is revised to include a twelve-consecutive month SO₂ emission limit of 192.4 tpy to replace the annual residual fuel oil consumption limit.

B. Applicable Rules and Regulations

None applicable.

C. Compliance Status

None applicable.

D. Operational Flexibility

None applicable.

E. Permit Conditions

Condition 2.1.1 limits facility-wide single and combined HAPs emissions below 10 and 25 tpy in order to remain synthetic minor for HAPs and avoid the requirements in 40 CFR 63 Subpart CC.

As discussed previously, Condition 2.1.2 is revised to include a twelve-consecutive month SO₂ emission limit of 192.4 tpy, to replace the annual residual fuel oil consumption limit.

Conditions 2.1.3-2.1.5 contain facility-wide emission limits for NO_x, VOC, and H₂S that are for avoiding PSD review for the past replacement of Distillation Tower D002.

Condition 2.3.1 in initial Title V Permit No. 2911-051-0012-V-01-0 specifies the facility-wide PM emission allowable that is expressed by the equation in Georgia Rule (e), $E = 4.1 * P^{0.67}$. This is replaced by Condition 3.4.4 of the proposed Title V Renewal Permit which contains Rule (e) limits for all emission units listed in Table 3.1. Rule (e) PM emission limits for insignificant manufacturing emission units are specified in Condition 8.21.1 of the proposed Title V renewal Permit. With Condition 2.3.1 removed, Section 2.3 of the proposed Title V renewal Permit does not contain any conditions.

III. Regulated Equipment Requirements

A. Brief Process Description

A brief process description is specified in the narrative for Title V Permit No. 2911-051-0012-V-01-0. Please refer to this narrative.

B. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
B004	52.83 MMBtu/hr boiler	391-3-1-.02(2)(b) 391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	2.1.1, 2.1.2, 2.1.3, 2.1.4, 3.2.1, 3.2.2, 3.4.1, 3.4.2, 5.2.2.b, 6.2.4, 6.2.7, 6.2.8, 6.2.9, 6.2.11, 6.2.12, 6.2.13, 6.2.14	None	None
B005	59.40 MMBtu/hr boiler	391-3-1-.02(2)(b) 391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	2.1.1, 2.1.2, 2.1.3, 2.1.4, 3.2.1, 3.2.2, 3.4.1, 3.4.2, 5.2.2.b, 6.2.4, 6.2.7, 6.2.8, 6.2.9, 6.2.11, 6.2.12, 6.2.13, 6.2.14	None	None
F001	No. 1 unit heater, rated at 56.40 MMBtu/hr	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	2.1.1, 2.1.2, 2.1.3, 2.1.4, 3.2.1, 3.2.2, 3.4.3, 5.2.2.b, 6.2.4, 6.2.7, 6.2.8, 6.2.9, 6.2.11, 6.2.12, 6.2.13, 6.2.14	None	None
F002	No. 2 unit heater, rated at 56.40 MMBtu/hr	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	2.1.1, 2.1.2, 2.1.3, 2.1.4, 3.2.1, 3.2.2, 3.4.3, 5.2.2.b, 6.2.4, 6.2.7, 6.2.8, 6.2.9, 6.2.11, 6.2.12, 6.2.13, 6.2.14	None	None
D001	Crude oil distillation tower No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2.1.1, 2.1.4, 2.1.5, 3.4.1, 3.4.4, 5.2.1, 5.2.17, 5.2.18, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.10, 6.2.11, 6.2.14	REF1	Refrigeration/ condenser system
D002	Crude oil distillation tower No. 2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2.1.1, 2.1.4, 2.1.5, 3.4.1, 3.4.4, 5.2.1, 5.2.17, 5.2.18, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.2.10, 6.2.11, 6.2.14	REF1	Refrigeration/ condenser system
T007	External floating roof naphtha storage tank	N/A	2.1.1, 2.1.4, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	None	None

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
T017	Fixed roof medium gas oil storage tank	N/A	2.1.1, 2.1.4, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	None	None
T019	Fixed roof w/ internal floating roof naphtha storage tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(bb)	2.1.1, 2.1.4, 3.4.1, 3.4.5, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	None	None
T050	External floating roof crude oil storage tank	40 CFR 60.110a(a)	2.1.1, 2.1.4, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	None	None
T051	Fixed roof asphalt storage tank	40 CFR 60, Subpart UU	2.1.1, 2.1.4, 3.3.1, 5.2.2.a, 5.2.3, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	TC51	Mist eliminator
T052	Fixed roof asphalt storage tank	40 CFR 60, Subpart UU	2.1.1, 2.1.4, 3.3.1, 5.2.2.a, 5.2.3, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	TC52	Mist eliminator
T053	Fixed roof asphalt storage tank.	40 CFR 60, Subpart UU	2.1.1, 2.1.4, 3.3.1, 5.2.2.a, 5.2.3, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	TC53	Mist eliminator
T413	Fixed roof asphalt additives storage tank	N/A	2.1.1, 2.1.4, 6.2.2, 6.2.3, 6.2.4, 6.2.6, 6.2.11, 6.2.14	None	None
FE01	Valves in natural gas service	391-3-1-.02(2)(hh)	5.2.4, 6.2.1	None	None
FE02	Valves in naphtha service	391-3-1-.02(2)(hh)	5.2.4, 6.2.1	None	None
FE03	Connectors in naphtha service	391-3-1-.02(2)(hh)	5.2.4, 6.2.1	None	None
FE04	Pumps in naphtha service	391-3-1-.02(2)(hh)	5.2.4, 6.2.1	None	None
FE05	Pumps in gas oil service	391-3-1-.02(2)(hh)	5.2.4, 6.2.1	None	None

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
L001	Pumps in light liquid service	40 CFR 60, Subpart GGG	3.3.2, 3.3.7, 3.3.8, 4.2.1, 4.2.2, 5.2.5, 5.2.6, 5.2.7, 5.2.8, 6.2.15, 6.2.16	None	None
L002	Pressure relief devices in gas/vapor service	40 CFR 60, Subpart GGG	3.3.3, 3.3.9, 3.3.10, 3.3.11, 3.3.12, 3.3.13, 4.2.2, 6.2.15, 6.2.16	None	None
L003	Sampling connectors in light liquid service	40 CFR 60, Subpart GGG	3.3.4, 3.3.14, 3.3.15, 3.3.16, 6.2.15, 6.2.16	None	None
L004	Valves in light liquid service	40 CFR 60, Subpart GGG	3.3.5, 3.3.17, 3.3.18, 4.2.1, 4.2.2, 5.2.9, 5.2.10, 5.2.11, 5.2.12, 5.2.13, 5.2.14, 6.2.15, 6.2.16	None	None
L005	Pumps and valves in heavy liquid service	40 CFR 60, Subpart GGG	3.3.6, 3.3.19, 3.3.20, 4.2.1, 5.2.15, 5.2.16, 6.2.15, 6.2.16	None	None

* Generally applicable requirements contained in this permit may also apply to emission units listed above.

** Emission Groups FE01-FE05 and L001-L005 include some of the same emission units; both groups listed are in the emission unit table because one group is subject to GA Rule (hh) and the other group is subject to NSPS Subpart GGG.

C. Equipment & Rule Applicability

Equipment and Rule Applicability specified in Permit No. 2911-051-0012-V-01-0 is discussed in the initial Title V permit narrative for this permit. Please refer to this narrative. New and revised conditions are explained as follows:

Emission and Operating Caps:

Existing Condition 3.2.1 of Permit No. 2911-051-0012-V-01-0 limited that the facility should not fire any fuel oil that contained more than 2.4 percent sulfur, by weight. Existing Condition 3.2.2 limited the consumption of residual fuel oil in Heater F002 to not exceed 2,715,000 gallons per year. Both were to avoid PSD review through netting for the replacement of F002 in 1984. The 2,715,000-gallon limit for F002 was later deleted by Permit Amendment No. 2911-051-0012-V-01-2 because the 1,018,000-gallon facility-wide residual fuel oil annual consumption limit specified in existing Condition 2.1.2 of Permit Amendment No. 2911-051-0012-V-01-2 was more stringent.

Because of the EPA Consent Decree, the facility may fire residual fuel oils that have a sulfur content up to 2.4% only during periods of natural gas curtailment. As discussed in Section II.A. of this Narrative, the facility requests to have the flexibility to fire distillate fuel oils that have a sulfur content equal to or less than 0.05% by weight during all operating periods. This request has been granted and incorporated into revised Condition 3.2.1 of the proposed TV Renewal Permit.

Rules and Regulations Assessment:

New Source Performance Standards (NSPS, 40 CFR 60) Subpart GGG

NSPS Subpart GGG “Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries” applies to any petroleum refinery that commences construction or modification after January 4, 1983. Since CITGO replaced both Distillation Tower D001 and D002 after the applicable date, the facility is subject to this regulation. 40 CFR 60.592(a) says that each owner or operator subject to the provisions of Subpart GGG must comply with the requirements of §60.482-1 through §60.482-10. 40 CFR 60.482-1 to 60.482-10 are found in NSPS Subpart VV “Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry” and include emission standards for various types of equipment within a synthetic organic chemicals manufacturing facility.

The Division requested a list of affected units that are subject to NSPS Subpart GGG on March 18, 2005. The facility updated the electronic TV renewal application to include the requested list, and the revised application was received on June 27, 2005. Emission units are grouped in the same categories in 40 CFR 60.482-1 to 60.482-10. The facility has five emission groups (ID Nos. L001-L005) that are subject to the standards specified in §60.482-2, §60.482-4, §60.482-5, §60.482-7, and §60.482-8:

- Emission Group L001 - Pumps in Light Liquid Service (Subject to Standards in 40 CFR 60.482-2)
- Emission Group L002 - Pressure Relief Devices in Gas/Vapor Service (Subject to Standards in 40 CFR 60.482-4)
- Emission Group L003 - Sampling Connectors in Light Liquid Service (Subject to Standards in 40 CFR 60.482-5)
- Emission Group L004 - Valves in Light Liquid Service (Subject to Standards in 40 CFR 60.482-7)
- Emission Group L005 - Pumps and Valves in Heavy Liquid Service (Subject to Standards in 40 CFR 60.482-8)

Continuous Assurance Monitoring (CAM)

Distillation Towers D001 and D002 are subject to the provisions of 40 CFR Part 64, “Compliance Assurance Monitoring” (CAM) because:

- They are located at a major source that is required to obtain a Title V Permit. [§64.2(a)]
- They are subject to an emission limitation or standard (Facility-wide HAPs and VOC emission caps in Conditions 2.1.1 and 2.1.4) for the applicable pollutants (Single/Combined HAPs and VOC, the majority of which would be contributed by D001 and D002). [§64.2(a)(1)]

- They use control devices (Refrigeration/Condenser System REF1) to achieve compliance. [§64.2(a)(2)]
- Potential pre-controlled emissions of applicable pollutants (Single HAP, Combined HAPs, and VOC) from each of Emission Units D001 and D002 (with major source thresholds of 10, 25, and 100 tpy, respectively) are at least 100 percent of major source threshold. [§64.2(a)(3)]
- They are not otherwise exempt. [§64.2(b)]

D. Compliance Status

None applicable.

E. Operational Flexibility

None applicable.

F. Permit Conditions

Condition 3.2.1 has been modified to incorporate the requests by the facility in a letter dated June 30, 2005. Only in the event of natural gas curtailment, is facility then authorized to fire residual fuel oil; the residual fuel oil must contain less than 2.4 percent sulfur, by weight. The facility is authorized to fire distillate fuel oil that has a sulfur content less than 0.05%, by weight, at any time.

Existing Condition 3.2.3 of Permit No. 2911-051-0012-V-01-0 has been re-numbered to be Condition 3.2.2 in the proposed Title V Renewal Permit.

Condition 3.3.1 remains the same in the proposed Title V Renewal Permit.

New Conditions 3.3.2-3.3.20 of the proposed Title V Renewal Permit contain requirements of NSPS Subpart GGG (standards in 40 CFR 60.482-2, 60.482-4, 60.482-5, 60.482-7, and 60.482-8) for Emission Groups L001-L005.

The requirements of Existing Conditions 3.4.1-3.4.5 of Permit No. 2911-051-0012-V-01-0 have been revised to incorporate current standard language and were re-organized into Conditions 3.4.1, 3.4.2, 3.4.3, and 3.4.5 of the proposed Title V Renewal Permit. In addition, Tanks T007, T017, T050, and T413 are no longer subject to GA Rule (b) because they are not subject to any other rules under GA Air Quality Rule Section 391-3-1-.02(2).

Condition 3.4.4 of the proposed Title V Renewal Permit contains Rule (e) limits for the manufacturing emission units (Distillation Towers D001 and D002) listed in Table 3.1.

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

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

1. Individual Equipment

Both Conditions 5.2.1.a and 6.1.7.c.ii of the proposed Title V Renewal Permit define any monthly average temperature at the inlet of the liquid knockout drum of the refrigeration/condenser system (ID No. REF1) above 72°F as an excursion. During EPD's internal review, a question was raised as to whether the facility should be required to test the hexane emissions (the most dominant single HAP) from REF1 at 72°F to determine compliance with the HAP(s) emission caps in Condition 2.1.1.

The facility has been using the equation in Condition 6.2.5 to compute actual hexane emissions and determine compliance with the HAP(s) emission caps in Condition 2.1.1. The equation in Condition 6.2.5 was first introduced in Permit Amendment No. 2911-025-12438 that was effective on August 14, 1998, and then included in the initial TV Permit (No. 2911-051-0012-V-01-0). It includes two variables, monthly average temperature at the inlet of the liquid knockout drum and the amount of crude oil charged into the distillation towers per month. This equation was created based on the results (mathematic curves) of stack tests that were conducted in the spring of 1998 and had a correlation coefficient (i.e. $R^2 = 0.991$), high enough to validate the equation. SSCP and ISMP engineers witnessed the 1998 spring tests, and the proposed equation was approved by SSPP when Permit Amendment No. 2911-025-12438 was issued on August 14, 1998.

Using the equation in Condition 6.2.5 should provide the facility flexibility in operating the facility. When the inlet temperature increases, the facility can comply with the HAP(s) cap by decreasing crude oil throughput. When crude oil throughput increases, the facility can comply with the HAP(s) cap by decreasing the inlet temperature.

In a review of the narrative explaining Permit Amendment No. 2911-025-12438 dated on August 14, 1998, and the associated application, it was found that the stack was tested at four different inlet temperatures, 40.7°F, 50.0°F, 57.2°F, and 72.8°F. Although the equation has a high correlation coefficient, it is only validated between 40.7°F and 72.8°F. In other words, this equation is only proven to work between 40.7°F and 72.8°F. It is uncertain how well this equation would predict hexane emissions outside the 40.7°F-72.8°F temperature zone. In particular, EPD is concerned how well this equation works when the inlet temperature is above 72.8°F.

Although the facility has replaced the existing distillation towers (ID Nos. D001 and D002) and thus increased maximum crude oil throughput capacity, the equation in Condition 6.2.5 should still be effective for calculating hexane emissions inside the proper temperature zone (40.7°F-72.8°F) because the refrigeration/condenser system (ID No. REF1) has not been changed and the crude oil is the same. It is therefore believed that the equation still represents the chemicals' characteristics inside the control equipment. At the same inlet temperature, the hexane emission factor (pounds per 1,000 barrels of crude oil), calculated using the first half of the equation, should be identical regardless how much crude oil is discharged into the distillation towers. There is therefore no reason to question the validation of the equation in Condition 6.2.5.

Therefore, EPD has decided that no new hexane emission stack tests need be required for this TV renewal application. The facility can continue to use the equation in Condition 6.2.5 and calculate hexane emissions without going through another stack test. However, 72°F is kept in the proposed Title V Renewal Permit as an excursion level because the accuracy of the equation in Condition 6.2.5 is unpredictable when the inlet temperature is above 72°F. As long as the inlet temperature of the liquid knockout drum of REF1 stays equal to or below 72°F, and the calculated result, by using the equation in Condition 6.2.5, is less than 10 tons per year of hexane, the HAP(s) emission caps in Condition 2.1.1 for avoiding the MACT standard of 40 CFR 63, Subpart CC are assured to be complied with.

The above discussion is assuming that the control equipment capacity has not been exceeded with the increase in crude oil throughput capacity. It appears that the capacity has not been exceeded. The exhaust from the distillation towers (ID Nos. D001 and D002) is being cooled down on the way to the knockout drum. By the time when the exhaust reaches the inlet of the knockout drum, it is cooled down to a temperature lower than 72°F. If the refrigeration/condensing system could not handle the increased capacity, the inlet temperature would be exceeding 72°F, and excursions would occur. If that happened regularly, the facility would have to make adjustments to the refrigeration/condensing system to bring the inlet temperature below 72°F.

2. Equipment Groups (all subject to the same test requirements):

40 CFR 60.592(d) in NSPS Subpart GGG says that each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485 (NSPS Subpart VV) except as provided in § 60.593. Conditions 4.2.1 and 4.2.2 contain requirements of 40 CFR 60.485 "Test Methods and Procedures" and specify the testing/monitoring method for the emission groups that are subject to NSPS Subpart GGG.

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

1. Individual Equipment:

Monitoring requirements specified in Conditions 5.2.1-5.2.4 of proposed Permit No. 2911-051-0012-V-02-0 are discussed in the permit narrative for the initial Title V permit (No. 2911-051-0012-V-01-0). Please refer to this narrative. In addition, existing Section 5.2 of Permit No. 2911-051-0012-V-01-0 has been re-organized and existing Section 5.3 has been removed. The following table demonstrates the relationship of existing conditions of Permit No. 2911-051-0012-V-01-0 and the proposed Title V Renewal Permit.

Existing Condition Number in Permit No. 2911-051-0012-V-01-0		New Condition Number in Proposed Permit No. 2911-051-0012-V-02-0
5.2.1.a	becomes	5.2.2.a
5.2.1.b	becomes	5.2.1.a
5.2.2	becomes	5.2.2.b
5.2.3	remains	5.2.3
5.2.4	becomes	6.2.13
5.2.5	becomes	5.2.4
5.2.6	becomes	6.1.7
5.3.1	becomes	6.1.4
5.3.2	becomes	6.1.5
5.3.3	becomes	6.1.6
5.3.4	becomes	6.2.1

2. Equipment Groups (all subject to the same monitoring requirements):

Conditions 5.2.5 through 5.2.16

As discussed previously, each owner or operator subject to the provisions of Subpart GGG must comply with the requirements of §60.482-1 to §60.482-10 of NSPS Subpart VV, and Conditions 5.2.5 through 5.2.16 contain the monitoring requirement specified in 40 CFR 60 Subpart VV. These conditions include the requirements for monitoring pumps in light liquid service (ID No. L001), valves in light liquid service (ID No. L004), and pumps and valves in heavy liquid service (ID No. L005).

Condition 5.2.5 details the leak detection procedures for pumps used in light liquid service (ID No. L001). Condition 5.2.6 requires the leak detection procedures to be performed each calendar week. Condition 5.2.7 allows for the exemption of unsafe-to-monitor pumps from the monitoring and inspection requirements. Condition 5.2.8 exempts pumps in “unmanned plant sites” from the weekly visual inspections.

Condition 5.2.9 requires that the leak detection procedures for valves in light liquid service (ID No. L004) are followed once per month. Condition 5.2.10 sets 10,000 ppm as the threshold for a valve in light liquid service “leak”. Condition 5.2.11 allows for quarterly monitoring of a valve if no leaks have been detected for 2 consecutive months. Condition 5.2.12 establishes the criteria for a valve to have “no detectable emissions”. Condition 5.2.13 exempts unsafe-to-monitor valves from the monitoring and inspection requirements. Condition 5.2.14 exempts difficult-to-monitor valves from the monitoring and inspection requirements.

For the pumps and valves in heavy liquid service (ID No. L005), Condition 5.2.15 establishes the monitoring procedures if a potential valve leak is found. Condition 5.2.16 establishes a measurement of 10,000 ppm as the threshold for a connector, pump or valve in heavy liquid service “leak”.

C. Compliance Assurance Monitoring (CAM)

As discussed in Section III.C. of this permit narrative, Distillation Towers D001 and D002 are subject to the CAM rule. The facility attached a CAM plan to their TV renewal application (No. 14950). The facility proposed to monitor average temperature at the inlet to the liquid knockout drum of Refrigeration/Condenser System REF1 to ensure continuous compliance with the facility-wide emission caps for single/combined HAPs and VOC in Conditions 2.1.1 and 2.1.4. EPD agrees with the terms specified in their CAM plan and transfers/modifies the performance criteria for the refrigeration/condenser system (ID No. REF1) into Condition 5.2.18 of the proposed renewed Permit. Condition 5.2.17 basically states that Emission units D001 and D002 are subject to CAM rule, and that the regulated pollutants are hazardous air pollutants (HAPs) and volatile organic compounds (VOC).

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the 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.

B. Specific Record Keeping and Reporting Requirements

Record keeping requirements in existing Condition 6.2.1 of Initial Title V Permit No. 2911-051-0012-V-01-0 have been removed because Tank T413 is no longer subject to NSPS 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." An amendment to 40 CFR 60 Subpart Kb was promulgated on October 15, 2003, and 40 CFR 60.110b(a) specifies that Subpart Kb applies to each storage vessel with a capacity greater than 75 m³ (19,815 gallons) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tank T413 has a capacity of 11,634 gallons and hence, it is no longer subject to this subpart.

Record keeping and reporting requirements specified in existing Condition 5.3.4 of Initial TV Permit No. 2911-051-0012-V-01-0 are discussed in the initial Title V permit narrative. Please refer to this narrative. This condition has been moved to Section 6.2 and becomes Condition 6.2.1 of the proposed Title V Renewal Permit.

Record keeping and reporting requirements specified in existing Conditions 6.2.2-6.2.7 of Initial TV Permit No. 2911-051-0012-V-01-0 are discussed in the initial Title V permit narrative. Please refer to this narrative. Condition 6.2.4.e was added by TV Permit Amendment No. 2911-051-0012-V-01-2 and existing Condition 6.2.7.b was deleted by this Permit Amendment (and then Item c was re-numbered to b); please refer to this permit amendment's narrative for a detailed explanation. The requirements of Condition 6.2.8 of Initial TV Permit No. 2911-051-0012-V-01-0 was deleted by TV Permit Amendment No. 2911-051-0012-V-01-2 because of the deletion of the residual fuel oil consumption limit in existing Condition 3.2.2. Finally, Condition 6.2.7.c has been added to the proposed TV Renewal Permit because the facility is capable of firing ultra-low sulfur (<0.05% by weight) distillate fuel oil, so tracking distillate fuel oil usage is necessary to track VOC, NO_x, and SO₂ emissions.

Record keeping and reporting requirements specified in existing Conditions 6.2.8-6.2.11 of TV Permit Amendment No. 2911-051-0012-V-01-2 are discussed in its narrative. Please refer to this permit amendment's narrative. These conditions replaced the requirements of Conditions 6.2.9-6.2.13 of TV Permit Amendment No. 2911-051-0012-V-01-1. Existing Conditions 6.2.8-6.2.10 and 6.2.11 of TV Permit Amendment No. 2911-051-0012-V-01-2 are renumbered to Conditions 6.2.9-6.2.11 and 6.2.14 in the proposed Title V Renewal Permit because existing Condition 5.2.4 of Initial TV Permit No. 2911-051-0012-V-01-0 becomes Condition 6.2.13 in the proposed Title

V Renewal Permit, and new Conditions 6.2.8 and 6.2.12 of the proposed TV Renewal Permit are added to track SO₂ emissions and ensure compliance with the sulfur content limit of distillate fuel oil in revised Condition 3.2.1. The SO₂ emission tracking equation in new Condition 6.2.8 uses 0.05 percent sulfur for distillate fuel oils, 2.4 percent sulfur for residual fuel oils, and AP-42 emission factors. The VOC and NO_x emissions tracking equations in new Conditions 6.2.4.e and 6.2.9 are revised to include emissions from the combustion of ultra-low sulfur (<0.05% by weight) distillate fuel oils; the new terms that calculates VOC and NO_x emissions from the combustion of distillate fuel oil also use AP-42 emission factors.

40 CFR 60.592(e) (Subpart GGG) says that each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.486 and 60.487. Conditions 6.2.15 and 6.2.16 require the maintenance of records required by 40 CFR 60.486 and the submittal of semiannual reports per 40 CFR 60.487 that contain the information necessary to show compliance with 40 CFR 60 Subpart GGG.

VII. Specific Requirements

A. Operational Flexibility

None applicable.

B. Alternative Requirements

None applicable.

C. Insignificant Activities

Refer to <http://airpermit.dnr.state.ga.us/GATV/default.asp> for the Online Title V Application.

Refer to the following forms in the Title V permit application:

- Form D.1 (Insignificant Activities Checklist)
- Form D.2 (Generic Emissions Groups)
- Form D.3 (Generic Fuel Burning Equipment)
- Form D.6 (Insignificant Activities Based on Emission Levels of the Title V permit application)

D. Temporary Sources

None applicable.

E. Short-Term Activities

CITGO has indicated that they operate a short-term activity that is comprised of decoking Heaters F001 and F002. During the operation of F001 and F002, a thin layer of petroleum coke deposits on the inside of fired process heater tubes, reducing heat transfer efficiency. Process upsets rapidly increase coke deposition. During shutdown, a mixture of steam and air is injected into the furnace tubes to slowly oxidize away the coke. Furnace outlet products consist of large coke particulates (from spalling), carbon dioxide and steam, which are routed through a water spray to cool the outlet gases and capture the PM. The PM emissions from the decoking operation must comply with Georgia Rule for Air Quality Control 391-3-1-.02(2)(e).

F. Compliance Schedule/Progress Reports

None applicable.

G. Emissions Trading

None applicable.

H. Acid Rain Requirements

None applicable.

I. Stratospheric Ozone Protection Requirements

The standard permit condition pursuant to 40 CFR 82 Subpart F has been included in the Title V permit. The facility operates equipment that is subject to Title VI of the 1990 Clean Air Act Amendments.

J. Pollution Prevention

None applicable.

K. Specific Conditions

None applicable.

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.

Addendum to Narrative

The public notice was published by CITGO Asphalt Refining Company in the Savannah Morning News on October 6, 2005. The public comment period ended on November 7, 2005. We did not receive any comments from the facility or the public. Therefore, the final permit is being issued as proposed.