217/782-2113

REVISED
CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

PERMITTEE:

CITGO Petroleum Corporation
Attn: Claude Harmon
135th Street and New Avenue
Lemont, Illinois 60439-3659

I.D. No.: 197090AAI
Application No.: 96030079

Date Received: November 10, 2004
Date Issued: January 9, 2006
Expiration Date[1]: January 9, 2011

Operation of: Petroleum/Refinery
Source Location: 135th Street and New Avenue, Lemont, Will County, 60439
Responsible Official: Randall J. Carbo, Vice President and General Manager

This permit is hereby granted to the above-designated Permittee to OPERATE a petroleum refinery, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

Revision Date Received: February 11, 2008
Revision Date Issued: March 31, 2008
Purpose of Revision: Administrative Amendment

This administrative amendment identifies a new responsible official, corrects a reference to a condition, corrects dates of construction, and adds a rule citation to the rule. Since the changes in the permit were only administrative, no formal public notice was issued.

If you have any questions concerning this permit, please contact Dan Punzak at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:DGP:jws

cc: Illinois EPA, FOS, Region 1
CES
Lotus Notes

[1] Except as provided in Conditions 1.5 and 8.7 of this permit.

TABLE OF CONTENTS

		Page
1.0	**INTRODUCTION**	4
	1.1 Source Identification	
	1.2 Owner/Parent Company	
	1.3 Operator	
	1.4 Source Description	
	1.5 Title I Conditions	
2.0	**LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED**	6
3.0	**CONDITIONS FOR INSIGNIFICANT ACTIVITIES**	8
	3.1 Identification of Insignificant Activities	
	3.2 Compliance with Applicable Requirements	
	3.3 Addition of Insignificant Activities	
4.0	**SIGNIFICANT EMISSION UNITS AT THIS SOURCE**	12
5.0	**OVERALL SOURCE CONDITIONS**	16
	5.1 Applicability of Clean Air Act Permit Program (CAAPP)	
	5.2 Area Designation	
	5.3 Source-Wide Applicable Provisions and Regulations	
	5.4 Source-Wide Non-Applicability of Regulations of Concern	
	5.5 Source-Wide Control Requirements and Work Practices	
	5.6 Source-Wide Production and Emission Limitations	
	5.7 Source-Wide Testing Requirements	
	5.8 Source-Wide Monitoring Requirements	
	5.9 Source-Wide Recordkeeping Requirements	
	5.10 Source-Wide Reporting Requirements	
	5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios	
	5.12 Source-Wide Compliance Procedures	
6.0	**CONDITIONS FOR EMISSIONS CONTROL PROGRAMS**	32
	6.1 Emissions Reduction Market System (ERMS)	
	6.2 NO_x Trading Program	
7.0	**UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS**	47
	7.1 Unit: Process Heaters and Boilers	
	7.2 Unit: Storage Tanks	
	7.3 Unit: Fluid Catalytic Cracking Unit	
	7.4 Unit: HF Alkylation	
	7.5 Unit: Two Sulfur Recovery Units	
	7.6 Unit: Blending and Transfer (Loading)	

Page

7.7 Unit: Gas Recovery System and Flares
7.8 Unit: Fugitive VOC Emissions from Components
7.9 Unit: Wastewater Systems
7.10 Unit: UDEX Unit
7.11 Unit: Cooling Towers
7.12 Unit: Cold Cleaning Degreasers
7.13 Unit: Catalytic Reforming Units

8.0 GENERAL PERMIT CONDITIONS 174

8.1 Permit Shield
8.2 Applicability of Title IV Requirements
8.3 Emissions Trading Programs
8.4 Operational Flexibility/Anticipated Operating Scenarios
8.5 Testing Procedures
8.6 Reporting Requirements
8.7 Title I Conditions

9.0 STANDARD PERMIT CONDITIONS 179

9.1 Effect of Permit
9.2 General Obligations of Permittee
9.3 Obligation to Allow Illinois EPA Surveillance
9.4 Obligation to Comply with Other Requirements
9.5 Liability
9.6 Recordkeeping
9.7 Annual Emissions Report
9.8 Requirements for Compliance Certification
9.9 Certification
9.10 Defense to Enforcement Actions
9.11 Permanent Shutdown
9.12 Reopening and Reissuing Permit for Cause
9.13 Severability Clause
9.14 Permit Expiration and Renewal
9.15 General Authority for the Terms and Conditions of this Permit

10.0 ATTACHMENTS

1 Example Certification by a Responsible Official 1-1
2 Emissions of Particulate Matter from Process Emission Units 2-1
3 Compliance Assurance Monitoring (CAM) Plan 3-1
4 Guidance 4-1
5 List of Storage Tanks 5-1
6 Two Tables Summarizing Requirements for Leak Detection and Repair 6-1

1.0 INTRODUCTION

1.1 Source Identification

CITGO Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439
630/257-4450

I.D. No.: 197090AAI
Standard Industrial Classification: 2911, Petroleum Refining

1.2 Owner/Parent Company

PDV Midwest Refining, L.L.C.
750 Lexington Ave., 10th Floor
New York, New York 10022

1.3 Operator

CITGO Petroleum Corporation
135th Street and New Avenue
Lemont, Illinois 60439

Claude Harmon, Environmental Manager
630/257-4450

1.4 Source Description

The source produces petroleum distillates, petroleum coke and petrochemicals. In addition, petroleum refining requires a large amount of heat which the Permittee generates with numerous process heaters and three boilers.

1.5 Title I Conditions

As generally identified below, this CAAPP permit contains certain conditions for emission units at this source that address the applicability of permitting programs for the construction and modification of sources, which programs were established pursuant to Title I of the Clean Air Act (CAA) and regulations thereunder. These programs include 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification (MSSCAM), and are implemented by the Illinois EPA pursuant to Sections 9, 9.1, 39(a) and 39.5(7)(a) of the Illinois Environmental Protection Act (Act). These conditions continue in effect, notwithstanding the expiration date specified on the first page of this permit, as their authority derives from Titles I and V of the CAA, as well as Titles II and X of the Act. (See also Condition 8.7.)

a. This permit contains “Title I conditions” that reflect Title I requirements established in permits previously issued for this source, which conditions are specifically designated as “T1.”

b. This permit contains Title I conditions that revise Title I requirements established in permits previously issued for this source, which conditions are specifically designated as “T1R.”

c. This permit contains Title I conditions that are newly established in this CAAPP permit, which conditions are specifically designated as “T1N.”

2.0 LIST OF ABBREVIATIONS AND ACRONYMS COMMONLY USED

ACMA	Alternative Compliance Market Account
Act	Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
API	American Petroleum Institute
ATUs	Allotment Trading Units
BACT	Best Available Control Technology
BAT	Best Available Technology
bbl	Barrels
BSRP	Beavon Sulfur Recovery Plant
Btu	British thermal unit
°C	Degrees Celsius
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CEM(s)	Continuous Emission Monitoring (System)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	Centimeter
cm^2	square centimeter
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COM	Continuous Opacity Monitor
CSRP	Claus Sulfur Recovery Plant
dscf	dry standard cubic foot
ERMS	Emission Reduction Market System
ESP	Electrostatic Precipitator
°F	degrees Fahrenheit
FCC(U)	Fluid Catalytic Cracking (Unit)
ft	feet
gal	gallon
gr	grains
HAP	Hazardous Air Pollutant
HF	Hydrofluoric Acid
HHV	Higher Heating Value
HON	Hazardous Organic NESHAP
hr	hour
H_2S	Hydrogen Sulfide
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
Illinois EPA	Illinois Environmental Protection Agency
°K	degrees Kelvin
kg	kilogram
KOH	Potassium Hydroxide
kPa	Kilopascals
kW	kilowatts
LAER	Lowest Achievable Emission Rate
lb	pound

LEL	Lower Explosive Limit
LDAR	Leak Detection and Repair
LPG	Liquefied propane gas
m	meter
MACT	Maximum Available Control Technology
mg	milligram
mmBtu	Million British thermal units
mmscf	million standard cubic feet
mo	month
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
NSSA	New Source Set Aside
OM	Organic Material
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
ppmvd	parts per million by volume dry (basis)
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	pounds per square inch absolute
RADI	Rapid Acid Deinventory (system)
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
RVP	Reid Vapor Pressure
scf	standard cubic feet
SCR	Selective Catalytic Reduction
sec	second
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SRU	Sulfur Recovery Unit
T	Ton
T1	Title I B identifies Title I conditions that have been carried over from an existing construction permit
T1N	Title I New B identifies Title I conditions that are being established in this permit
T1R	Title I Revised B identifies Title I conditions that have been carried over from an existing construction permit and subsequently revised in this permit
TGTU	Tail-Gas Treatment Unit
ULNB	Ultra Low NO_x Burner
USEPA	United States Environmental Protection Agency
VOL	Volatile Organic Liquid
VOM	Volatile Organic Material
VPL	Volatile Petroleum Liquid
WGS	Wet Gas Scrubber
wt. %	weight percent
WWTP	Wastewater Treatment Plant
yr	year

3.0 CONDITIONS FOR INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

108D-45A	Coke Drum
108D-45B	Coke Drum
112F-18	Corrosion Inhibitor Mix Drum
113D-1	Coke Drum, Third from the West
113D-10	Coke Drum, West Drum
113D-11	Coke Drum, Second from West Drum
113D-2	Coke Drum, Third from the East
113D-3	Coke Drum, Second from the East
113D-4	Coke Drum, East Drum
116F-401	Chemical Injection Tank
1115F-403	Methanol Gauge Tank
120F-541	Neutralization Sump
120F-543	Acid Drain Neutralization Pit
120F-543	Settling Vat
120TK-514	Calcium Chloride Tank
120TK-545	Caustic Storage
122TKA-1	UDEX Charge Tank
122TKA-2	Clay Tower Charge Tank
123TK-401	Methanol Tank
123TK-487	Antifoulant to Desulf Feed
123TK-488	Corrosion Inhibitor
212F-419	Glycol Storage
228TK-1	Red Dye Storage for High Sulfur Diesel
228TK-2	Diesel Stabilizer
228TK-3	Anti-Oxidant, Gasoline
228TK-4	Concentrated Corrosion Inhibitor
228TK-5	Gasoline Sample Sump
228TK-10	Proto Fuel Tank
228TK-11	Proto Fuel Tank
331TK-400	Diluted Corrosion Inhibitor
331TK-720	Methanol Storage Tank
335TK-1	Lubricity Additive Storage Tank
335TK-2	Lubricity Additive Storage Tank
335TK-403	Red Dye Additive Storage Tank
335TK-402	Super Diesel Additive Storage Tank
335TK-404	Super Diesel Additive Storage Tank
335TK-408	Gasoline Additive Storage Tank
335TK-409	Growmark Additive
54TK-410	In-Plant Gasoline Dispensing Tank
Unit 335	Loading of Fuel Oil Into Tank Trucks

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

108TK-41	Decoking Waste Tank
113TK-1	Decoking Water Tank
119(rack)	Molten Sulfur Truck Loading Rack
119TK-001	MEA Storage Tank
119TK-401C	MEA Storage Tank
119TK-002	MEA Sump and Mix Pit
119TK-003A	119A-train Molten Sulfur Pit
119TK-003B	119B-train Molten Sulfur Pit
121TK-1C	121C-train Molten Sulfur Pit
121TK-1D	121D-train Molten Sulfur Pit
122TKA-3	DPG Solvent Storage Tank
122TKA-4	DEG Solvent Storage Tank
122TKA-5	Solvent Storage Tank
122TKA-6	Solvent Storage Tank
339	Chemical Handling Rack (Molten Sulfur and Spent Caustic Railcar Loading)
410TK-1	Lime Storage Bin
410TK-11A	Lime Pit Suction Pot
410TK-11B	Lime Pit Suction Pot
410TK-11D	Lime Pit Suction Pot
410TK-2	Coagulant Storage Bin

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Equipment used for filling drums, pails, or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(8)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Gas turbines and stationary reciprocating internal combustion engines of less than 112 kW (150 horsepower) power output [35 IAC 201.210(a)(15)].

Gas turbines and stationary reciprocating internal combustion engines of between 112 kW and 1,118 kW (150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a)(16)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials, provided an organic solvent has not been mixed with such materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions, or aqueous caustic solutions [35 IAC 201.210(a)(18)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b). Note: These activities are not required to be individually listed.

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.3.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322 (see Attachment 2) and 35 IAC Part 266. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit’s process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.2 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 218.301, which requires that organic material emissions not exceed 8.0 pounds per hour or, if no odor nuisance exists, do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.2.3 For each storage tank that has a storage capacity greater than 946 liters (250 gallons) and, if no odor nuisance exists, that stores an organic material with a vapor pressure exceeding 2.5 psia at 70°F, the Permittee shall comply with the applicable requirements of 35 IAC 218.122, which requires use of a

permanent submerged loading pipe, submerged fill, or a vapor recovery system.

3.2.4 For each emission unit required to be included in determining applicability of 35 IAC 218 Subpart TT, total VOM emissions from insignificant activities (including storage and handling of formulations) in conjunction with the applicable emission units in Section 7 of this permit shall not equal or exceed 25 ton/yr.

3.2.5 For each organic material emission unit that is exempt from 35 IAC 218 Subpart TT, the Permittee shall maintain emissions of VOM to the atmosphere less than or equal to 2.3 Mg (2.5 tons) per calendar year. The total emissions from emission units (including insignificant and significant activities) not complying with 35 IAC 218.986 shall not exceed 4.5 Mg (5.0 tons) per calendar year.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
Section 7.1				
01	102	FCCU Gasoline Hydrotreater ISAL Reactor Heater 102B-2	2002	Ultra Low NO_x Burners
02	103	Hydrotreater Feed Heater 103B-1	1988	None
03	104	Absorber Feed Heater 104B-20	1988	None
04	104	Hydrogen Recycle Heater 104B-21	1988	None
05	106	Vacuum Heater 106B-1	1984	Low NO_x Burners
06	107	Recycle Gas Heater 107B-21	1984	Low NO_x Burners
07	108	Process Heater 108B-41	1984	Low NO_x Burners
08	108	Steam Superheater 108B-42	1984	Low NO_x Burners
09	109	Steam HC Reformer Heater 109B-62	1984	Low NO_x Burners
10	111	Atmospheric Heater 111B-1A	1968	Ultra Low NO_x Burners
11	111	Atmospheric Heater 111B-1B	1968	Ultra Low NO_x Burners
12	111	Vacuum Heater 111B-2	1968	Ultra Low NO_x Burners
13	112	FCC Air Heater 112B-1	1968	None
14	112	CO Boiler 112B-2	1968	None
15	113	Coker 1 Charge Heater 113B-1	1968	Ultra Low NO_x Burners
16	113	Coker 1 Charge Heater 113B-2	1968	Ultra Low NO_x Burners
17	113	Coker 1 Charge Heater 113B-3	1984	Low NO_x Burners
18	114	Feed Preheater 114B-1	1968	None
19	114	Stripper Trim Reboiler 114B-2	1968	None
20	114	Stripper Reboiler 114B-3	1968	None
21	115	Feed Heater 115B-1	1968	None
22	115	Stripper Reboiler 115B-2	1968	None
23	116	Charge Heater and Stabilizer Reboiler 116B-1	1968	None

[a] These are not unique equipment numbers but numbers for a related process. For instance, all equipment in the fluid catalytic cracking process begin with the number 112.

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
24	116	Interheater and Naphtha Stripper Reboiler 116B-2	1968	None
25	116	#2 Interheater 116B-3	1968	None
26	116	Stabilizer Trim Reboiler 116B-4	1968	None
27	118	Hot Oil Heater 118B-1	1968	None
28	118	Reactor Charge Heater 118B-51	1968	None
29	122	ARU (Clay) Tower Furnace 122B-1	1961	None
30	122	Reactor Charge Heater 122B-2	1964	None
31	123	Feed Preheater 123B-1	1958	None
32	123	Feed Preheater 123B-2	1958	None
33	123	Reheat Furnace 123B-3	1958	None
34	123	Reheat Furnace 123B-4	1958	None
35	123	Reheat Furnace 123B-5	1968	None
36	125	Feed Heater 125B-1	1968	None
37	125	Stripper Reboiler 125B-2	1968	None
38	430	Auxiliary Boiler 430B-1	1968	None
39	431	North Plant Boiler 431B-20	2001	Low NO_x Burners
Section 7.2				
40	Storage Tanks - See Attachment 5			
Section 7.3				
41	112	Catalyst Regenerator 112D-1	1968	CO Boiler (112B-2) & ESPs (112P-1 & 2)
42	112	Catalyst Hoppers (112F-1 and 112F-2)	1968	Scrubber (112X-11)
Section 7.4				
43	120-1	HF Alkylation Reactor and Most Vessels are Closed Vent but Relief Valves Vent to Header and Knockout Drum	1984	Scrubber (Neutralizer) and Smokeless Flare
44	120-2	KOH Regeneration	1998	Carbon Canisters
45	120-3	Lime Storage Silo	1998	
46	120-4	RADI System	1998	
Section 7.5				
47	119	Claus Sulfur Recovery Process (119A)	1969	Oxidizers
48	119	Claus Sulfur Recovery Process (119B)	1969	Oxidizers
49	121	Claus Sulfur Recovery Process (121C)	1974	BSRP and Combustor

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
50	121	Claus Sulfur Recovery Process (121D)	1974	BSRP and Combustor
Section 7.6				
51	333	Barge Loading	1968	Vapor Combustor
52	334	Santa Fe LPG and Racing Gasoline Tank Car Loading Rack	1968	Submerged Loading Pipe for Racing Gasoline
53	335	Fuels Transport Loading Rack	1968	Enclosed Flare
54	337	ICG Tank Car Loading Rack	1968	Submerged Loading Pipe
55	338	Solvent Truck Loading Rack	1968	Submerged Loading Pipe
56	335	Three Ethanol Storage Tanks (335 TK-5, 6, 7)	2001	Submerged Loading Pipe
57	335	Gasoline Additive Storage Tank (TK-401)	1992	Submerged Loading Pipe
Section 7.7				
58	844	North Refinery Flare Gas Recovery System and Flare Stack (844C-1)	1968/1982 (FGR)	None
59	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 2)	1968/1982 (FGR)	None
60	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 3)	1968/1982 (FGR)	None
61	844	Coker 2 Flare Gas Recovery System and Flare Stack	1985	None
Section 7.8				
		Component Leaks		LDAR
Section 7.9				
62		Process Sewer Systems	Various	Water Seals on drains in certain units or portions of units
63	844	Nos. 4 and 5 North Plant Oil-Water Separators (844-1)	1983	Cover, Carbon Adsorber
64	844	No. 5 South Plant Oil-Water Separators (844-2)	1989	Cover, Bladder Tank, Carbon Adsorber
65	844	Wastewater Treatment Plant	1968	None

Permit Emission Unit Number	Permittee Unit Number[a]	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
Section 7.10				
66	122	UDEX Unit	1961	None - No Open Vents
Section 7.11				
67	420	South Plant Cooling Tower (420E-1)	1968	None
68	420	Alky Cooling Tower (420E-7)	1985	None
69	421	North Refinery Cooling Tower (421E-2)	1968	None
70	421	Coker 2 Cooling Tower (421E-3)	1983	None
Section 7.12				
71	---	Cold Cleaning Degreaser with Spray	1968	Doors and Cover
Section 7.13				
72	123	Naphtha Desulfurizer/Catalytic Reformer #1	1958	None
73	116	Catalytic Reformer #2	1968	None

5.0 OVERALL SOURCE CONDITIONS

5.1 Applicability of Clean Air Act Permit Program (CAAPP)

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of $PM_{2.5}$, NO_x, CO, SO_2, VOM and HAP emissions.

5.1.2 For purposes of the CAAPP and Title I of the Clean Air Act, CITGO Petroleum is considered a single source with BOC Gases, I.D. No. 197090ABF, located at 810 East 135th Street, Lemont. The Permittees have elected to obtain separate CAAPP permits for their operations.

5.2 Area Designation

This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate) and $PM_{2.5}$ and attainment or unclassifiable for all other criteria pollutants (CO, lead, NO_x and SO_2).

5.3 Source-Wide Applicable Provisions and Regulations

5.3.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions for Specific Emission Units) of this permit.

5.3.2 In addition, emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

b. Pursuant to 35 IAC 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, except as allowed by 35 IAC 212.123(b) and 212.124. The 35 IAC 212.122 exception only applies to fuel combustion emission units with a firing rate in excess of 250 mmBtu/hr and constructed after April 14, 1972. The Permittee does not have any units that meet this exception.

c. Pursuant to 35 IAC 237.102, no person shall cause or allow open burning, except the Illinois EPA may grant permits for open burning in accordance with 35 IAC 237.201.

d. Operating Program for Fugitive PM

i. Emission units identified in 35 IAC 212.304 through 212.308 shall be operated under the provisions of an operating program prepared by the Permittee and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions [35 IAC 212.309(a)].

ii. The operating program shall be amended from time to time by the Permittee so that the operating program is current. Such amendments shall be consistent with the requirements set forth by this condition and shall be submitted to the Illinois EPA [35 IAC 212.312].

iii. All normal traffic pattern roads and parking facilities located at this source shall be paved or treated with water, oils, or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils, or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program [35 IAC 212.306].

5.3.3 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.3.4 Risk Management Plan (RMP)

a. This stationary source, as defined in 40 CFR 68.3, is subject to 40 CFR Part 68, the federal regulations for Chemical Accident Prevention. This condition is imposed in this permit pursuant to 40 CFR 68.215(a)(1).

b. The owner or operator of a stationary source shall revise and update the RMP submitted pursuant to 40 CFR 68.150, as specified in 40 CFR 68.190.

5.3.5 Future Emission Standards

a. Should this stationary source become subject to a new or revised regulation under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by Condition 9.8. This permit may also have to be revised or reopened to address such new or revised regulations (see Condition 9.12.2).

b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable regulations under 40 CFR Parts 60, 61, 62, or 63, or 35 IAC Subtitle B that were promulgated after the date issued of this permit.

5.3.6 Episode Action Plan

a. Pursuant to 35 IAC 244.141, 244.142, and 244.143, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144 and is incorporated by reference into this permit.

b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared by the Director of the Illinois EPA or his or her designated representative.

c. If an operational change occurs at the source which invalidates the plan, a revised plan shall be submitted to the Illinois EPA for review within 30 days of the change, pursuant to 35 IAC 244.143(d). Such plans shall be further revised if disapproved by the Illinois EPA.

5.3.7 SO_2 Emissions

Except as provided by 35 IAC 214, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2,000 ppm [35 IAC 214.301]. This provision shall not apply to existing processes designed to

remove sulfur compounds from the flue gases of petroleum and petrochemical processes. [35 IAC 214.382(a)] Unit 119, an existing sulfur recovery unit (SRU), qualifies for that exclusion.

5.3.8 PM Emissions

The allowable limits pursuant to 35 IAC 212 Subpart L, particulate matter emissions from process emission units are presented in Attachment 2. Those limits do not apply to fluid catalytic cracking units, which are presented separately in Section 7.3 of this permit.

5.3.9 General VOM Limit

Except as provided in section (d) or (e) of this Condition, no person shall cause or allow the discharge of organic materials in excess of 100 ppm equivalent methane (molecular weight 16.0) into the atmosphere from:

a. Any catalyst regenerator of a petroleum cracking system; or

b. Any petroleum fluid coker; or

c. Any other waste gas stream from any petroleum or petrochemical manufacturing process.

d. Exception. Existing sources subject to Condition 5.3.9(c) may, alternatively, at their election, comply with the organic material emission limitations imposed by 35 IAC 218.301 or 218.302; provided, however, that there shall be no increase in emissions from such sources above the level of emissions in existence on May 3, 1979.

e. New Sources. Sources subject to Condition 5.3.9(c), construction of which commenced on or after January 1, 1977, may at their election, comply with the following emission limitations:

   i. A maximum of eight pounds per hour of organic material; or

   ii. Emissions of organic material in excess of the limitation of Condition 5.3.9(e)(i) of this Section is allowable if such emissions are controlled by air pollution control methods or equipment approved by the Illinois EPA capable of reducing by 85 percent or more the uncontrolled organic material that would otherwise be emitted to the atmosphere. Such methods or equipment must be approved by the Illinois EPA and approved by the USEPA as a SIP revision. (35 IAC 218.441)

Note that the cokers operated by the Permittee are delayed cokers and are not fluid cokers and therefore are not subject to Condition 5.3.9(b).

5.3.10 Vacuum Producing Systems

No owner or operator of a petroleum refinery shall cause or allow the operation of any vacuum producing system unless the condensers, hot wells and accumulators of any such system are equipped with vapor loss control equipment including, but not limited to, piping, valves, flame arresters and hot well covers, to vent any VOM with a vapor pressure of 1.5 psia or greater at 70°F to a heater, fire box, flare, refinery fuel gas system, or other equipment or system of equal emission control as approved by the Illinois EPA and approved by the USEPA as a SIP revision. This Section shall not apply to vacuum producing systems on lube units. (35 IAC 218.442)

5.3.11 Separators

Pursuant to 35 IAC 218.443, the owner or operator of a petroleum refinery shall not process organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3 K (70°F) in any wastewater (oil/water) separator at a petroleum refinery unless the separator is equipped with air pollution control equipment capable of reducing uncontrolled organic material emissions into the atmosphere by 85%. Both separators at this source are subject to NSPS, 40 CFR Subpart QQQ. See Condition 7.9.3(e)(ii). Compliance with the NSPS is deemed compliance with 35 IAC 218.443.

5.3.12 Turnaround Procedures

Pursuant to 35 IAC 218.444, the Permittee shall not cause or allow a refinery process unit turnaround except in compliance with an operating procedure approved by the Illinois EPA. Except for procedures that were on file with the Illinois EPA no later than November 1, 1979, the procedure shall be designed to reduce emissions of VOM during refinery process unit turnarounds from organic material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) and shall at a minimum include depressurization of the refinery process unit or vessel to a flare, refinery fuel gas system, or other equipment or system of equal emission control, as approved by the Illinois EPA, until the internal pressure from the vessel or unit is less than 5.0 psig before allowing the vessel to be vented to the atmosphere.

5.3.13 Vapor Blowdown Safety Relief Valves

Pursuant to 35 IAC 218.143, no person shall cause or allow the emission of organic material into the atmosphere from any vapor blowdown system or any safety relief valve, except such safety relief valves not capable of causing an excessive release, unless such emission is controlled:

a. To 10 ppm equivalent methane (molecular weight 16.0) or less; or

b. By combustion in a smokeless flare; or

c. By other air pollution control equipment approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 218.108.

d. Currently the Illinois EPA has not approved other air pollution control equipment for use in controlling vapor blowdown emissions at this source.

5.3.14 Further Safety Relief Valve Provisions

Pursuant to 35 IAC 218.144, Condition 5.3.13 shall not apply to any set of unregulated safety relief valves capable of causing excessive releases, provided the owner or operator thereof, by October 1, 1972, supplied the Illinois EPA with the following:

a. A historical record of each such set (or, if such records were unavailable, of similar sets which, by virtue of operation under similar circumstances, may reasonably have been presumed to have the same or greater frequency of excessive releases) for a three-year period immediately preceding October 1, 1972, indicating:

   i. Dates on which excessive releases occurred from each such set;

   ii. Duration in minutes of each such excessive release; and

   iii. Quantities (in pounds) of mercaptans and/or hydrogen sulfide emitted into the atmosphere during each such excessive release.

b. Proof, using such three-year historical records, that no excessive release is likely to occur from any such set, either alone or in combination with such excessive releases from other sets owned or operated by the same person and located within a ten-mile radius from the center point of any such set, more frequently than 3 times in any 12 month period.

c. Accurate maintenance records for such safety relief valves.

d. Proof, at three-year intervals, using such three-year historical records, that such set conforms to the preceding requirements.

5.3.15 NESHAP Requirements

a. General Refinery NESHAP

i. Certain petroleum refining process units at the refinery are subject to 40 CFR 63 Subpart CC, NESHAP for Petroleum Refineries. However, Subpart CC exempts certain units from applicability of the rule. For instance, units that are subject to the HON rule are exempt from applicability of Subpart CC. Within the overall standard are specific standards for various classifications as follows:

A. Miscellaneous process vents.

B. Storage vessels.

C. Wastewater streams and wastewater treatment operations.

D. Equipment leaks.

E. Gasoline loading racks.

F. Marine vessel loading operations.

ii. Permittee shall comply with the following:

A. The notification requirements in 40 CFR Subpart A (63.7 to 63.9).

B. The recordkeeping and reporting requirements of 40 CFR 63.654.

iii. The refinery units that emit HAPs are also subject to the general requirements 40 CFR 63 Subpart A (63.1 to 63.15). One of these requirements for units that comply by use of control equipment is to have a Startup, Shutdown and Malfunction Plan as required by 40 CFR 63.6(e)(3).

iv. Within some of the above classifications there are two groupings. Group 1 units generally require control equipment or emission minimization methods. Group 2 units do not require control equipment or emission minimization methods. In Section 7 of this permit, specific emission units are identified as being Group 1 or Group 2 units.

v. The Permittee shall certify compliance with the applicable requirements of Subpart CC as part of the annual compliance certification required by 40 CFR Part 70 or 71.

b. Specific Refinery NESHAP

This stationary source is subject to 40 CFR Part 63 Subpart UUU, (NESHAP for Petroleum Refineries - Catalytic Cracking (Fluid and Other) Units, Catalytic Reforming Units and Sulfur Plant Units). The Permittee shall certify compliance with Part 63 Subpart UUU as part of the annual compliance certification as required by 40 CFR Part 70 or 71, beginning in 2005. Units affected include fluid catalytic cracking unit, the catalytic reformer and the sulfur recovery units. See those units in Section 7.

c. Boilers and Heaters NESHAP

The final rule for Industrial Boilers and Process Heaters under the NESHAP, 40 CFR 63 Subpart DDDDD, was published on September 13, 2004. The boilers and heaters operated by the Permittee (See Section 7.1) meet the definition of a “large gaseous fuel subcategory” under 40 CFR 63.7575 and therefore pursuant to 40 CFR 63.7506(b) they are only subject to the initial notification requirements in 40 CFR 63.9(b) (i.e., they are not subject to the emission limits, work practice standards, performance testing, monitoring, startup, shutdown and malfunction plan, site-specific monitoring plans, recordkeeping and reporting requirements of 40 CFR 63 Subpart DDDDD or any other requirements in Subpart A of Part 63).

5.3.16 Benzene Waste Operations

a. The requirements of 40 CFR 61 Subpart FF, Benzene Waste Operations, are applicable because the source is a petroleum refinery with a total annual benzene quantity in its waste streams in excess of 10 megagrams per year. The Permittee has chosen to comply with 40 CFR 61.342(e)(2) which states that the benzene quantity for the wastes described below shall not exceed 6 megagrams per year:

> The owner or operator shall manage and treat facility waste (including remediation and process unit turn-around waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent.

b. The determination of benzene quantity for each waste stream shall be made in accordance with 40 CFR 61.355(k).

c. Recordkeeping shall be in accordance with 40 CFR 61.356.

d. Reporting shall be in accordance with 40 CFR 61.357.

5.3.17 Consent Decree

a. The Permittee shall operate the Lemont petroleum refinery in accordance with the Consent Decree between the Permittee and the USEPA/Illinois EPA as finalized and dated January 26, 2005 (Date of Entry). The Date of Lodging for the Consent Decree was October 6, 2004.

b. If the Consent Decree is amended the terms of the modified Consent Decree become requirements, whether more or less stringent or with earlier or later dates for compliance, of this CAAPP permit without the necessity of modifying this permit.

c. The Consent Decree requirements (e.g., emission limits and standards) must be incorporated into this CAAPP permit. The Consent Decree has a termination date after which, upon concurrence between U.S. EPA/Illinois EPA and the Court, only the surviving emission limitations and standards will remain in effect. The other Consent Decree requirements will no longer be in force.

d. The definitions in the Consent Decree will not be listed, but do apply to the requirements that follow.

e. The primarily affected units are heaters and boilers (Section 7.1), the fluid catalytic cracking unit (FCCU, Section 7.3), the sulfur recovery units (Section 7.5), hydrocarbon flaring (Section 7.7), benzene waste operations (Condition 5.3.16) and leak detection and repair (Section 7.8). The reductions in emissions that will result are primarily NO_x and SO_2. More details of the requirements are in Section 7.

f. The Consent Decree requires that semi-annual reports be submitted to applicable federal and state agencies. In addition to including the Illinois Attorney General required by the Consent Decree, these semi-annual reports must also be submitted to the Bureau of Air Compliance Unit, Permit Section and the Field Operations Office in Des Plaines.

   The semi-annual reports must be submitted by August 31 for the January 1 to June 30 period and by February 28 for the period from July 1 to December 31.

   The items to be included in the semi-annual reports are listed in Paragraph 144 of the Consent Decree.

g. If a discrepancy exists between the Consent Decree itself and the shortened version in this permit, then the terms of the Consent Decree take precedence.

5.4 Source-Wide Non-Applicability of Regulations of Concern

5.4.1 This source is not subject to 40 CFR Part 63, Subpart EEEE (Organic Liquids Distribution, referred to as OLD MACT), because the emission units at the source that store or transfer HAP-containing materials are subject to the storage provisions under the refinery MACT (Subpart CC) or HON (Subpart G) and the other units do not handle materials with a HAP content greater than 5% (See definition of organic liquid subject to OLD in 40 CFR 63.2406; See also Condition 5.5.1)

5.4.2 This source is not subject to 40 CFR Part 63, Subpart ZZZZ (Reciprocating Internal Combustion Engines, referred to as RICE MACT), because the source does not have any reciprocating engines greater than 500 Brake Horsepower. (See Condition 5.5.2)

5.4.3 This source is not subject to 40 CFR Part 63, Subpart GGGGG (Site Remediation MACT), because the remediation activities being conducted at the site are being done pursuant to CERCLA or RCRA Corrective Action provisions. (See Condition 5.5.3)

5.4.4 The safety relief valves at the refinery are not subject to 35 IAC 218.301 (8 lb/hr rule) because they are covered by more specific regulations, 35 IAC 218.143 (vapor blowdown requirements) and 218.144 (safety relief valve requirements).

5.5 Source-Wide Control Requirements and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

5.5.1 The units that are potentially subject to the OLD MACT (See Condition 5.4.1) shall not store or transfer materials with a HAP content greater than 5% for the HAPs listed in Table 1 of 40 CFR 63 Subpart EEEE unless this permit is revised to include applicability of the OLD MACT.

5.5.2 The Permittee shall not operate any reciprocating internal combustion engines with a power rating greater than 500 Brake Horsepower (See Condition 5.4.2) unless this permit is revised to include applicability of the RICE MACT.

5.5.3 Remediation activities not subject to CERCLA or RCRA Corrective Action provision (See Condition 5.4.3) and lasting more than 30 days (from the commencement of the remediation) are subject to the emission limits and standards of the Remediation MACT. The Permittee shall not conduct any remediation activities not subject to CERCLA or RCRA Corrective Action Provision (see Condition 5.4.3) and lasting more than 30 days (from the commencement of the remediation) unless this permit is revised to include applicability of the Remediation MACT.

5.6 Source-Wide Production and Emission Limitations

5.6.1 Permitted Emissions for Fees

Emission limitations are not set for this source for the purpose of permit fees. The Permittee shall be required to pay the maximum fee, pursuant to Section 39.5(18)(a)(ii)(A) of the Act, which is $250,000.00 per year as of the date issued of this permit.

5.6.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.6.3 Other Source-Wide Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, state rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.7 Source-Wide Testing Requirements

5.7.1 Pursuant to 35 IAC 201.282 and Section 4(b) of the Act, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

a. Testing by Owner or Operator: The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests [35 IAC 201.282(a)].

b. Testing by the Illinois EPA: The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and

proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary [35 IAC 201.282(b)].

c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

5.7.2 HAP Testing to Verify HAP Content of Organic Liquids

Pursuant to Condition 5.7.1 and to verify compliance with the requirements of Condition 5.5.1, that is that organic liquids potentially subject to the OLD MACT do not contain more than 5% HAPs, the following testing requirements are established:

a. If in the previous calendar year, the HAP content based on typical composition of the materials potentially subject to the OLD MACT is less than 4% then further testing is not required. If the composition of the materials is greater than 4% then testing for HAPs using USEPA Method 311 shall be conducted.

b. Testing may be conducted by the supplier of the HAP-containing material if it is received from off-site and not the product of on-site refining.

c. Any such tests are also subject to the Testing Procedures of Condition 8.5 set forth in the General Permit Conditions of Section 8.

5.8 Source-Wide Monitoring Requirements

Source-wide monitoring requirements are not set for this source. However, there may be provisions for unit specific monitoring set forth in Section 7 of this permit.

5.9 Source-Wide Recordkeeping Requirements

5.9.1 Annual Emission Records

The Permittee shall maintain records of total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit to demonstrate compliance with Condition 5.6.1, pursuant to Section 39.5(7)(b) of the Act.

5.9.2 Records for HAP Emissions

a. The Permittee shall maintain records of HAP emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions for Specific Emission Units) of this permit, pursuant to Section 39.5(7)(b) of the Act.

b. If testing is required by Condition 5.7.2, the Permittee shall keep records of the testing, including the test date, conditions, methodologies, calculations, test results, and any discrepancies between the test results and formulation specifications of Condition 5.9.2(c) below.

c. The Permittee shall keep an MSDS or equivalent document showing the typical composition of each HAP containing material potentially subject to the OLD MACT, including content of all HAPs. These composition sheets may be used to determine if further testing is required pursuant to Condition 5.7.2.

5.9.3 Records for Other Source-Wide Emission Limitations

a. General Records for Process Unit Turnarounds

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.3.12:

i. Each date that a refinery unit or vessel is shutdown for turnaround;

ii. The total estimated quantity of VOM emitted to the atmosphere resulting from the turnaround and the duration of the emissions in hours, with supporting information (Emissions associated with process unit turnaround shall not be included when determining compliance with any hourly or annual emission limitation); and

iii. Any occurrence of depressurization of a refinery unit or vessel with a pressure of 5.0 psig or greater containing a material with a vapor pressure of 10.34 kPa (1.5 psia) or greater at 294.3°K (70°F) by venting directly to the atmosphere, and the reason for such venting.

b. Records for Safety Relief Valves

The Permittee shall maintain records of all safety relief valves which are excluded from the control requirements of Condition 5.3.13 pursuant to Condition 5.3.14 because they are capable of causing excessive releases, but no excess release is likely to occur based on historical information as previously submitted to the Illinois EPA. These records shall include, as a minimum, the following:

i. Identification of such safety relief valves or sets of safety relief valves; and

ii. Historical information that demonstrates that no excessive releases are likely to occur from any such

set of valves, either alone or in combination with such excessive releases from other sets owned or operated by the Permittee and located within a ten-mile radius from the center point of any such set, more frequently then 3 times in any 12 month period.

c. Records for Units Exempt from Subpart TT Control Requirements

The Permittee shall maintain a list of all units that are subject to 35 IAC 218 Subpart TT which are not required to comply with the control requirements of 35 IAC 218.981(a) by meeting the exemption in 35 IAC 218.980(d), that is, individual emission units with VOM emissions of less than 2.5 tons per calendar year if the total emissions from all such units not complying with 35 IAC 218.986 do not exceed 5.0 tons per calendar year. Within 30 days of the end of each calendar year the emissions from each unit exempt from the control requirement shall be updated to include the most recent calendar year.

5.9.4 Retention and Availability of Records

a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.10 Source-Wide Reporting Requirements

5.10.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the source with the permit requirements as follows within 30 days unless a specific unit has a different reporting requirement, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. There are also reporting requirements for unit specific emission units set forth in Section 7 of this permit.

5.10.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information, including HAP emissions, for the previous calendar year.

5.11 Source-Wide Operational Flexibility/Anticipated Operating Scenarios

Changes in feed stock quality (including but not limited to changes in gravity and sulfur content) and changes in catalyst formulation, are not considered operation changes and do not require notification to the Illinois EPA (Section 39.5(12) of the Act). There may be provisions for unit specific operational flexibility set forth in Section 7 of this permit.

5.12 Source-Wide Compliance Procedures

5.12.1 Other Source-Wide Compliance Procedures

a. Process Unit Turnaround and Safety Relief Valves

i. Compliance with the source-wide operational requirements specified in Condition 5.3.12 shall be based on the recordkeeping requirements of Conditions 5.9.3(a).

ii. Compliance with the source-wide operational requirements specified in Condition 5.3.13 and 5.3.14 shall be based on the recordkeeping requirements of Condition 5.9.3(b).

5.13 Special Permit Shield

The Permittee is hereby shielded from any obligation to measure the volume of leaking liquid from a pump or compressor for purposes of determining compliance with 35 IAC 218.142 as Condition 7.8.8(a) and (d) [pumps] and Condition 7.8.5 [compressors] establish appropriate compliance procedures for this rule that do not rely on such measurements.

5.14 Units With No Vents

The Permittee has submitted its application organized by process units, i.e., cracking units, reformers, distillation, alkylation, storage tanks, etc. Process heaters may be located within any of those operations but in Section 7 of this permit these heaters have been grouped together in one section (7.1) because they are subject to similar rules.

Some of the process units do not vent significant emissions to the atmosphere whether controlled or uncontrolled (except for process heaters that may be in the units) but the full units are not classified as insignificant because they are subject to leak detection and repair (LDAR) requirements and the units may have pressure relief valves that

open and vent to a recovery system and/or flare system. There may also be insignificant vents within a unit. For instance, the cokers are opened for a brief period at the end of each cycle. These are listed in Section 3 of this permit. The following systems meet the criteria of no open vents:

Unit No.	Description
102	FCC Gasoline Hydrotreater-ISAL/SHU
103	LSR Hydrotreater
104	ISOM
106-108	Coker 2 Complex
111	Crude Distillation
113	Coker 1
114	Naphtha Hydrotreater
115	Light Distillate Hydrotreater
118	Aliphatic Solvents
122	UDEX
125	Diesel Distillate Hydrotreater
212	Unsaturated Gas Plant
217	Saturated Gas Plant

6.0 CONDITIONS FOR EMISSIONS CONTROL PROGRAMS

6.1 Emissions Reduction Market System (ERMS)

6.1.1 Description of ERMS

The ERMS is a “cap and trade” market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the CAA.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold “allotment trading units” (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources’ CAAPP permits. These allotments are established from historical VOM emissions or “baseline emissions” lowered to provide the emissions reductions from stationary sources required for reasonable further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account’s balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources’ transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction Generator or an Intersector Transaction (35 IAC 205.500 and 35 IAC 205.510). During the reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the “Alternative Compliance Market Account” (ACMA) (35 IAC 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 IAC 205.630).

6.1.2 Applicability

This source is considered a “participating source” for purposes of the ERMS, 35 IAC Part 205.

6.1.3 Obligation to Hold Allotment Trading Units (ATUs)

a. Pursuant to 35 IAC 205.150(c)(1) and 35 IAC 205.720, and as further addressed by Condition 6.1.8, as of December 31 of each year, this source shall hold ATUs in its account in an amount not less than the ATU equivalent of its VOM emissions during the preceding seasonal allotment period (May 1 - September 30), not including VOM emissions from the following, or the source shall be subject to "emissions excursion compensation," as described in Condition 6.1.5.

   i. VOM emissions from insignificant emission units and activities as identified in Section 3 of this permit, in accordance with 35 IAC 205.220;

   ii. Excess VOM emissions associated with startup, malfunction, or breakdown of an emission unit as authorized in Section 7.0 of this permit, in accordance with 35 IAC 205.225;

   iii. Excess VOM emissions to the extent allowed by a Variance, Consent Order, or Compliance Schedule, in accordance with 35 IAC 205.320(e)(3);

   iv. Excess VOM emissions that are a consequence of an emergency as approved by the Illinois EPA, pursuant to 35 IAC 205.750; and

   v. VOM emissions from certain new and modified emission units as addressed by Condition 6.1.8(b), if applicable, in accordance with 35 IAC 205.320(f).

b. Notwithstanding the above condition, in accordance with 35 IAC 205.150(c)(2), if a source commences operation of a major modification, pursuant to 35 IAC Part 203, the source shall hold ATUs in an amount not less than 1.3 times its seasonal VOM emissions attributable to such major modification during the seasonal allotment period, determined in accordance with the construction permit for such major modification or applicable provisions in Section 7.0 of this permit.

6.1.4 Market Transactions

a. The source shall apply to the Illinois EPA for and obtain authorization for a Transaction Account prior to conducting any market transactions, as specified at 35 IAC 205.610(a).

b. The Permittee shall promptly submit to the Illinois EPA any revisions to the information submitted for its Transaction Account, pursuant to 35 IAC 205.610(b).

c. The source shall have at least one account officer designated for its Transaction Account, pursuant to 35 IAC 205.620(a).

d. Any transfer of ATUs to or from the source from another source or general participant must be authorized by a qualified Account Officer designated by the source and approved by the Illinois EPA, in accordance with 35 IAC 205.620, and the transfer must be submitted to the Illinois EPA for entry into the Transaction Account database.

6.1.5 Emissions Excursion Compensation

Pursuant to 35 IAC 205.720, if the source fails to hold ATUs in accordance with Condition 6.1.3, it shall provide emissions excursion compensation in accordance with the following:

a. Upon receipt of an Excursion Compensation Notice issued by the Illinois EPA, the source shall purchase ATUs from the ACMA in the amount specified by the notice, as follows:

   i. The purchase of ATUs shall be in an amount equivalent to 1.2 times the emissions excursion; or

   ii. If the source had an emissions excursion for the seasonal allotment period immediately before the period for the present emissions excursion, the source shall purchase ATUs in an amount equivalent to 1.5 times the emissions excursion.

b. If requested in accordance with paragraph (c) below or in the event that the ACMA balance is not adequate to cover the total emissions excursion amount, the Illinois EPA will deduct ATUs equivalent to the specified amount or any remaining portion thereof from the ATUs to be issued to the source for the next seasonal allotment period.

c. Pursuant to 35 IAC 205.720(c), within 15 days after receipt of an Excursion Compensation Notice, the owner or operator may request that ATUs equivalent to the amount specified be deducted from the source’s next seasonal allotment by the Illinois EPA, rather than purchased from the ACMA.

6.1.6 Quantification of Seasonal VOM Emissions

a. The methods and procedures specified in Sections 5 and 7 of this permit for determining VOM emissions and compliance with VOM emission limitations shall be used for determining seasonal VOM emissions for purposes of the ERMS, with the following exceptions [35 IAC 205.315(b)]:

   No exceptions

b. The Permittee shall report emergency conditions at the source to the Illinois EPA, in accordance with 35 IAC 205.750, if the Permittee intends to deduct VOM emissions in excess of the technology-based emission rates normally achieved that are attributable to the emergency from the source's seasonal VOM emissions for purposes of the ERMS. These reports shall include the information specified by 35 IAC 205.750(a), and shall be submitted in accordance with the following:

i. An initial emergency conditions report within two days after the time when such excess emissions occurred due to the emergency; and

ii. A final emergency conditions report, if needed to supplement the initial report, within 10 days after the conclusion of the emergency.

6.1.7 Annual Account Reporting

a. For each year in which the source is operational, the Permittee shall submit, as a component of its Annual Emissions Report, seasonal VOM emissions information to the Illinois EPA for the seasonal allotment period. This report shall include the following information [35 IAC 205.300]:

i. Actual seasonal emissions of VOM from the source;

ii. A description of the methods and practices used to determine VOM emissions, as required by this permit, including any supporting documentation and calculations;

iii. A detailed description of any monitoring methods that differ from the methods specified in this permit, as provided in 35 IAC 205.337;

iv. If a source has experienced an emergency, as provided in 35 IAC 205.750, the report shall reference the associated emergency conditions report that has been approved by the Illinois EPA;

v. If a source's baseline emissions have been adjusted due to a Variance, Consent Order, or CAAPP permit Compliance Schedule, as provided for in 35 IAC 205.320(e)(3), the report shall provide documentation quantifying the excess VOM emissions during the season that were allowed by the Variance, Consent Order, or Compliance Schedule, in accordance with 35 IAC 205.320(e)(3); and

vi. If a source is operating a new or modified emission unit for which three years of operational data is not

yet available, as specified in 35 IAC 205.320(f), the report shall specify seasonal VOM emissions attributable to the new emission unit or the modification of the emission unit.

b. This report shall be submitted by November 30 of each year, for the preceding seasonal allotment period.

6.1.8 Allotment of ATUs to the Source

a. i. The allotment of ATUs to this source is 2081 ATUs per seasonal allotment period.

ii. This allotment of ATUs reflects the Illinois EPA's determination that the source's baseline emissions were 208.5 tons per season.

A. This determination includes the use of 1995 and 1996 as baseline seasons, plus some units that were issued construction permits prior to January 1, 1998 and for which three years of emission data has now become available.

iii. The source's allotment reflects 88% of the baseline emissions (12% reduction), except for the VOM emissions from specific emission units excluded from such reduction, pursuant to 35 IAC 205.405, including units complying with MACT or using BAT, as identified in Condition 6.1.10 of this permit.

iv. ATUs will be issued to the source's Transaction Account by the Illinois EPA annually. These ATUs will be valid for the seasonal allotment period during issuance and, if not retired in this season, the next seasonal allotment period.

v. Condition 6.1.3(a) becomes effective beginning in the seasonal allotment period during the initial issuance of ATUs by the Illinois EPA into the Transaction Account for the source.

b. Contingent Allotments for New or Modified Emission Units

None

c. Notwithstanding the above, part or all of the above ATUs will not be issued to the source in circumstances as set forth in 35 IAC Part 205, including:

i. Transfer of ATUs by the source to another participant or the ACMA, in accordance with 35 IAC 205.630;

ii. Deduction of ATUs as a consequence of emissions excursion compensation, in accordance with 35 IAC 205.720; and

iii. Transfer of ATUs to the ACMA, as a consequence of shutdown of the source, in accordance with 35 IAC 205.410.

6.1.9 Recordkeeping for ERMS

The Permittee shall maintain copies of the following documents as its Compliance Master File for purposes of the ERMS [35 IAC 205.700(a)]:

a. Seasonal component of the Annual Emissions Report;

b. Information on actual VOM emissions, as specified in detail in Sections 5 and 7 of this permit and Condition 6.1.6(a); and

c. Any transfer agreements for the purchase or sale of ATUs and other documentation associated with the transfer of ATUs.

6.1.10 Exclusions from Further Reductions

a. VOM emissions from the following emission units shall be excluded from the VOM emissions reductions requirements specified in 35 IAC 205.400(c) and (e) as long as such emission units continue to satisfy the following [35 IAC 205.405(a)]:

i. Emission units that comply with any NESHAP or MACT standard promulgated pursuant to the CAA;

ii. Direct combustion emission units designed and used for comfort heating purposes, fuel combustion emission units, and internal combustion engines; and

iii. An emission unit for which a LAER demonstration has been approved by the Illinois EPA on or after November 15, 1990.

b. The source has demonstrated in its ERMS application and the Illinois EPA has determined that the following emission units qualify for exclusion from further reductions because they meet the criteria as indicated above [35 IAC 205.405(a) and (c)]:

i. Fuel Combustion Units:

Needle Coker Heaters, 106 B-1, 107 B-21, 108 B-41, 108 B-42, 109 B-62, 109 F-67; Crude Unit Heaters, 111 B 1A, 111 B-1B, 111 B-2; FCC Fuel Combustion, 112,

FCCU Chiller Generator; Coker Heaters, 113 B-1, 113 B 2, 113 B-3; Hydrotreater Heaters, 103B-1, 114 B-1, 114 B-2, 114 B-3, 115 B-1, 115 B-2, 116 B-1, 116 B-2, 116 B-3, 116 B-4; UNISAR Heaters, 122 B-1, 122 B-2; CRU No. 1 Heaters, 123 B-1, 123 B-2, 123 B-3, 123 B-4, 123 B-5; CRU No. 2 Heaters, 125 B-1, 125 B-2; Other Boilers/Heaters, CO-Boiler, Aux. Boiler, No. 19 Boiler;

ii. Units subject to MACT:

Barge Terminal; Fuels Loading, Solvent Truck Loading, Solvent Tank Car Loading, Unit 844 Flares C-1 through C-5; Unit 430, North Plant OWS and WWTTP; Remote Reservoir Batch Cold Solvent Cleaning; Fugitive Leaks; North Plant Cooling Tower 431E-2; Tank Nos. as follows: 331TK-004, 331TK-050, 331TK-092, 331TK-103, 331TK-106, 331TK-107, 331TK-108, 331TK-109, 331TK-110, 331TK-111, 331TK-112, 331TK-114, 331TK-200, 331TK-201, 331TK-202, 331TK-203, 331TK-204, 331TK-205, 331TK-206, 331TK-207, 331TK-208, 331TK-209, 331TK-211, 331TK-250, 331TK-251, 331TK-252, 331TK-300, 331TK-301, 331TK-302, 331TK-303, 331TK-304, 331TK-305, 331TK-306, 331TK-307, 331TK-308, 331TK-309, 331TK-310, 331TK-311, 331TK-312, 331TK-401, 331TK-402, 331TK-403, 331TK-404, 331TK-405, 331TK-406, 331TK-407, 331TK-408, 331TK-409, 331TK-410, 331TK-411, 331TK-412, 331TK-414, 331TK-416, 331TK-417, 331TK-418, 331TK-419, 331TK-420, 331TK-421, 331TK-422, 331TK-425, 331TK-426, 331TK-428, 331TK-429, 331TK-433, 331TK-434, 331TK-435, 331TK-436, 331TK-437, 331TK-439, 331TK-440, 331TK-480, 331TK-481, 331TK-482, 331TK-483, 331TK-484, 331TK-485, 331TK-486, 331TK-487, 331TK-501, 331TK-502, 331TK-503, 331TK-504, 331TK-505, 331TK-506, 331TK-507, 331TK-508, 331TK-509, 331TK-510, 331TK-511, 331TK-512, 331TK-513, 331TK-514, 331TK-515, 331TK-516, 331TK-517, 331TK-518, 331TK-519, 331TK-604, 331TK-605, 331TK-606, 331TK-607, 331TK-608, 331TK-609, 331TK-610, 331TK-611, 331TK-612, 331TK-613, 331TK-614, 331TK-615, 331TK-616, 331TK-617, 113TK-401

c. VOM emissions from emission units using BAT for controlling VOM emissions shall not be subject to the VOM emissions reductions requirement specified in 35 IAC 205.400(c) or (e) as long as such emission unit continues to use such BAT [35 IAC 205.405(b)].

The source has demonstrated in its ERMS application and the Illinois EPA has determined that the following emission units qualify for exclusion from further reductions because

these emission units use BAT for controlling VOM emissions as indicated above [35 IAC 205.405(b) and (c)]:

Cooling Towers (420E-13), 420-E7 and 421E-3); Sulfur Recovery Trains (119A-train, 119B-train, 121C-train, 121D-train)

6.2 NO_x Trading Program

6.2.1 Description of NO_x Trading Program

The NO_x Trading Program is a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget to help contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by the program, as required by Section 126 of the CAA. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

Emission units that are subject to the NO_x Trading Program are referred to as "budget units." Sources that have one or more budget unit subject to the NO_x Trading Program are referred to as budget sources.

The NO_x Trading Program controls NO_x emissions from budget units during a seasonal control period from May 1 through September 30 of each year, when weather conditions are conducive to formation of ozone in the ambient air. (In 2004, the first year that the NO_x Trading Program is in effect, the control period will be May 31 through September 30.) By November 30 of each year, the allowance transfer deadline, each budget source must hold "NO_x allowances" for the actual NO_x emissions of its budget units during the preceding control period. The USEPA will then retire NO_x allowances in the source's accounts in amounts equivalent to its seasonal emissions. If a source does not have sufficient allowances in its accounts, USEPA would subtract allowances from the source's future allocation for the next control period and impose other penalties as appropriate. Stringent monitoring procedures developed by USEPA apply to budget units to assure that actual emissions of NO_x emissions are accurately determined.

The number of NO_x allowances available for budget sources is set by the overall budget for NO_x emissions established by USEPA. This budget requires a substantial reduction in NO_x emissions from historical levels as necessary to meet air quality goals. In Illinois, separate rules have been established for the budget units that are electrical generating units (EGU) and for large units at manufacturing plants and institutions (non EGU), like the boilers at this source. Under these rules, the allocation or share of the NO_x allowances for non-EGU is set in an amount

established by rule [35 IAC Part 217, Appendix E]. New budget units, for which limited operating data may be available, may obtain NO_x allowances from the new source set-aside (NSSA), a portion of the overall budget reserved for new budget units.

In addition to directly receiving or purchasing NO_x allowances as described above, budget sources may transfer NO_x allowances from one of their units to another. They may also purchase allowances in the marketplace from other sources that are willing to sell some of the allowances that they have received. Each budget source must designate an account representative to handle all its allowance transactions. The USEPA, in a central national system, will maintain allowance accounts and record transfer of allowances among accounts.

The ability of sources to transfer allowances will serve to minimize the costs of reducing NO_x emissions from budget units to comply with the overall NO_x budget. In particular, the NO_x emissions of budget units that may be most economically controlled will be targeted by sources for further control of emissions. This will result in a surplus of NO_x allowances from those units that can be transferred to other units at which it is more difficult to control NO_x emissions. Experience with reduction of sulfur dioxide emissions under the federal Acid Rain program has shown that this type of trading program not only achieves regional emission reductions in a more cost-effective manner but also results in greater overall reductions than application of traditional emission standards to individual emission units.

The USEPA developed the plan for the NO_x Trading Program with assistance from affected states. Illinois' rules for the NO_x Trading Program are located at 35 IAC Part 217, Subpart U and W, for non-EGUs and EGUs, respectively. These rules have been approved by the USEPA. These rules provide for interstate trading of NO_x allowances, as mandated by Section 9.9 of the Act. Accordingly, these rules refer to and rely upon federal rules at 40 CFR Part 96, which have been developed by USEPA for certain aspects of the NO_x Trading Program, and which an individual state must follow to allow for interstate trading of allowances.

Note: This narrative description of the NO_x Trading Program is for informational purposes only and is not enforceable.

6.2.2 Applicability

a. The following emission units are budget units for purposes of Illinois' NO_x Trading Program. Accordingly, this source is a budget source and the Permittee is the owner or operator of a budget source and budget units. In this section of this permit, these emission units are addressed as budget units.

b. This Permit does not provide “low-emitter status” for the above emission units pursuant to 35 IAC 217.472.

6.2.3 General Provisions of the NO_x Trading Program

a. This source and the budget units at this source shall comply with all applicable requirements of Illinois’ NO_x Trading Program, i.e., 35 IAC Part 217, Subpart U, and 40 CFR Part 96 (excluding 40 CFR 96.4(b) and 96.55(c), and excluding 40 CFR 96, Subparts C, E and I), pursuant to 35 IAC 217.456(a) and 217.456(f)(2).

b. Any provision of the NO_x Trading Program that applies to a budget source (including any provision applicable to the account representative of a budget source) shall also apply to the owner and operator of such budget sources and to the owner and operator of each budget unit at the source, pursuant to 35 IAC 217.456(f)(3).

c. Any provision of the NO_x Trading Program that applies to a budget unit EGU (including any provision applicable to the account representative of a budget unit) shall also apply to the owner and operator of such budget unit. Except with regard to requirements applicable to budget units with a common stack under 40 CFR 96, Subpart H, the owner and operator and the account representative of one budget unit shall not be liable for any violation by any other budget unit of which they are not an owner or operator or the account representative, pursuant to 35 IAC 217.456(f)(4).

6.2.4 Requirements for NO_x Allowances

a. Beginning in 2004, by November 30 of each year, the allowance transfer deadline, the account representative of each budget unit at this source must hold allowances available for compliance deductions under 40 CFR 96.54 in the budget unit’s compliance account or the source’s overdraft account in an amount that shall not be less than the budget unit’s total NO_x emissions for the preceding control period (rounded to the nearest whole ton), as determined in accordance with applicable monitoring requirements, plus any number of allowances necessary to account for actual utilization (e.g., for testing, start-up, malfunction, and shut down) under 40 CFR 96.42(e) for the control period, pursuant to 35 IAC 217.456(d)(1). For purposes of this requirement, an allowance may not be utilized for a control period in a year prior to the year for which the allowance is allocated, pursuant to 35 IAC 217.456(d)(4).

b. The account representative of a budget unit that has excess emissions in any control period, i.e., NO_x emissions in

excess of the number of NO_x allowances held as provided above, shall surrender allowances as required for deduction under 40 CFR 96.54(d)(1), pursuant to 35 IAC 217.456(f)(5). In addition, the owner or operator of a budget unit that has excess emissions shall pay any fine, penalty, or assessment, or comply with any other remedy imposed under 40 CFR 96.54(d)(3) and the Act, pursuant to 35 IAC 217.456(f)(6). Each ton of NO_x emitted in excess of the number of NO_x allowances held as provided above for each budget unit for each control period shall constitute a separate violation of 35 IAC Part 217 and the Act, pursuant to 35 IAC 217.456(d)(3).

c. An allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program is a limited authorization to emit one ton of NO_x in accordance with the NO_x Trading Program. As explained by 35 IAC 217.456(d)(5), no provisions of the NO_x Trading Program, the budget permit application, the budget permit, or a retired unit exemption under 40 CFR 96.5 and no provision of law shall be construed to limit the authority of the United States or the State of Illinois to terminate or limit this authorization. As further explained by 35 IAC 217.456(d)(6), an allowance allocated by the Illinois EPA or USEPA under the NO_x Trading Program does not constitute a property right. As provided by 35 IAC 217.456(d)(2), allowances shall be held in, deducted from, or transferred among allowance accounts in accordance with 35 IAC Part 217, Subpart U, and 40 CFR 96, Subparts F and G.

6.2.5 Monitoring Requirements for Budget Units

a. The Permittee shall comply with the monitoring requirements of 40 CFR Part 96, Subpart H, for the budget unit and the compliance of the budget unit with the emission limitation under 6.2.4(a) shall be determined by the emission measurements recorded and reported in accordance with 40 CFR 96, Subpart H, pursuant to 35 IAC 217.456(c)(1) and (c)(2).

b. The account representative for the source and the budget unit at the source shall comply with those sections of the monitoring requirements of 40 CFR 96, Subpart H, applicable to an account representative, pursuant to 35 IAC 217.456(c)(1).

Note: Pursuant to 40 CFR 96.70(b), existing budget units are to begin complying with applicable monitoring requirements of 40 CFR Part 96 at least one year in advance of the start of the first control period governed by the NO_x Trading Program.

c. The monitoring currently performed for the budget unit identified in Condition 6.2.2(a) is in accordance with the

budget source's monitoring plan, which relies upon the low mass emissions accepted methodology of 40 CFR 75.19, has been deemed acceptable for meeting the requirements of 40 CFR Subpart H and 35 IAC 217.456(c)(1).

6.2.6 Recordkeeping Requirements for Budget Units

Unless otherwise provided below, the Permittee shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This 5-year period may be extended for cause at any time prior to the end of the 5 years, in writing by the Illinois EPA or the USEPA.

a. The account certificate of representation of the account representative for the source and each budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 40 CFR 96.13, as provided by 35 IAC 217.456(e)(1)(A). These certificates and documents must be retained on site at the source for at least 5-years after they are superseded because of the submission of a new account certificate of representation changing the account representative.

b. All emissions monitoring information, in accordance with 40 CFR 96, Subpart H, (provided that to the extent that 40 CFR 96, Subpart H, provides for a 3-year period for retaining records, the 3-year period shall apply), pursuant to 35 IAC 217.456(e)(1)(B).

c. Copies of all reports, compliance certifications, and other submissions and all records made or required under the NO_x Trading Program or documents necessary to demonstrate compliance with requirements of the NO_x Trading Program, pursuant to 35 IAC 217.456(e)(1)(C).

d. Copies of all documents used to complete a budget permit application and any other submission under the NO_x Trading Program, pursuant to 35 IAC 217.456(e)(1)(D).

6.2.7 Reporting Requirements for Budget Units

a. The account representative for this source and each budget unit at this source shall submit to the Illinois EPA and USEPA the reports and compliance certifications required under the NO_x Trading Program, including those under 40 CFR 96, Subparts D and H, and 35 IAC 217.474, pursuant to 35 IAC 217.456(e)(2).

b. Notwithstanding the provisions for CAAPP permits, these submittals need only be signed by the designated representative, who may serve in place of the responsible official for this purpose, as provided by Section 39.5(1)

of the Act, and submittals to the Illinois EPA need only be made to the Illinois EPA, Air Compliance Section.

6.2.8 Allocation of NO_x Allowances to Budget Units

a. As the budget units identified in Condition 6.2.2(a) are "existing" units listed in 35 IAC Part 217, Appendix E, these units are entitled to NO_x allowances as specified by Appendix E, subject to transfers of allowances from the source made in accordance with 35 IAC 217.462(b). (The portion of Appendix E that applies to the Permittee is provided in Condition 6.2.12.) The number of NO_x allowances actually allocated for these budget units shall be the number of NO_x allowances allocated by the Illinois EPA in accordance with 35 IAC 217.466(a) and issued by USEPA, which may reflect adjustments to the overall allocations to budget units as provided for by 35 IAC 217.460 and 217.462(c).

b. To the extent that NO_x allowances remain in the New Source Set Aside (NSSA) after any allocation for new budget units, the Permittee is also entitled to a pro-rata share of such remaining allowances as provided by 35 IAC 217.466(d).

6.2.9 Eligibility to Obtain NO_x Allowances from the New Source Set-Aside (NSSA)

The Permittee is not eligible to obtain NO_x allowances from the NSSA for the budget units identified in Condition 6.2.2(a), as provided by 35 IAC 217.468, because the units are "existing" budget units.

6.2.10 Eligibility for Early Reduction Credits (ERC)

The Permittee is not eligible to request NO_x allowances for the budget units identified in Condition 6.1.2(a) for any early reductions in NO_x emissions prior to the 2004 control period, as provided by 35 IAC 217.470, because these units are not equipped with continuous emission monitoring systems for NO_x.

a. The Permittee did not request NO_x allowances for the budget units identified in Condition 6.2.2(a) for early reductions in NO_x emissions in the 2001 control period in accordance with 35 IAC 217.470.

b. The Permittee did not request NO_x allowances for the budget units identified in Condition 6.2.2(a) for early reduction in NO_x emissions in the 2002 and 2003 control periods as provided for in 35 IAC 217.470.

6.2.11 Budget Permit Required by the NO_x Trading Program

a. For this source, this segment of the CAAPP Permit, i.e., Section 6.2, is the Budget Permit required by the NO_x

Trading Program and is intended to contain federally enforceable conditions addressing all applicable NO_x Trading Program requirements. This Budget Permit shall be treated as a complete and segregable portion of the source's permit, as provided by 35 IAC 217.458(a)(2).

b. The Permittee and any other owner or operator of this source and each budget unit at the source shall operate the budget units in compliance with this Budget Permit, pursuant to 35 IAC 217.456(b)(2).

c. No provision of this Budget Permit or the associated application shall be construed as exempting or excluding the Permittee, or other owner or operator and, to the extent applicable, the account representative of a budget source or budget unit from compliance with any other regulation or requirement promulgated under the CAA, the Act, the approved State Implementation Plan, or other federally enforceable permit, pursuant to 35 IAC 217.456(g).

d. Upon recordation by USEPA under 40 CFR 96, Subpart F or G, every allocation, transfer, or deduction of an allowance to or from the budget units' compliance accounts or to or from the source's general or overdraft account is deemed to amend automatically and become part of this budget permit, pursuant to 35 IAC 217.456(d)(7). This automatic amendment of this budget permit shall be deemed an operation of law and will not require any further review.

e. No revision of this Budget Permit shall excuse any violation of the requirements of the NO_x Trading Program that occurs prior to the date that the revision to this permit takes effect, pursuant to 35 IAC 217.456(f)(1).

f. The Permittee, or other owner or operator of the source, shall reapply for a Budget Permit for the source as required by 35 IAC Part 217, Subpart U and Section 39.5 of the Act. For purposes of the NO_x Trading Program, the application shall contain the information specified by 35 IAC 217.458(b)(2).

6.2.12 References

35 IAC Part 217 Appendix E - Provisions Applicable to the Permittee

Company I.D. No./Name	Unit Designation	Unit Description	Budget Allocation	Budget Allocation Less 3% NSSA
197090AAI	72110253037	Boiler	23	22
CITGO Petroleum Corporation		430 B-1		
Company Total Allocation:			23	22

6.3 Acid Rain

Not Applicable

7.0 UNIT SPECIFIC CONDITIONS FOR SPECIFIC EMISSION UNITS

7.1 Unit: Process Heaters and Boilers

7.1.1 Description

Process heaters are used to heat the petroleum material being processed. The heaters use as a fuel, either alone or in combination fuel gas generated on site or purchased natural gas. There are also some boilers that produce steam for process heat. The boilers burn the same gaseous fuels as the process heaters. The "CO" (carbon monoxide) boiler is also considered to be pollution control equipment for the FCCU. See Section 7.3.

7.1.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing[a] Rate (mmBtu/hr)	Emission Control Equipment[b]
01	102	FCCU Hydrotreater ISAL Reactor 102B-2	48.5	Ultra Low NO_x Burners
02	103	LSR Hydrotreater Feed Heater 103B-1	19.3	Ultra Low NO_x Burners
03	104	Absorber Feed Heater 104B-20	24.6	None
04	104	Hydrogen Recycle Heater 104B-21	24.6	None
05	106	Vacuum Heater 106B-1	32.45	Low NO_x Burners
06	107	Recycle Gas Heater 107B-21	13.97	Low NO_x Burners
07	108	Process Heater 108B-41	44.0	Low NO_x Burners
08	108	Steam Superheater 108B-42	9.13	Low NO_x Burners
09	109	Steam HC Reformer Heater 109B-62	113.3	Low NO_x Burners
10	111	Atmospheric Heater 111B-1A	376.5	Ultra Low NO_x Burners
11	111	Atmospheric Heater 111B-1B	376.5	Ultra Low NO_x Burners
12	111	Vacuum Heater 111B-2	219.8	Ultra Low NO_x Burners
13	112	FCC Air Heater 112B-1	121	None
14	112	CO Boiler 112B-2	347	None
15	113	Coker 1 Heater 113B-1	88.8	Ultra Low NO_x Burners
16	113	Coker 1 Heater 113B-2	88.8	Ultra Low NO_x Burners

Permit Emission Unit Number	Permittee Unit Number	Permittee Equipment Number	Firing[a] Rate (mmBtu/hr)	Emission Control Equipment[b]
17	113	Coker 1 Heater 113B-3	88.8	Low NO_x Burners
18	114	Feed Preheater 114B-1	37.2	None
19	114	Stripper Trim Reboiler 114B-2	22.3	None
20	114	Stripper Reboiler 114B-3	29.8	None
21	115	Feed Heater 115B-1	21.4	None
22	115	Stripper Reboiler 115B-2	25.2	None
23	116	Charge Heater and Stabilizer Reboiler 116B-1	89.8	None
24	116	Interheater and Naphtha Stripper Reboiler 116B-2	84.2	None
25	116	#2 Interheater 116B-3	22.3	None
26	116	Stabilizer Trim Reboiler 116B-4	27.3	None
27	118	Hot Oil Heater 118B-1	93.8	None
28	118	Reactor Charge Heater 118B-51	8.9	None
29	122	ARU (Clay) Tower Furnace 122B-1	6.9	None
30	122	Reactor Charge Heater 122B-2	5.8	None
31[c]	123	Feed Preheater 123B-1	45.6	None
32[c]	123	Feed Preheater 123B-2	121.2	None
33[c]	123	Reheat Furnace 123B-3	55.3	None
34[c]	123	Reheat Furnace 123B-4	37.6	None
35[c]	123	Reheat Furnace 123B-5	42.0	None
36	125	Feed Heater 125B-1	70.0	None
37	125	Stripper Reboiler 125B-2	100.0	None
38	430	Auxiliary Boiler 430B-1	396.0	Low NO_x Burner/ Flue Gas Recirculation
39	431	North Plant Boiler 431B-20	249.0	Ultra Low NO_x Burners

[a] Firing rates listed are for descriptive purposes and are not permit limits unless stated as such in Condition 7.1.6. Firing rates are also on a daily average basis and not design or maximum capability of the unit.

[b] Although listed as control equipment low or ultra-low NO_x burners are more accurately classified as a pollution prevention design feature.

[c] These units are scheduled to shutdown in tandem with revisions to Units 114 and 116. See Condition 7.1.5.

7.1.3 Applicable Provisions and Regulations

a. The “affected process heater or boiler” for the purpose of these unit-specific conditions, is a process heater, boiler, preheater, superheater, reboiler, or furnace that burns gaseous fuel, classified as a fuel combustion emission unit and described in Conditions 7.1.1 and 7.1.2.

b. All of the process heaters and boilers are subject to the Petroleum Refinery NSPS, 40 CFR 60 Subparts A and J and shall not burn any fuel gas that contains H_2S in excess of 0.10 gr/dscf on an average 3-hour rolling basis. (40 CFR 60.104(a)(1) and 60.105(e)(3)(ii)) Based on the NSPS standard conditions and standard conversions, this is equivalent to 161 ppmv (the units the monitor reads). Note that only selected units were previously subject to these NSPS requirements but pursuant to the previously referenced Consent Decree all units are now subject to the NSPS. See also Condition 7.1.3(e) below.

   The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

c. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 10 mmBtu/hr to exceed 200 ppm, corrected to 50 percent excess air (35 IAC 216.121). Due to their firing rates, the following units are excluded from this requirement: 08 (108 B-42), 29 (118 B-51), 30 (122 B-1) and 31 (122 B-2).

d. No person shall cause or allow the emission of nitrogen oxides into the atmosphere in any one hour period from any existing fuel combustion emission source with an actual heat input equal to or greater than 250 mmBtu/hr, located in the Chicago major metropolitan areas when firing gaseous fuel to exceed 0.3 lbs/mmBtu of actual heat input. Due to their firing rates, this provision only applies to permit Emission Unit Nos. 9 (111B-1A), 10 (111B-1B), 14 (112B-2), and 37 (430B-1). (35 IAC 217.141)

e. Consent Decree Requirements

Section F of the Consent Decree between Citgo and the USEPA and several other co-plaintiffs, including the Illinois EPA, requires reductions in NO_x and SO_2 from various large heaters and boilers. Below is a brief summary of those requirements. (Paragraphs 52-65 of Consent Decree H-04-3883)

i. Affected Units

The affected heaters and boilers for the purpose of the Consent Decree are units with a firing rate over 40 mmBtu/hr and listed in Appendix C of the Consent Decree. The baseline for the emissions reductions specified later are in a revised Appendix C that was previously submitted to the USEPA by February 28, 2005 for review and comment. The baseline years for the Lemont refinery are the years 1999 and 2000.

ii. Qualifying Controls

Qualifying controls that may be used to achieve the required reductions are listed in Paragraph 53 of the Consent Decree. The ultra-low NO_x burners the Lemont Refinery is using are classified as qualifying controls. The Permittee has the discretion to choose which affected heaters and boilers on which the controls will be installed. The method to calculate the reduction is described in Paragraph 54. A 365-day rolling average may be used to calculate the reduction for heaters and boilers that use a CEMS or PEMS (predictive emissions monitoring system) to monitor compliance.

iii. Control Plan

Prior to March 31, 2005 the Permittee submitted a “Control Plan” to the USEPA for review and comment as required by the Consent Decree. Annual updates to the Control Plan covering the previous calendar year must be submitted until termination of the Consent Decree or until all of the reductions required are achieved. The Control Plan is for information purposes and may not be used for permit conditions unless also placed in a construction permit. (Paragraph 56)

iv. Reduction Goals

A. Corporate Goals for Reduction

By June 30, 2011 the Permittee shall use qualifying controls to reduce emissions of NO_x by 50% of the baseline. By September 30, 2008

at least two-thirds of the 50% goal shall be achieved. Both of these are corporate-wide goals and are not enforceable by the Illinois EPA.

B. Lemont Refinery Goals

Qualifying controls shall be installed on at least 30% of the total heat input capacity at the Lemont refinery. Any qualifying controls may be used even if installed prior to the Consent Decree.

v. Monitoring

A. For heaters and boilers with qualifying controls and with a heat capacity greater than 150 mmBtu/hr(HHV) a Continuous Emission Monitoring System (CEMS) shall be installed for measuring the NO_x emission rate.

B. For heaters and boilers with qualifying controls and with a heat capacity between 100 and 150 mmBtu/hr a CEMS or Predictive Emission Monitoring System (PEMS) shall be installed for measuring the NO_x emission rate.

C. For heaters and boilers with qualifying controls and with a heat capacity of less than 100 mmBtu/hr, an initial performance test shall be conducted.

Note that compliance with the Consent Decree requirement for heaters and boilers is based on annual NO_x emissions and not on hourly, daily or monthly emissions.

D. For units that have been fitted with qualifying controls and are required to have a CEMS, the CEMS shall be operating by September 30, 2005 (Paragraph 59). The requirements for a CEMS are listed in Paragraph 60.

vi. SO_2 Reductions

All of the heaters and boilers at the Lemont site, not just those affected by the previous NO_x requirements, are subject to the NSPS Subparts A and J regardless of the date of construction. The source is eligible for an Alternative Monitoring Plan.

f. There are no provisions for operation of the heaters or boilers during malfunction or breakdown in this section. However, the CO boiler (112B-2) is also a control device

for the FCCU and operation of the FCCU during malfunction or breakdown of the CO boiler is addressed in Section 7.3.3 of this permit.

7.1.4 Non-Applicability of Regulations of Concern

a. The refinery NESHAP (40 CFR 63 Subpart CC) only applies to certain "petroleum refining process units." The emission units listed in 7.1.2 are fuel combustion devices and do not qualify as petroleum refining process units.

b. 35 IAC 217.121 limits NO_x emissions from new fuel combustion emission units with a firing rate equal to or greater than 250 mmBtu/hr. None of the new units listed in Condition 7.1.2 have a firing rate greater than 250 mmBtu/hr. For the purposes of this rule, new is defined as constructed after April 14, 1972.

c. The rule for SO_2 limits from a combination of fuels (35 IAC 214.162) does not apply since all of these units burn gaseous fuels only and not liquid or solid fuels.

d. The affected process heaters are not subject to 35 IAC 214.301 because the process heaters and boilers are not process emission sources, but rather fuel combustion emission units.

e. The affected process heaters and boilers are not subject to 35 IAC 212 Subpart E because those rules address PM emissions from liquid and solid fuel firing and these heaters and boilers are fired on gaseous fuel exclusively.

f. i. The affected boiler 431B-20, although subject to 40 CFR 60 Subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units, not being subject to the NSPS Db sulfur dioxide emission limitations because it is subject to NSPS Subpart J [40 CFR 60.40b(c)].

ii. The affected boiler 431B-20, although subject to 40 CFR 60 Subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units, not being subject to the NSPS Db particulate matter emission limitations, because it does not fire coal, oil, wood, municipal-type solid waste, or fuel mixtures containing those fuels [40 CFR 60.43b(a), (b), (c), (d)].

iii. The affected boiler 431B-20, although subject to 40 CFR 60 Subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units, not being subject to the NSPS Db nitrogen oxide emission limitations because it does not fire coal, oil, or natural gas [40 CFR 60.44b(a)]. The refinery fuel

gas combusted in the boiler does not meet the NSPS Db definition of natural gas [40 CFR 60.41b], as the fuel gas is neither naturally occurring nor found in underground geological formations.

g. The affected heaters 111B-1A and 111B-1B (crude atmospheric heaters) not being subject to 40 CFR 60 Subpart Db, NSPS for Industrial-Commercial-Institutional Steam Generating Units because the affected heaters 111B-1A and 111B-1B (crude atmospheric heaters) are not steam generating units but rather process heaters.

h. The affected process heaters and boilers are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected process heaters and boilers are subject to an emission limitation or standard for which this CAAPP permit specifies a continuous compliance determination method, pursuant to 40 CFR 64.2(b)(1)(vi). The continuous compliance determination method is a specification of NSPS Subpart J.

7.1.5 Control Requirements and Work Practices

a. As specified in Condition 7.1.2, NO_x emissions from certain affected process heaters and boilers are reduced through low NO_x burner technology. This is an emission prevention method rather than post-formation emission reduction method. Condition 7.1.6 may include an emission rate as well as total pounds of NO_x emitted.

b. The low-NO_x or ultra low-NO_x burners on heaters identified as having them in Condition 7.1.2 shall be operated and maintained according to the manufacturer's specifications so as to achieve the reduced NO_x emission rate.

c. No fuel oil shall be burned in any refinery combustion unit, except during periods of natural gas curtailment. This does not limit the use of torch oil during FCCU startups.

7.1.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected process heater or boiler are subject to the following:

a. The firing rate of the affected heaters shall not exceed the following [T1]:

Heater Identification	Firing Rate mmBtu/hr Daily Average	Limit from Construction Permit No.
ISOM Heater (104B-20)	30.2	85090012

Heater Identification	Firing Rate mmBtu/hr Daily Average	Limit from Construction Permit No.
ISOM Heater (104B-21)	24.6	85090012
Coker 2 Vacuum (106B-1)[a]	32.45	95050127
Crude Vacuum (111B-2)	219.8	00010016
ISAL Reactor (102B-2)	48.5	01030085
LSR Hydrotreater (103B-1)[b]	19.3	01030085
North Plant Boiler (431B-20)	249.0	01070039
Crude Atmospheric (111B-1A)	376.5	01070060
Crude Atmospheric (111B-1B)	376.5	01070060
Coker 1 (113B-1)	88.8	01070060
Coker 1 (113B-2)	88.8	01070060
Coker 1 (113B-3)	88.8	01070060
Feed Heater (125B-1) and Stripper Re-Boiler (125B-2) Combined	140.0	04090068

[a] The firing rate for 106B-1 was revised in the original CAAPP permit from the limit in Construction Permit 95050127 to reflect higher heating value basis. Emission limits remain unchanged.

[b] The firing rate limit for 103B-1, established in Permit 01030085, supercedes the limit established in Permit 95030064

b. Emissions from the affected heaters as indicated shall not exceed the following limits [T1]:

	E M I S S I O N S (Tons/Year) Heater No.		
Pollutant	106B-1	104B-20	104B-21
NO_x	16.80	13.20	11.0
SO_2	4.09	2.9	2.6
CO	5.32	2.2	1.8
PM	0.46	1.8	1.8
VOM	0.43	0.4	1.3
Firing Rate (mmBtu/hr)	32.45		24.6
NO_x Rate (lb/mmBtu)	0.13	N/A	N/A
Construction Permit	95040127	85090012	85090012

c. i. Emissions of NO_x from the following five process heaters combined shall not exceed 128.97 tons/yr: 108B-41, 109B-62, 106B-1, 107B-21 and 108B-42. [T1R]

ii. In addition NO_x emissions rates shall not exceed the following: 108B-41 and 109B-62, 0.16 lb/mmBtu; 106B-1, 107B-21 and 108B-42, 0.13 lb/mmBtu. These five heaters shall be equipped with analyzers to monitor excess air. These requirements represent the application of Best Available Control Technology as required by Section 165 of the Clean Air Act. [T1]

d. The limits in Condition 7.1.6(a), (b) and (c)(i) are based on the maximum firing rate, continuous operation, and AP-42 emission factors for pollutants not set by the permit (e.g., NO_x or NSPS limit on sulfur content).

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations in Condition 7.1.6(b) were established in Permits 85090012 and 95040127, and those in Condition 7.1.6(c)(ii) were established in Permit 83010013, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

The above limitations in Condition 7.1.6(c) contain revisions to previously issued Construction Permit 83010013. The revisions were approved in the original CAAPP permit. The source had requested these revisions to the units' hours of operation and firing rate and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits contained in Condition 7.1.6(c) continue to ensure that the construction and/or modification addressed in the above construction permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this construction permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the average firing rate and average hours of operation (8,000 hours/year) were used for annual total in the original permit. The Permittee now believes they could operate at near maximum rate and continuously (8,760 hours/year). Since the original limits were established in a PSD permit the modeling performed at the time of originally issuing the PSD permit was reviewed and the Illinois EPA concludes that the impact remains

insignificant at the higher rate. The BACT limit has not been changed. In addition, the firing rate was amended to reflect the higher heating value of the fuel gas. Emission factors are based on higher heating value. [T1]

e. i. Emissions from affected heaters 111B-1A and 111B-1B (crude atmospheric heaters) each shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	5.50	65.95
SO_2	2.97	35.61
CO	1.68	20.15
VOM	0.38	4.45
PM	1.03	12.29
PM_{10}	1.03	12.29

ii. Emissions from affected heaters 113B-1 and 113B-2 (Coker 1 heaters) each shall not exceed the following limits (note that construction permit 01070060 had a limit for 113B-1 but it was superseded by a limit in construction permit 01070039 which was revised after 01070060 was issued and therefore the later limit applies; see Condition 7.1.6(f)(ii):

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	1.68	20.23
SO_2	0.70	8.40
CO	2.67	32.03
VOM	0.18	2.10
PM	0.25	2.90
PM_{10}	0.25	2.90

iii. Emissions from affected heater 113B-3 (Coker 1 heater) shall not exceed the following limits:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	2.77	33.18
SO_2	0.70	8.40
CO	2.67	32.03
VOM	0.18	2.10
PM	0.25	2.90
PM_{10}	0.25	2.90

iv. Compliance with annual limits for i, ii and iii above shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were established in Permit 01070060, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

f. i. Emissions from affected boiler 431B-20 shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	5.91	70.89
SO_2	1.97	23.55
CO	7.49	89.82
VOM	0.49	5.88
PM	0.68	8.13
PM_{10}	0.68	8.13

ii. Emissions from heater 113B-1 shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	1.69	20.23
SO_2	0.72	8.60
CO	2.67	32.03
VOM	0.18	2.10
PM	0.25	2.90
PM_{10}	0.25	2.90

iii. Emissions from heater 111B-2 shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	4.18	50.10
SO_2	1.78	21.30
CO	0.02	0.20
VOM	0.01	0.06
PM/PM_{10}	0.60	7.17

iv. Compliance with annual limits for i, ii and iii above shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were established in Permit 01070039, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

g. i. Emissions from affected heater 102B-2 shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	0.71	8.50
SO_2	0.39	4.70
CO	1.46	17.49
VOM	0.10	1.15
PM/PM_{10}	0.13	1.58

ii. Emissions from affected heater 103B-1 shall not exceed the following limits [T1]:

Pollutant	Emissions (Ton/Mo)	Emissions (Ton/Yr)
NO_x	1.40	8.45
SO_2	0.32	1.87
CO	0.78	4.65
VOM	0.04	0.23
PM/PM_{10}	0.11	0.63

These limits, established in Permit 01030085, supercede the limits established previously in Permit 95030064.

iii. Compliance with annual limits for i and ii above shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were established in Permit 01030085, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

h. i. Monthly emission from the heaters indicated in the table below shall not exceed the following limits [T1]:

Emission Unit	Emissions (Tons/Mo) NO_x	VOM
125B-1 and 125B-2, Combined	6.65	0.06

ii. Annual emissions from the heaters indicated in the table below shall not exceed the following limits. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total [T1].

Emission Unit	Emissions (Tons/Year) NO_x	CO	SO_2	VOM	PM/PM_{10}
125B-1 and 125B-2, Combined	79.72	0.73	12.36	0.61	1.09

iii. The above limitations in (h)(i) and (h)(ii) were established in Permit 04090068, pursuant to 35 IAC part 203 for VOM and 40 CFR 52.21, Prevention of Significant Deterioration (PSD) for other pollutants. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 part 203 and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). [T1]

7.1.7 Testing Requirements

Pursuant to the Consent Decree the Illinois EPA establishes the following requirements for testing of the heaters and boilers between 40 and 100 mmBtu/hr heat capacity. Any unit equipped with new low NO_x burners shall be tested for NO_x emission rate using USEPA Method 7E. If two units are identical only one of them needs to be tested. If a unit was tested with the new low NO_x burners prior to issuance of this permit renewal, for example as required by a construction permit, another test does not have to be performed.

7.1.8 Monitoring Requirements

a. Monitoring requirements pursuant to the Consent Decree were discussed previously in Condition 7.1.3(e)(v). Those requirements are sufficient for NO_x monitoring.

b. Fuel Gas Analysis for Gas Systems that Serve NSPS Heaters

Pursuant to the requirements of the NSPS specified in Condition 7.1.3(b), the Permittee has chosen to monitor and record the fuel gas H_2S concentration rather than SO_2 concentration. The Permittee has also chosen to

continuously monitor at locations that accurately represents the concentration of H_2S in the fuel gas being burned, even the units not subject to NSPS. Any performance evaluation required pursuant to 40 CFR 60.13(c) for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations [40 CFR 60.105(a)(4)].

Note that pursuant to the Consent Decree all of the heaters and boilers that use refinery fuel gas are subject to the NSPS.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for each affected heater or boiler to demonstrate compliance with Conditions 5.6.1, 7.1.3, 7.1.5 and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

a. A continuous record of the H_2S concentration in the fuel gas systems used for the process heaters and boilers subject to NSPS. From this continuous "recording", the Permittee shall calculate a rolling 3-hour average. Only the rolling 3-hour averages are required to be kept for five years. Note that there are 24 three-hour averages per 24-hour period.

b. Total gas burned in all units combined (scf/mo) for each type of fuel (refinery gas and natural gas).

c. Records showing the design firing rate of each unit with backup calculations.

d. Firing rates of the affected heaters and boilers listed in Condition 7.1.6(a) on a daily average basis in order to be able to determine compliance with Condition 7.1.6(a).

e. Any observations of opacity.

f. NO_x, CO, SO_2, PM, and VOM emissions (ton) for individual units or groups of units combined as necessary to determine compliance with Condition 7.1.6, using the compliance procedures in Condition 7.1.12.

7.1.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected heater or boiler with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. For NSPS units as identified in Condition 7.1.2, any exceedance of the concentration of H_2S in the fuel gas above the NSPS allowable level of 0.1 gr/dscf (161 ppmv). Pursuant to 40 CFR 60.105(e)(3)(ii), exceedances are determined using rolling 3-hour periods.

40 CFR 60.107(d), (e) and (f) also discuss NSPS reporting and must be complied with, if applicable.

The above reports for fuel gas H_2S shall be deemed prompt notification of fuel gas H_2S deviations.

ii. Any exceedance of the firing rate allowed by Condition 7.1.6(a).

iii. Any exceedance of the allowable monthly or annual emission limits in Condition 7.1.6(b) to (i).

iv. The applicable requirements of 40 CFR 60.49(b)(a) shall be complied with for Boiler 431B-20.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected heaters and boilers. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.1.12 Compliance Procedures

a. Compliance with Condition 7.1.3(b) is addressed by the continuous H_2S monitoring requirements in Condition 7.1.8(b) and the records required in Condition 7.1.9(a).

b. Compliance with Condition 7.1.3(c) is addressed by the requirements of Condition 7.1.5(b), the AP-42 emission factors and the records required in Condition 7.1.9(f).

c. Compliance with Condition 7.1.3(d) is addressed by the requirements of Condition 7.1.5(b), the firing rate and emission limits in Condition 7.1.6 the testing requirements in Condition 7.1.7(a), the monitoring requirements in Condition 7.1.8(a), the continuous monitoring requirements in Condition 7.1.3(e)(v), and the records required in Condition 7.1.9(f).

d. Compliance with Condition 7.1.6(a) is addressed by the records required in Conditions 7.1.9(c) and (d).

e. Compliance with the NO_x emission limits and calculation of annual emissions shall be determined by CEMS or PEMS as required by Condition 7.1.3(e)(v) as appropriate for units so equipped. For emission units without a CEMS or PEMS the emission rate determined by an emission test may be used. For units without a CEMS, PEMS or emission test, AP-42

factors may be used unless the burner manufacturer specified an emission rate higher than the AP-42 factor, in which case that burner manufacturer rate shall be used as specified in a construction permit. Emission factors for other pollutants from construction permits are also specified. These include the following:

Construction Permit No.	Heater or Boiler Nos.	Emission Rate[a], Lb/mmBtu			
		NO_x	CO	VOM	PM
01070060	111B-1A, 111B-1B	0.04	0.012	0.0027	0.0075
	113B-1, 113B-2	0.052	0.08	0.0054	0.0075
	113B-3	0.0853	0.08	0.0054	0.0075
01070039	431B-20	0.065	0.08	0.0054	0.0075
	113B-1, 111B-2	0.052	0.08	0.0054	0.0075
01030085	102B-2	0.04	0.055	0.0027	0.0075
	103B-1	0.1	0.055	0.0027	0.0075

[a] Unless superseded by a CEMS, PEMS or emission test value for NO_x

f. SO_2 shall be calculated using the monitored H2S content of the gas, the Btu value of the gas, gas usage, and stoichiometric conversion of H2S to SO_2.

g. Emissions (lb/mo) = Gas Usage (mmscf/mo) x Heating Value of Gas (Btu/scf) x Emission Factor (lb/mmBtu)

h. Except for SO_2 emissions and special emission factors for recently constructed units previously listed above, emissions shall be calculated using AP-42 emission factors (Table 1.4-1, 5th Edition, March, 1998) for natural gas boilers. These factors are as follows:

	Emission Factor[a] ($lb/10^6$ scf) Firing Rate	
	Less Than 100 mmBtu/hr	Greater Than 100 mmBtu/hr
NO_x – Standard Burner	100	280
NO_x – Low NO_x Burner	50[b]	140[b]
CO	84[b]	84[b]
PM	7.6	7.6
VOM	5.5	5.5

[a] The Permittee has submitted and may use a list of values that are based on an emission factor in pounds per million Btus. The factors were derived from AP-42 factors with standard conversion from million scf to million Btus, or from unit-specific stack test results. These values may be updated as published factors are revised or as additional stack test results become available, except that for VOM the same factor must be used as was used in determining the ERMS baseline, unless the burners are replaced or

the heater modified since that ERMS baseline was established.

[b] These values do not apply if Condition 7.1.6 requires a different value. The CO value may also be different for those fuel combustion units as some low NO_x burners may have higher CO emissions.

7.2 Unit: Storage Tanks

7.2.1 Description

The Lemont refinery is typical of refineries in that it has many storage tanks. These may contain liquids at standard conditions such as crude oil, gasoline, intermediates, chemicals, diesel and fuel oil or be pressurized tanks for materials that are vapors at standard conditions but become liquefied under pressure. Section 7.2.2, which in turn refers to Attachment 5, identifies various groups. The group description may be broader than standard context. For instance, a “gasoline” tank may contain a material that is not yet consumer-usable but will be blended with other components into a consumer usable gasoline. The group does not necessarily reflect current material in the tank. For instance, a tank that meets the requirements for storing gasoline may currently be storing diesel oil but is listed as a gasoline tank because gasoline could be stored in the tank. Some tanks may even be currently storing materials that do not emit VOM.

The rules that apply to each tank are specified by group letter. Several tanks for materials that are added to gasoline as it is being loaded into trucks, such as ethanol and gasoline additives, are included in Section 7.6 rather than here. Two tanks that store process wastewater will also provide oil-water separation.

7.2.2 List of Emission Units and Air Pollution Control Equipment

See Attachment 5

7.2.3 Applicable Provisions and Regulations

a. The “affected storage tank” for the purpose of these unit-specific conditions, is a tank described in Conditions 7.2.1 and Attachment 5.

b. Group A through E in Attachment 5, except as noted, are subject to the control requirements of 35 IAC 218.122(b) and 40 CFR 63 Subpart CC, which in turn reference the requirements of 40 CFR 63 Subpart G. Certain tanks are designed as HON tanks in Attachment 5. These tanks are subject to 40 CFR 63 Subpart G directly without reference from Subpart CC.

c. Each storage tank subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) is hereby shielded from compliance with 35 IAC 218.121, 123 and 124, except for the requirements of Conditions 7.2.5. This shield is issued to streamline the applicable requirements for the source based on the Illinois EPA’s finding that compliance with 40 CFR 63 Subpart CC assures compliance with 35 IAC 218.121, 123 and 124.

d. For each tank that is not a Petroleum Refinery NESHAP Group 1 tank solely due to HAP content, the Permittee must either comply with 40 CFR 63 Subpart CC, or the requirements of 35 IAC 218.121, 123 and 124 will apply.

e. Neither 40 CFR 63 Subpart CC or 35 IAC 218 Subpart B have any requirements that apply to Groups F and G in Attachment 5, except that if the tank contains over 40,000 gallons and the vapor pressure is over 11.1 psia the material must be stored in a pressurized tank. Group G tanks are all pressurized, even if containing less than 40,000 gallons.

f. The two process water tanks (331TK-485 and 486) are also subject to the alternative standards for oil-water separators in NSPS, 40 CFR 60, Subpart QQQ for VOM emissions from petroleum refinery wastewater systems (40 CFR 60.693-2).

7.2.4 Non-Applicability of Regulations of Concern

a. Except as provided for in the regulations, 35 IAC 218.122(b) requires the use of a permanent submerged loading pipe if the vapor pressure of the liquid in a tank is above 2.5 psia. Since all tanks at the source that hold liquid with a vapor pressure over 2.5 psia have floating roofs, the liquids must enter the tanks below the surface of the liquid.

b. Tanks subject to 40 CFR 63 Subpart CC (40 CFR 63 Subpart G) are not subject to 40 CFR 60 Subpart Kb. Accordingly, because Tanks 331TK-485, 486, and 487 are subject to 40 CFR 63 Subpart CC, they are not subject to the requirements of 40 CFR 60 Subpart Kb.

c. The affected storage tanks are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected storage tanks use a passive control measure, such as a seal, lid, or roof, that is not considered a control device because it acts to prevent the release of pollutants and/or are subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).

d. Affected Tank 331TK-488 is not subject to 40 CFR 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, because the tank is a pressure vessel designed to operate in excess of 204.9 kPa and without emissions to the atmosphere [40 CFR 60.110b(d)]. It is also not subject to 40 CFR 63 Subpart CC, National Emission Standards for Hazardous Air

Pollutants From Petroleum Refineries for the same reason [40 CFR 63.641].

7.2.5 Control Requirements and Work Practices

a. i. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall comply with the requirements of 40 CFR 63.119(c), which requires the use of an external floating roof that is equipped with a primary and secondary seal.

A. The primary seal shall be either a metallic shoe seal or a liquid mounted seal; and

B. The primary seal and secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by Condition 7.2.8 [40 CFR 63.120(c)(a)(iii)]:

ii. All drains (for drainage of rainwater, also know as “stub drains”) in the floating roof deck shall be provided with slotted membrane fabric covers or equivalent covers across at least 90 percent of the area of the opening [35 IAC 218.124(a)(3)];

iii. All openings of the floating roof deck, other than drains, shall be equipped with projections into the tank which remain below the liquid surface at all times except when supported on the roof legs and be equipped with covers, lids, or seals [35 IAC 218.123(b)(3) and 218.124(a)(4)];

iv. Covered external floating roof tanks may comply with the requirements for internal floating roof tanks. See Condition 7.2.5(b).

b. Each affected internal floating roof tank shall comply with the requirements of 40 CFR 63.119(b), which requires the use of an internal floating roof or an external floating roof converted to an internal floating roof by the addition of a fixed roof (cover), either of which is equipped with one of the following:

i. A primary seal that is either a metallic shoe seal or a liquid mounted seal; or

ii. A primary seal and secondary seal that completely cover the annular space between the floating roof and the wall of the storage vessel in a continuous fashion except during the inspections required by

Condition 7.2.8. The primary seal may be vapor-mounted.

c. i. Tank 331TK-480 shall be equipped with an internal floating roof with a mechanical shoe primary seal and a secondary seal.

ii. Tank 331TK-484 shall be equipped with a covered ("domed") external floating roof.

iii. Tank 331TK-488 shall be a pressure tank capable of withstanding the vapor pressure of the stored volatile petroleum liquid, so as to prevent vapor or gas loss to the atmosphere at all times [35 IAC 218.121(a)].

7.2.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected storage tanks are subject to the following:

a. Tanks 331TK-485 and 486 are subject to the following:

Throughput of VOM contaminated water through each tank, vapor pressure of the material stored, and emissions of volatile organic material (VOM) from each process water tank (TK-485 and 486) shall not exceed the following:

Throughput (bbl/yr)	Vapor Pressure (psia)	VOM Emissions (tons/yr)
1,320,000	7.0	1.3

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 91090092, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

b. i. Throughput and emissions of VOM from the tanks identified shall not exceed the following:

Tank No.	Throughput (gal/mo)	Throughput (gal/yr)	VOM Emissions (ton/yr)
331TK-480	2,956,700	35,480,000	2.11
331TK-484	18,812,500	225,750,000	1.84

ii. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

iii. The above limitations were established in Permit 01030085, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

7.2.7 Operating Requirements

a. Each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof shall be operated in compliance with the operating requirements of 40 CFR 63.119(c), (d), and 63.120(b) as follows:

i. The external floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 63.119(c)(3) and (4)]

ii. For primary seals that use a metallic shoe seal, one end of the metallic shoe shall extend into the stored liquid and the other end shall extend a minimum vertical distance of 61 centimeters above the stored liquid surface and there shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 63.120(b)(5)]

iii. The secondary seal shall completely cover the space between the roof edge and the vessel wall except as provided in (v), and there shall be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 63.120(b)(6)]

iv. The accumulated area of gaps between the vessel wall and the primary seal shall not exceed 212 square centimeters per meter of vessel diameter and the width of any portion of any gap shall not exceed 3.81 centimeters. [40 CFR 63.120(b)(3)]

v. The accumulated area of gaps between the vessel wall and the secondary seal shall not exceed 21.2 square centimeters per meter of vessel diameter and the

width of any portion of any gap shall not exceed 1.27 centimeters. These seal gap requirements may be exceeded during the measurement of the primary seal gaps as required by Condition 7.4.8. [40 CFR 63.120(b)(4)]

vi. The covers, lids or seals on openings of the floating roof deck other than stub drains shall be operated such that the following requirements are met:

A. The cover, lid or seal is in the closed position at all times except when the cover or lid must be open for access. [40 CFR 63.646(f)(1)]

B. Rim space vents, if provided, are set to open when the roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [40 CFR 63.646(f)(2)]

C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports [40 CFR 63.646(f)(3)];

vii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 218.121(b)(1)].

viii. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the accumulated area of gaps between the tank wall and primary seal exceed 212 cm^2 per meter of tank diameter and the width of any portion of any gap exceeds 3.81 cm, the secondary seal does not completely cover the space between the tank wall, the accumulated area of gaps between the tank wall and the secondary seal exceeds 21.2 cm^2 per meter of tank diameter and the width of any portion of any gap exceed 1.27 cm, or there are holes or tears in the seal fabric or seal envelope of either the primary or secondary seal. These actions shall be completed within 45 days of the inspection unless an extension is utilized. [40 CFR 63.120(b)(8)]

ix. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric. [40 CFR 63.120(b)(10)(i)]

b. Each internal floating roof affected tank shall be operated in compliance with the operating requirements of 40 CFR 63.119(b) or(d) and 63.120(a) as follows:

i. The internal floating roof shall be floating on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of filling, emptying or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 63.119(b)(1)]

ii. The covers, lids or seals on openings of the floating roof deck other than stub drains shall be operated such that the following requirements are met:

A. The cover, lid or seal is in the closed position at all times except when the cover or lid must be open for access. [40 CFR 63.646(f)(1)]

B. Rim space vents, if provided, are set to open when the roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer’s recommended setting. [40 CFR 63.646(f)(2)]

C. Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports. [40 CFR 63.646(f)(3)]

iii. No person shall cause or allow the emissions of air contaminants into the atmosphere from any gauging or sampling devices attached to an affected tank, except during sampling or maintenance operations [35 IAC 218.121(b)(1)].

iv. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the internal floating roof is not resting on the surface of the liquid inside the affected storage tank, and is not resting on the leg supports, there is liquid on the floating roof, the seal is detached, or there are visible gaps between the seal and the wall of the affected tank. These actions shall be completed within 45 days of the inspection unless an extension is utilized. [40 CFR 63.120(a)(4)]

v. A tank that is empty shall be repaired prior to refilling the tank upon identification in an

inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal (if one is present) has holes, tears or other openings in the seal or seal fabric. [40 CFR 63.120(b)(7)]

c. For purposes of safety, pressurized tanks may have relief valves that vent to a flare in order to reduce the pressure in the tank.

7.2.8 Inspection Requirements

a. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(b) for each affected tank subject to 40 CFR 63 Subpart G (as incorporated by 40 CFR 63 Subpart CC) equipped with an external floating roof equipped with an external floating roof as follows:

i. Except as provided in (ii) below, the Permittee shall measure gaps between the tank wall and the secondary seal at least once per year (Annual Inspection) and the primary seals at least once every five years (Five Year Inspection). The measurement shall be conducted in accordance with the following methods and procedures: [40 CFR 63.120(b)(1), (2), (3), and (4)]

A. Measure seal gaps, if any, at one or more floating roof levels when the roof is not resting on the roof leg supports;

B. Measure seal gaps around the entire circumference of the vessel in each place where a 0.32 cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and the circumferential distance of each such location;

C. The total surface area of each gap shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance;

D. Add the gap surface area of each gap location for the primary and secondary seal individually and divide the sum by the nominal diameter of the tank and compare each ratio to the respective requirement of Conditions 7.2.7(a)(iv) and (a)(v).

E. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).

ii. If the owner or operator determines that it is unsafe to perform the seal gap measurements or to inspect the vessel to determine compliance with Conditions 7.2.7(a)(iv) or (a)(v) because the floating roof appears to be structurally unsound and poses an imminent or potential danger to inspecting personnel, the owner or operator shall comply with the following requirements:

A. The owner or operator shall measure the seal gaps or inspect the storage vessel no later than 30 calendar days after the determination that the roof is unsafe, or

B. The owner or operator shall empty and remove the storage vessel from service no later than 45 calendar days after determining that the roof is unsafe unless the vessel cannot be emptied and the owner or operator has elected to utilize an extension of up to 30 calendar days and maintains the records required by Condition 7.2.9(c). A maximum of two extensions may be utilized for an occurrence.

iii. A. Visually inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the storage vessel is emptied and degassed (Out-of-Service Inspection) to identify any deficiency or shortcoming in the roof's features, (i.e., external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric) that the Permittee shall repair the features prior to refilling the storage tank with VOL. [40 CFR 63.120(b)(10)]

B. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(a).

b. The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 63.120(a) for each affected internal floating roof tank equipped with an internal floating roof or an external floating roof converted to an internal floating roof as follows:

i. For each affected tank equipped with only a primary seal, the Permittee shall visually inspect the

internal floating roof and the seal through manholes and roof hatches on the fixed roof at least once per year (Annual Inspection) and visually inspect the internal floating roof and the seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection).

ii. For each affected tank equipped with a double-seal system, the Permittee shall visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed and at least once every 5 years (Five-Year Inspection).

iii. For each affected tank equipped with a double-seal system, the Permittee shall visually inspect the internal floating roof and the secondary seal through the manholes and roof hatches at least once per year (Annual Inspection) and visually inspect the internal floating roof, the primary seal, and the secondary seal each time the affected tank is emptied and degassed, and at least once every 10 years (Out-of-Service Inspection).

iv. Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 7.2.10(b).

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected storage tanks to demonstrate compliance with Conditions 5.6.1, 7.2.3, and 7.2.5 through 7.2.8 pursuant to Section 39.5(7)(b) of the Act:

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 63.123 for each affected tank as follows:

i. Keep readily accessible records showing the dimensions of each affected tank for as long as the tank is in operation. [40 CFR 63.123(a)]

ii. Keep a record of all reports submitted in accordance with 40 CFR 63.654(e) including the Notification of Compliance Status, Periodic Reports, and other reports. [40 CFR 63.123(b)]

iii. Keep a record of each Annual, Five Year and Out-of-Service Inspection performed as required by Condition 7.2.8(a)(i) and (a)(iii). The records shall include the following information: [40 CFR 63.123(d)]

A. The date the measurement was performed;

B. Who performed the measurement;

C. The raw data obtained in the measurement;

D. The calculations described in Condition 7.2.8(a)(i)(C and D); and

E. Summary of compliance.

b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 7.2.8(a)(iii):

Records that are sufficient to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.

c. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in Condition 7.2.8(b)) because a determination was made that the roof was unsafe:

i. Explanation of why it was unsafe to perform the inspection or seal gap measurement;

ii. Documentation that alternative storage was unavailable; and

iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.

d. The Permittee shall maintain records of the following for each seal inspection in which the decision was made to utilize an extension (as identified in Conditions 7.2.7(a)(viii) or 7.2.7(b)(iv)) to repair the failure or empty the affected tank:

i. Description of the failure;

ii. Documentation that alternative storage was unavailable; and

iii. Specify a schedule of actions that will ensure the control equipment will be repaired or the affected tank will be emptied as soon as possible.

e. The Permittee shall maintain records of the following items to demonstrate compliance with the limits in Condition 7.2.6:

i. The type, characteristics and throughput of each material stored in tanks 485 and 486;

ii. Actual emissions of VOM on a monthly basis from tanks 485 and 486, tons/month; and

iii. Annual emissions of VOM from tanks 485 and 486 for the current month and the previous 11 months, tons/year.

f. The Permittee shall maintain records of the following equipment items for each affected storage tank to allow calculation of VOM emissions from the storage tanks so as to demonstrate compliance with the annual emission limitations in Condition 7.2.6 and for the purpose of quantifying emissions for the annual emission report. These records shall be updated whenever there is a change in status of a storage tank that is brought about by actions at the source, such as painting, and during periodic inspection;

i. The color of each affected tank;

ii. The condition of each storage tank; and

iii. The type and number of fittings, or a statement that the default settings regarding type and number of fittings in the USEPA TANKS program are used for emission estimates.

g. The Permittee shall maintain records of the following items for each affected storage tank to allow calculation of VOM emissions from the storage tanks so as to demonstrate compliance with the annual emission limitations in Condition 7.2.6 and for the purpose of quantifying emissions for the annual emission report.

i. The identification and properties of each organic liquid stored at the source, as related to emissions, i.e., vapor pressure and molecular weight;

The following items shall be maintained on a monthly basis for the previous month:

ii. The throughput (or change in tank level) of each organic liquid through each tank; and

iii. The volatile organic material emissions attributable to each organic liquid stored in each tank, with supporting calculations, calculated utilizing an approved USEPA methodology, such as the TANKS program and the same methodology as was used to calculate the ERMS baseline;

h. Optional Notification Concerning Actual Contents of Tanks

All tanks are assumed to contain materials that require compliance with rules specified in Condition 7.2.3. The Permittee may submit to the Illinois EPA an annual written statement prior to the beginning of each year (calendar or otherwise specified) of the contents of selected tanks that may negate part of the requirements specified in Condition 7.2.3. This applies to both 35 IAC and 40 CFR 60 and 63 rules. For instance, the statement may list a low vapor pressure material (e.g., diesel oil) in tanks with floating roofs or the current material stored in a tank makes that tank not a Group 1 tank pursuant to the definition in 40 CFR 63 Subpart CC. The statement may then list ongoing requirements that will not have to be performed as a consequence of the different material, such as seal inspection. During the year the Permittee may revise individual tanks with a written notification, but the annual notification must list all tanks using this provision as the previous years statement will expire after one year. Notification is not required if the tank is switched to a material with less stringent requirements but continues to comply with the more stringent requirements. If this notification procedure is utilized, a copy of it shall be kept.

7.2.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, when an affected storage tank has been emptied and degassed, and at least 30 days before the planned refilling of the tank with organic HAPs, pursuant to 40 CFR 63.654(h)(2)(i) so the Illinois EPA may inspect the affected tank prior to refilling, except as allowed in 40 CFR 63.654(h)(2)(i)(B).

b. The Permittee shall notify the Illinois EPA, Compliance Unit and Regional Field Office, at least 30 days before the planned performance of seal gap measurements on external floating roof tanks, pursuant to 40 CFR 63.654(h)(2)(ii), so the Illinois EPA may observe the measurements. Note that one notification may be made for a group of tanks and is valid for 120 days from the date the first tank in the group has the gap measurements made, or until May 1, whichever is earlier.

c. The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control, operating, or inspection requirements, as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

i. Any storage of VPL in an affected tank that is not in compliance with the control requirements (due to

absence of the features required by Condition 7.2.5), e.g., “no rim-mounted secondary seal,” within 5 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

ii. Any storage of VPL in an affected tank that is out of compliance with the control requirements (Condition 7.2.5) due to damage, deterioration, or other condition of the tank, within 60 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance. Such report shall be deemed prompt notification, pursuant to Section 39.5(7)(f)(ii) of the Act.

d. Pursuant to 40 CFR 63.654, the Permittee shall submit Periodic Reports no later than 60 days after each seal gap measurement required by Condition 7.2.8(a)(i), (ii), (iii), (iv), or (v) as follows:

i. When the requirements of Condition 7.2.7(a) are not met. This documentation shall include the following:

A. The date of the seal gap measurement;

B. The raw data obtained in the seal gap measurement and the calculations described in Condition 7.2.8(a);

C. A description of any seal condition specified in Condition 7.2.7(a)(ii) or (iii) that is not met;

D. A description of the nature of and date the repair was made, or the date the vessel was emptied.

E. Such periodic report shall be deemed prompt notification, pursuant to Section 39.5(7)(f)(ii) of the Act.

ii. If an extension is utilized in accordance with Condition 7.2.8(a)(ii), the following shall be provided in the next periodic report:

A. Identification of the vessel;

B. The documentation required in Condition 7.2.9(c);

C. The date the vessel was emptied;

D. The nature of and date the repair was made.

iii. If an extension is utilized in accordance with Condition 7.2.7(b)(iv), the following shall be provided in the next periodic report:

A. Identification of the vessel;

B. The documentation required in Condition 7.2.9(d);

C. The date the vessel was emptied;

D. The nature of and date the repair was made.

iv. Any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or seal fabric; or the secondary seal has holes, tears or other openings in the seal fabric that is identified during the visual inspections required by Condition 7.2.8(a)(iii), the following information shall be included:

A. Date of inspection;

B. Identification of storage vessel(s) with failure;

C. Description of failure;

D. Nature of and date of repair.

e. The Permittee shall submit the following information along with its annual emission report:

The annual emissions of VOM from Storage Tanks 480, 484, 485 and/or 486 if the VOM emissions exceed the allowable limits of Condition 7.2.6.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected storage tanks. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.2.12 Compliance Procedures

a. Compliance with the control and operating requirements of Condition 7.2.5 and 7.2.7 is addressed by the inspection, recordkeeping and reporting requirements of Condition

7.2.8, 7.2.9(a), (b), (c), (d), 7.2.10(a), (b), (c), and (d).

b. For process water tank 331TK-485 and 486, compliance as indicated in Condition 7.2.12(a) is addressed by meeting the requirements of Condition 7.2.3(f) and 40 CFR 60.693-2.

c. Compliance with the emission limitations of Condition 7.2.6 is addressed by the recordkeeping and reporting requirements of Conditions 7.2.9(e) and 7.2.10(e).

d. Emissions shall be calculated using the USEPA TANKS3 program consistent with the ERMS baseline, [i.e., “calculation procedures described in USEPA’s AP-42, 5th ed., (September 1997)”] and average monthly ambient air data.

7.3 Unit: Fluid Catalytic Cracking Unit

7.3.1 Description

The fluid catalytic cracking unit (FCCU) converts heavy low grade gas-oil components from the crude unit into more valuable lighter products by “cracking” the long chain materials on a fine catalyst in a reactor. The reactor has internal cyclones that separate the catalyst from the product but the reactor has no vents to the atmosphere. During the reaction the catalyst become coated with coke.

The coke is removed from the catalyst by partial combustion in a regeneration step which results in carbon monoxide (CO). Primary and secondary cyclones separate most of the regenerated catalyst from the CO. The CO is burned in a boiler and the catalyst fines which pass through the boiler are controlled by electrostatic precipitators (ESPs) and the fines properly disposed. The regenerated catalyst from the cyclones is reused. Although the CO boiler acts as a pollution control device (converting CO to CO2) it is still subject to rules for combustion units. The cyclones are not control equipment but recover raw material.

7.3.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
41	Catalyst Regenerator (112D-1)	Pre-1973	CO Boiler (112B-2) and ESPs (112P-1 and 2)
42	Catalyst Hoppers (112F-1 and 112F-2)	Pre-1973	Scrubber (112X-11)

7.3.3 Applicable Provisions and Regulations

7.3.3.1 Applicable 35 IAC Requirements

a. The “affected fluid catalytic cracking unit” for the purpose of these unit-specific conditions, is a unit described in Conditions 7.3.1 and 7.3.2, along with its associated equipment (e.g., riser, reactor, air blower, etc.).

b. The catalyst regenerators are subject to 35 IAC 212.381 which states that:

No person shall cause or allow the emission rate of PM from catalyst regenerators of fluidized catalytic converters to exceed in any one hour period the rate determined using the following equations:

$$E = 4.10 (P) 0.67$$

for P less than or equal to 30 T/hr

$$E = (55.0 (P)0.11) - 40.0$$

for P greater than 30 T/hr

Where:

E = Allowable emission rate in lbs/hr, and

P = Catalyst recycle rate, including the amount of fresh catalyst added, in T/hr

Previous emission tests have demonstrated that the Permittee can comply with the above emission limit by operating only one (either of the two) or both of the ESPs.

c. The CO boiler (112B-2) is subject to 35 IAC 216.361(a), which states that:

No person shall cause or allow the emission of a carbon monoxide waste gas stream into the atmosphere from a petroleum or petrochemical process unless such waste gas stream is burned in a direct flame afterburner or carbon monoxide boiler so that the resulting concentration of carbon monoxide in such waste gas stream is less than or equal to 200 ppm corrected to 50 percent excess air.

d. Although cited in rules of general applicability [Condition 5.2.2(d)], 35 IAC 214.301 is highlighted here as this unit is a major emitter of SO_2. That rule limits the concentration of SO_2 emissions from any process emission unit to 2,000 ppm.

e. Startup Provisions

Subject to the following terms and conditions, the Permittee is authorized to operate the fluid catalytic cracking unit in violation of Condition 7.3.3(b) and (c) during startup. This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally describing the efforts that will be used "…to minimize startup emissions, duration of individual startups and frequency of startups."

i. This authorization does not relieve the Permittee from the continuing obligation to demonstrate that all reasonable efforts are made to minimize startup emissions, duration of individual startups and frequency of startups.

ii. The Permittee shall conduct startup of the fluid catalytic cracking unit in accordance with written procedures prepared by the Permittee and maintained in the control room for the fluid catalytic cracking unit, that are specifically developed to minimize emissions from startups and that include, at a minimum, the following measures:

A. The Permittee shall conduct startup of an affected fluid catalytic cracking unit in accordance with the manufacturer's written instructions, the Startup, Shutdown and Malfunction Plan required by 40 CFR 63 (e)(6) or other written instructions prepared by the Permittee and maintained on site and that include, at a minimum, the following measures:

I. Review of the operational condition of an affected fluid catalytic cracking unit prior to initiating startup of the affected fluid catalytic cracking unit.

II. Review of the operating parameters of an affected fluid catalytic cracking unit during each startup to make appropriate adjustments to the startup to reduce or eliminate excess emissions.

B. Begin operation of the continuous opacity monitor prior to the start of catalyst loading.

C. This authorization only extends for a period of up to 78 hours following initiation of feed into the unit during each startup event.

iii. The Permittee shall fulfill applicable recordkeeping requirements of Condition 7.3.9(h) and 7.3.10(c).

iv. As provided by 35 IAC 201.265, an authorization in a permit for excess

emissions during startup does not shield a Permittee from enforcement for any violation of applicable emission standard(s) that occurs during startup and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

f. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of the fluid catalytic cracking unit in violation of the applicable requirements of Conditions 7.3.3(b) and (c) in the event of a malfunction or breakdown of the CO boiler and/or the ESP on the affected fluid catalytic cracking unit.

This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

i. This authorization only allows such continued operation as necessary to provide essential service or to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.

ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable reduce load of the fluid catalytic cracking unit, repair the fluid catalytic cracking unit, remove the fluid catalytic cracking unit from service or undertake other action in accordance with its startup, shutdown and malfunction plan to minimize overall emissions so that excess emissions cease.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 7.3.9(i) and 7.3.10(b). For these purposes, time shall be measured from the

start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the fluid catalytic cracking unit out of service.

iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

vi. The continuous opacity monitor shall continue to operate during period of malfunction and breakdown as specified above.

vii. Finally note that these conditions relate to the current emission control equipment. When new control equipment is installed pursuant to the Consent Decree, these conditions will need to be revised or may no longer be appropriate.

7.3.3.2 Consent Decree Requirements

a. General

The Permittee shall comply with the requirements of a Consent Decree (CD) signed with the USEPA and Illinois EPA on January 26, 2005. See Condition 5.3.17 for general terms of the Consent Decree. The Consent Decree covered the Lemont refinery as well as refineries in other states.

The requirements for the FCCU at the Lemont refinery are reiterated below. Note that all of the requirements of the Consent Decree that apply to the FCCU are listed here rather than in other applicable part of Section 7.3, e.g., emission limits, monitoring and recordkeeping. The limits actually are measured at the discharge of the ESPs downstream of the CO boiler which is listed in Section 7.1 of this permit because it is a fuel combustion emission unit (Unit 15). However, in the Consent Degree they are listed as applicable to the FCCU and thus are listed in Section 7.3.

b. The Permittee shall calibrate and certify continuous emission monitoring systems for NO_x, O2, SO_2, CO and opacity on the FCCU (§12 of the Consent Decree).

c. NO_x limit or Demonstrations to Establish a Limit

No later than December 31, 2007 the Permittee shall convert the FCCU to Full Burn Operation or accept and agree to comply with NO_x concentration based on emission limits of 20 ppmvd on a 365-day rolling average and 40 ppmvd on a 7-day rolling average basis, both at 0% oxygen.

Note: The Permittee has indicated that it intends to comply with the NO_x concentration limits above by installing a selective catalytic reduction (SCR) system to meet the above limit. Per the Consent Decree, this absolves the Permittee from any remaining FCCU NO_x-limit related obligations (e.g., low NO_x burners in CO boiler, Combustion Promotor trials and evaluations, NO_x reducing catalyst additive trials and optimizations, etc). (§30A)

d. SO_2 Limitations

i. The Permittee shall install and commence operation of a Wet Gas Scrubber (WGS) on the FCCU by December 31, 2007. Emissions of SO_2 after the WGS shall meet a limit of 25 ppmvd at 0% O_2 on a 365-day rolling average basis and 50 ppmvd at 0% O_2 on a 7-day rolling average basis. (§33)

ii. The Permittee shall use the SO_2 and O_2 CEMs discussed in Condition 7.3.3.2(b) above to monitor performance and to demonstrate compliance with the above limits. (§41)

e. PM Limitations and Testing

i. The WGS discussed in Condition 7.3.3.2(d) above may also be used to control PM. The WGS shall be designed to achieve an emission rate of 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis. (§44)

ii. The Permittee shall conduct a PM emission test on the FCCU after installation of the WGS. If the test does not meet the limit in (i) above, the Permittee may request a higher limit from the USEPA but in no case higher than the NSPS Subpart J limit of 1.0 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis. (§44-47)

iii. In addition to the above initial test after installation of the WGS, the Permittee shall conduct PM testing annually for at least three years. If these three test demonstrate consistent compliance, the Permittee may request that the frequency of testing be reduced.

f. CO Limitations

i. The Permittee shall comply with a CO emission limit of 100 ppmvd CO corrected to 0% O_2 on a 365-day rolling average and 500 ppmvd CO corrected to 0% O2 on a 1-hour average. The latter value is the NSPS Subpart J value, to which this unit is subject. The CO is monitored after the CO boiler. (§48)

The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

ii. The Permittee shall use the CO and O_2 CEMs discussed in Condition 7.3.3.2(b) above to monitor performance and demonstrate compliance with the above CO limit. (§49)

7.3.3.3 NESHAP Requirements

a. The FCCU is subject to the requirements of 40 CFR 63 Subpart UUU (63.1560 to 63.1579 plus Tables).

b. i. One of the options in 40 CFR 63.1564 is to comply with the PM emission limit of the NSPS, 40 CFR 60.102. The Permittee has chosen this option. This standard specifies the following standards from the catalyst regenerator:

A. PM emissions not exceed 1.0 lb/1000 lb of coke burnoff in the catalyst regenerator.

B. Gases shall not exhibit greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period.

ii. One of the options in 40 CFR 63.1565 is to comply with the CO emissions limit of the NSPS, 40 CFR 60.103. The Permittee has chosen this option. That standard is 500 ppm (dry basis).

c. The Permittee shall comply with the performance test requirements of 40 CFR 63.1571.

d. The FCCU is subject to the monitoring installation, operation and maintenance requirements of 40 CFR 63.1573 and Table 40 of 40 CFR 63 Subpart UUU.

e. The Permittee shall submit reports for the FCCU as required by 40 CFR 63.1575 and Table 43 of 40 CFR 63 Subpart UUU.

f. The Permittee shall keep the records required by 40 CFR 63.1576 and Tables 4, 7, 13 and 14 of 40 CFR 63 Subpart UUU.

g. The Permittee shall comply with the General Provisions of the NESHAP, 40 CFR 63 Subpart A that are applicable as listed in Table 44 of 40 CFR 63 Subpart UUU. One of its requirements for units that comply by use of control equipment is to have a Startup, Shutdown and Malfunction Plan as required by 40 CFR 63.6(e)(3).

h. The equipment in this process shall meet the requirements of the Operation, Maintenance and Monitoring Plan required by 40 CFR 63.1574.

7.3.4 Non-Applicability of Regulations of Concern

a. The FCCU is not subject to 40 CFR 63 Subpart CC (Refinery NESHAP) because that rule only applies to certain units that emit organic HAP emissions and this unit does not emit organic HAPs.

b. The affected fluid catalytic cracking unit is not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected fluid catalytic cracking unit is subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).

7.3.5 Control Requirements and Work Practices

a. The scrubber on the catalyst hoppers must be operated when a vacuum is applied to one of the catalyst hoppers. The Permittee is not required to operate the scrubber on the catalyst hoppers at any other time.

b. The Permittee shall add sulfur-reducing catalyst additive into the catalyst blend as necessary to remain within the SO_2 emission limits of Condition 7.3.6(a). After the Permittee commences operation of the wet gas scrubber required by Consent Decree and Condition 7.3.3.25(d), the requirement to use sulfur-reducing catalyst additive will no longer be in effect [T1].

7.3.6 Production and Emission Limitations

In addition to the source-wide production and emission limitations set forth in Condition 5.6 and the emission limitations in the Consent Decree (Condition 7.3.3.2), the affected fluid catalytic cracking unit is subject to the following:

a. Emissions from the fluid catalytic cracking unit shall not exceed the following limits [T1]:

Pollutant	Emissions (Tons/Month)	Emissions (Tons/Year)
SO_2	1,139.56	13,675.00

b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

c. The above limitations were established in Permit 01070060, pursuant to 35 IAC Part 203 and 40 CFR 52.21. These limits ensure that the construction and/or

modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 and 40 CFR 52.21 [T1].

7.3.7 Testing Requirements

Testing requirements are not set for the affected fluid catalytic cracking unit. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5. There are also testing requirements in the Consent Decree discussed in Condition 5.3.17 and specifically for the FCCU in Condition 7.3.3.2. The general testing requirements in Condition 8.5 must still be followed.

7.3.8 Monitoring Requirements

a. The Permittee shall maintain and operate a continuous opacity monitoring system on the catalyst regenerator. [35 IAC 201.401(a)(4)]

b. The refinery NESHAP, Subpart UUU, also has monitoring requirements for the FCCU pursuant to 40 CFR 63.1573 and Table 40. See Condition 7.3.3.3(d).

c. The Consent Decree also requires monitors for NO_x, O_2, SO_2, CO and opacity. See Condition 7.3.3.2(b).

d. The Permittee shall measure the amount of catalyst loss during periods of startup, malfunction or breakdown by a material balance. If the malfunction/breakdown period is too brief to enable the use of a material balance, an engineering estimate of the catalyst loss may be provided.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected fluid catalytic cracking unit to demonstrate compliance with Conditions 5.6.1 and 7.3.3, 7.3.5 and 7.3.6, pursuant to Section 39.5(7)(b) of the Act:

a. Continuous opacity monitor readings (%).

b. Readings on other monitors specified by the Consent Decree such as NO_x, O2, SO_2 and CO.

c. Catalyst recycle rate (ton/hr). Condition 7.3.3.1(b) requires compliance based on an hourly rate. Because the calculation involves a complex material balance with measurement of volume, the Permittee is only required to perform the required calculation weekly, assuming either a steady rate or making other adjustment based on

organic material flow rates to determine average hourly rate for the week. The term recycle rate is used as specified by the rule but a more accurate term is recirculation rate since it includes fresh catalyst. If the normal weekday on which the material balance is performed is a holiday, the material balance may be performed for a 6, 8, or 9 day period.

d. Catalyst makeup rate (lb/mo).

e. Fines hauled away (lb/mo).

f. PM emissions (lb/hr). The explanation of hourly values in the Condition 7.3.9(c) also applies here.

g. VOM, SO_2, CO and NO_x emissions (lb/yr)

h. Records for Startup

The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected fluid catalytic cracking unit subject to Condition 7.3.3(e), which at a minimum shall include:

i. The following information for each startup of the FCCU:

A. Date and duration of the startup, i.e., start time and time normal operation achieved. For purposes of the Condition, “normal Operation” is defined as operation of the CO boiler and ESP in compliance with applicable emission limits;

B. If normal operation was not achieved within 78 hours, an explanation why startup could not be achieved within this time.

C. A detailed description of the startup, including reason for operation and whether the COM was operating.

D. An explanation why established startup procedures could not be performed, if not performed; and

E. Whether exceedance of Condition 5.3.2 may have occurred during startup. If an exceedance may have occurred, an explanation of the nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup.

ii. A maintenance and repair log for the affected fluid catalytic cracking unit, listing each activity performed with date.

i. Records for Malfunctions and Breakdowns

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected fluid catalytic cracking unit subject to Condition 7.3.3(f) during malfunctions and breakdown, which as a minimum, shall include:

i. Date and duration of malfunction or breakdown.

ii. A detailed explanation of the malfunction or breakdown.

iii. An explanation why the affected fluid catalytic cracking unit continued to operate in accordance with Condition 7.3.3(f).

iv. The measures used to reduce the quantity of emissions and the duration of the event.

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

vi. The amount of release above allowable emissions during malfunction/breakdown.

vii. If the malfunction and breakdown exceeded seven days (168 hours), the date and time Illinois EPA's regional office was contacted, the person spoken to, items discussed, and follow-up instructions.

j. Any records required by the NESHAP, 40 CFR 63.1576 and Tables 4, 7, 13 and 14 of Subpart UUU.

k. Any records required by implementation of the control programs that are part of the Consent Decree.

7.3.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected fluid catalytic cracking unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. Results of any emission test that demonstrated noncompliance with Condition 7.3.3 regardless of whether the test was at the request of the Illinois EPA.

ii. Results of all tests performed for the Consent Decree including trials and demonstrations.

iii. On or before the 45th day after each calendar quarter, the Permittee shall submit a report for the last preceding calendar quarter identifying any and all opacity measurements which exceed 30 percent, average over a six minute period. Such quarterly reports shall be deemed prompt pursuant to Section 39.5(7)(f)(ii) of the Act.

These “excess opacity” reports shall provide, for each such incident, the percent opacity measured as well as the date and span of such incident. These repots shall also specify for each incident whether it occurred during startup, shut-down, or malfunction. If a malfunction is indicated in the report, all corrective actions taken, if any, shall be reported. The reports shall also specify, for each calendar quarter, the date of those periods during which the continuous monitoring system was not in operation. [35 IAC 201.405(c), (d) and (e)]

iv. Any reports required by the NESHAP, 40 CFR 63.1575 and Table 43 of Subpart UUU.

b. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected fluid catalytic cracking unit subject to Condition 7.3.3(b) and (c) during malfunction or breakdown:

i. The Permittee shall notify the Illinois EPA’s regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected fluid catalytic cracking unit was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the

repairs were completed or when the affected fluid catalytic cracking unit was taken out of service.

iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, within 5 working days of the occurrence and every 14 calendar days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the affected fluid catalytic cracking unit will be taken out of service.

c. Reporting of Startups

Within 14 calendar days of any startup the Illinois EPA's regional office shall be notified of the estimated amount of catalyst lost during the startup in excess of the permitted emission rate and the length of time the startup took following initiation of feed into the unit.

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected fluid catalytic cracking unit. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.3.12 Compliance Procedures

a. Compliance with Condition 7.3.3.1(b) is addressed by the opacity monitoring requirements of Condition 7.3.3.3(b)(i)(B) and 7.3.7 and the records required in Condition 7.3.9(a) and (c) through (f).

b. Compliance with Condition 7.3.3.1(c) is addressed by the CO monitoring requirements of Condition 7.3.3.3(b)(ii) and 7.3.8(b) and the records required in Condition 7.3.9(b) and (g).

c. Compliance with Condition 7.3.3.1(d) is addressed by the monitoring requirements of Condition 7.3.8(b) and (c) and the records required in Condition 7.3.9(g).

d. Compliance with Condition 7.3.3.1(e) is addressed by the records required in Condition 7.3.9(h).

e. Compliance with Condition 7.3.3.1(f) is addressed by the records required in Condition 7.3.9(i).

f. Compliance with the Consent Decree requirements of Condition 7.3.3.2 will be addressed by requirements in various construction permits that will be necessary to comply with the requirements after testing and demonstrations of appropriate control devices and pollution prevention methods.

g. Compliance with Condition 7.3.3.3(NESHAP rule) is addressed by the records required in Condition 7.3.9(j).

Until the control items required to be installed by the Consent Decree are installed and tested for a new emission rate, the following may be used to calculate emissions.

h. Emissions calculations of PM, CO, SO_2, NO_x, and VOM may be derived from the following emission factors which were derived from previous emission test values, with adjustments based on operating rates, hours of operation, and additional emissions for period of startup, malfunction and breakdown. Emission factors derived from this information are as follows:

i. NO_x: CEM and flow data, or if CEM malfunctions, 145 pounds per 1,000 bbl of liquid feed.

ii. SO_2: CEM and flow data, or if CEM malfunctions, 0.0016 times percent sulfur in fresh feed times [fresh feed rate in pounds + 2.2 times recycle feed rate in pounds]. This rate is based on an algorithm derived from previous emission test values with adjustments based on operating rates, feed quality, and hours of operation.

Note that recycle feed rate is not the same as catalyst recycle rate in Condition 7.3.3(a).

iii. CO: CEM and flow data, and additional emissions for periods of startup, malfunction, and breakdown.

iv. PM: Three different values depending upon ESPs operated.

ESP Operation	lb PM/1,000 Barrels Feed
112P-1 Only	24.8
112P-2 Only	22.5
112P-1 and 112P-2 Operating in Parallel	22.1

v. CO and VOM when CO boiler operating with supplemental fuel: See Section 7.1 for fuel combustion units. CO and VOM due to FCCU

operation are negligible. Note that total emissions may be a combination of emission factors due to burning part FCCU gases and the remainder supplemental fuel gas. The combined gas stream is monitored for CO, SO_2, and NO_x, and it is not possible to separate out one source's contribution from the other's.

7.4 Unit: HF Alkylation

7.4.1 Description

In the HF alkylation unit isobutane and olefins are combined in the presence of hydrofluoric (HF) acid, which acts as a catalyst, to yield a product in the gasoline boiling range. The unit has its own flare that burns gases that are not recovered by a knockout drum. Normally there is no venting to the flare, with only pilot and purge gas (both natural gas) being combusted. There is periodic, routine flaring due to a number of discrete events; these include venting of HF trucks, HF storage drums, venting of non-condensible materials (e.g. propane and butane) from splitter and KOH treater vessels. There are also periodic non-routine flaring events including venting the feed dryer and the defluorinator.

HF acid is a HAP. Emissions are neutralized by a KOH scrubber, which is regenerated with lime.

The RADI (Rapid Acid De-Inventory) system is a system of equipment and set of procedures to safely prevent the release of HF acid. It normally has no emissions.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
43	120-1	HF Alkylation reactor and most vessels are closed vent but relief valves vent to header and knockout drum	Scrubber (Neutralizer) and Smokeless Flare (844C-5)
44	120-2	KOH Regeneration	Carbon Canisters
45	120-3	Lime Storage Silo	Filter
46	120-4	RADI System	

7.4.3 Applicable Provisions and Regulations

a. The “affected HF alkylation process” for the purpose of these unit-specific conditions, is a process that emits HF acid and described in Conditions 7.4.1 and 7.4.2 and subject to the rules cited in Condition 5.3.

b. Pursuant to the Consent Decree, the associated flare is considered a fuel gas combustion device and is subject to the Petroleum Refinery NSPS, 40 CFR 60, Subparts A and J, and shall not burn any fuel gas that contains H_2S in excess of 0.10 gr/dscf on an average 3-hour rolling basis. [40 CFR 60.104(a)(1) and 50.105(e)(3)(ii)] Based on the NSPS

standard conditions and standard conversions, this is equivalent to 161 ppmv.

The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

c. The requirements for the flare that is the control device for reactor are described in Section 7.7.

7.4.4 Non-Applicability of Regulations of Concern

a. The flare is not required to meet the performance and monitoring requirements of 40 CFR 63.11 because it is not used to comply with the provisions of the Refinery NESHAP. The gases vented to the flare do not contain HAPs as listed in 40 CFR 63 Subpart CC, Table 1 and therefore the vent does not qualify as a Group 1 miscellaneous process vent. However, the flare is required to meet compliance with 40 CFR 60.18 which is identical to 40 CFR 63.11.

b. The main vent stream is not a Group 1 miscellaneous process vent pursuant to the definition of 40 CFR 63.641, because it does not contain HAPs listed in Table 1 of 40 CFR 63 Subpart CC.

c. The flare on the affected HF alkylation unit is not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected flare is subject to an NSPS pursuant to the Consent Decree. The NSPS was proposed prior to November 15, 1990 but the monitoring requirements for it are identical to the NESHAP Subpart A (40 CFR 63.11) which was proposed after November 15, 1990. See Condition 7.4.8(a). The scrubber is subject to CAM. See Condition 7.4.8(b)

7.4.5 Control Requirements and Work Practices

a. The scrubber/neutralizer shall be operated to neutralize HF acid and reduce HF emissions from the flare.

b. The carbon canisters shall be replaced prior to or as soon as practicable after VOM breakthrough occurs.

c. The filter on the lime silo shall be operated to minimize PM emissions.

7.4.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected HF Alkylation Unit is subject to the following:

a. Emissions from the affected alkylation unit flare shall not exceed the following limits:

Annual Emissions (tons/year)					
PM	SO_2	NO_x	VOM	CO	Fluorides
2.6	0.3	3.1	8.3	24.8	0.2

In addition, emissions of fluorides from the entire HF alkylation system shall not exceed 1.6 tons/yr and including all processes downstream shall not exceed 3.0 ton/yr, the significant level for fluorides.

These limits are based on the maximum operating rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in permits 84090004 and 85010029, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

b. Emissions from the affected lime storage silo filter shall not exceed the following limits:

PM Emissions	
(lb/hr)	(ton/yr)
0.6	2.7

These limits are based on the maximum use of lime during KOH regeneration system.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 98020028, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits are based on maximum

operating rates and ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.4.7 Testing Requirements

Testing requirements are not set for the affected HF Alkylation Unit. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.4.8 Monitoring Requirements

a. The HF Alkylation Unit reactor vents to a flare that is included in Section 7.7 of this permit. See Section 7.7.8 for the monitoring required for flare 844C-5.

b. Compliance Assurance Monitoring (CAM) Requirements

The affected scrubber on the HF Alkylation Unit (located prior to the flare for the purpose of scrubbing HF is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources. The Permittee shall comply with the monitoring requirements of the Compliance Assurance Monitoring (CAM) Plan described in Attachment 3, Table 3.1 pursuant to 40 CFR Part 64 as submitted in the Permittee's CAM plan application.

c. The lime silo is only used intermittently but when it is used the filter discharge shall be observed for high opacity, which would be an indicator of a possible broken bag in the filter.

d. Consent Decree Monitoring Requirements

The Lemont Refinery is implementing an Alternative Monitoring Plan, submitted to USEPA, to document that the gases that are routinely flared are very low in H_2S, consistent with the low level of sulfur in the unit.

The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected HF Alkylation Unit to demonstrate compliance with Conditions 5.6.1, 7.4.5 and 7.4.6, pursuant to Section 39.5(7)(b) of the Act:

a. i. Date and duration of any time when the pilot flame monitoring equipment of an affected HF alkylation process flare was not in operation, with explanation; and

ii. Date and duration of any time when there was no pilot flame present at an affected HF alkylation process flare, with explanation.

b. Monthly usage of HF acid.

c. Emissions of PM, SO_2, NO_x, VOM, CO, and fluorides from flare (Running 12 month total).

d. Emissions of PM from the lime storage silo filter (Running 12 months total).

e. Activation of the RADI system.

f. Records for Compliance Assurance Monitoring (CAM) Requirements

The Permittee shall maintain records of the monitoring data, monitor performance data, corrective actions taken, monitoring equipment maintenance, and other supporting information related to the monitoring requirements in Condition 7.4.8(a), as required by 40 CFR 64.9(b)(1).

7.4.10 Reporting Requirements

a. The Permittee shall promptly notify within 30 days the Illinois EPA, Air Compliance Unit, of deviations of an affected HF Alkylation Unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. Continued operation of the affected HF alkylation process when the flare is not operating.

ii. Continued operation of the affected HF alkylation process when the KOH scrubber is not operating.

b. Reporting of Compliance Assurance Monitoring (CAM)

The Permittee shall submit monitoring reports to the Illinois EPA in accordance with Condition 8.6.1 and shall include, at a minimum, the information required under Condition 8.6.1 and the following information [40 CFR 64.6(c)(3), 64.9(a)(1), and (2)]:

i. Summary information on the number, duration, and cause of excursions or exceedances, and the corrective actions taken [40 CFR 64.6(c)(3) and 64.9(a)(2)(i)]; and

ii. Summary information on the number, duration, and cause for monitoring equipment downtime incidents, other than downtime associated with calibration checks [40 CFR 64.6(c)(3) and 64.9(a)(2)(ii)].

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected HF Alkylation Unit. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.4.12 Compliance Procedures

a. Compliance with Conditions 7.4.3 is addressed by the monitoring requirements in Condition 7.4.8 and the records required in Condition 7.4.9.

b. Compliance with the emission limitations of Condition 7.4.6 is addressed by the records required in Condition 7.4.9(c).

7.5 Unit: Two Sulfur Recovery Units

7.5.1 Description

The plant sulfur recovery system consists of two separate operations. Unit 119 consists of a MEA regeneration system, sour water stripper and two identical Claus sulfur recovery units (“A” and “B”) with oxidizers for tail gas cleanup. Unit 121 receives acid gas from the Unit 119 MEA regenerators and stripper and processes the gas through two identical Claus sulfur recovery units (“C” and “D”) each with a Beavon Sulfur Recovery Plant (BSRP) for tail gas cleanup. The BSRP uses a Stretford solution to recovery the sulfur. Each train (A, B, C and D) has its own tail gas oxidizer (combustor).

The MEA regeneration system and sour water stripper which produce the acid gas (primarily H_2S) are a closed vent system and not listed as emission units.

7.5.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Emission Control Equipment
47	119	Claus Sulfur Recovery Process (119A)	Oxidizer
48	119	Claus Sulfur Recovery Process (119B)	Oxidizer
49	121	Claus Sulfur Recovery Process (121C)	BSRP and Combustor
50	121	Claus Sulfur Recovery Process (121D)	BSRP and Combustor

7.5.3 Applicable Provisions and Regulations

a. The “affected sulfur recovery units” for the purpose of these unit-specific conditions, are sulfur recovery units described in Conditions 7.5.1 and 7.5.2.

b. The affected sulfur recovery units are subject to Condition 5.3; however, the only condition meaningful to this process are Conditions 5.3.7 and 5.3.8.

   Units 119A and 119B are not subject to 35 IAC 214.301 because both units meet the exception of 35 IAC 214.382(a). See Condition 5.3.7 for a detailed explanation. Units 121C and 121D are subject because they do not meet the exception of being existing units. Units 119A and 119B are distinct units and one unit can be in compliance while the other is not. Likewise, 121C and 121D are distinct units and one unit can be in compliance while the other is not.

c. NESHAP, Consent Decree and NSPS Requirements

i. The NESHAP for Sulfur Recovery Units (SRU), 40 CFR 63 Subpart UUU is now applicable.

ii. The NESHAP lists several options for compliance. The Lemont refinery has four separate trains and has chosen different options for compliance.

A. Units 119A and 119B

1. Units 119A and 119B do not have a Tail-Gas Treatment Unit (TGTU) and therefore can only comply by meeting Option 3 in Table 29 of Subpart UUU. This option requires that emissions of Total Reduced Sulfur (TRS) compounds not exceed 300 ppmv, expressed as an equivalent SO_2 concentration on a dry basis at zero percent excess air.

2. The Consent Decree requires that by December 31, 2008 one or more TGTUs be installed on Units 119A and 119B, and that no later than 90 days after installation of the TGTU system, Units 119A and 119B will be subject to NSPS, Subparts A and J, specifically 40 CFR 60.104(a)(2). This rule requires either an oxygen- or reduction-based TGTU followed by an incineration system for which emissions do not exceed 250 ppmv, expressed as SO_2 concentration on a dry basis at zero percent excess air or a reduction-based TGTU not followed by incineration for which emissions do not exceed 300 ppmv or reduced sulfur compounds expressed as SO_2 concentration on a dry basis at zero percent excess air. This is equivalent to Line 1 in Table 29 of the NESHAP Subpart UUU.

B. Units 121C and 121D

These units became subject to NSPS, Subparts A and J on January 26, 2005, pursuant to the Consent Decree. Accordingly, they are currently required to comply with the NSPS as described above, which is equivalent to Line 1 in Table 29 of the NESHAP Subpart UUU.

The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA

(Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

C. Other Consent Decree Requirements

Paragraphs 69, 70 and 71 of the Consent Decree also includes interim measures for Units 119A and B until compliance with the NSPS is achieved and control of sulfur pit emissions. These requirements will not be reiterated.

Paragraph 73 requires that the Permittee develop and follow a Preventive Maintenance and Operation Plan (PM&O Plan) for the sulfur recovery plant and upstream process units.

iii. The Permittee must prepare and implement an operation, maintenance and monitoring plan (OM&M Plan) for each affected emission unit, control system and CEMS. This plan must be submitted for review and approval. The specific requirements of the plan are listed in 40 CFR 63.1572(f).

d. Startup Provisions

Operation of any train in either unit in excess of normal emissions during startup is allowed. The reason for the excess emissions is during the regeneration of catalyst phase. This regeneration may occur during a scheduled shutdown or on an emergency basis (i.e. between scheduled shutdowns). Failure to regenerate the catalyst results in higher SO_2 emissions during the normal sulfur recovery process. The excess emissions result from the burn-off of a thin layer of sulfur on the surface of the catalyst. During the burning off process the emissions are vented to the oxidizer for that unit. This does not change the emission rate but provides better dispersion. The emission standard potentially being exceeded is 35 IAC 214.301 as the unit is not removing sulfur compounds from fuel gas during regeneration, and the flow while removing the build-up of sulfur from catalyst is low. Emissions are monitored with a SO_2 Continuous Emissions Monitors (CEMS). Although the removal is a burn process, it is not a fuel combustion unit which would exempt it from the 2000 ppm limit of 35 IAC 214.301.

If any of the amine regenerators need to be repaired, prior to opening of the regenerators they may be steam purged and the steam vented to one of the flares. The flares convert any traces of H_2S to SO_2.

i. The Permittee shall minimize emissions during startup by performing the following:

   A. When practicable, the startup procedure shall be planned to occur in conjunction with a scheduled shutdown rather than on an emergency basis.

   B. The Permittee shall operate the sulfur recovery process in such a manner to minimize the number of catalyst regeneration phases and to minimize the buildup of sulfur on the catalyst.

   C. During emergency startup of either of Unit 121's individual trains, the sulfur recovery process shall to the extent possible be transferred to either the Unit 119 sulfur recovery trains or the other trains of Unit 121. The BSRP shall also continue to operate.

ii. This authorization only extends for a period of up to 120 hours following initial introduction of acid gas to the system during each startup event. As provided by 35 IAC 201.265, this authorization does not shield the Permittee from enforcement for any such violation and shall only constitute a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all associated terms and conditions.

iii. The Permittee shall take the following measures to minimize startup emissions, the duration of startups, and minimize the frequency of startups:

   A. The Permittee shall conduct startup of an affected sulfur recovery units in accordance with the manufacturer’s written instructions or other written instructions such as the Startup, Shutdown and Malfunction Plan prepared by the Permittee and maintained on site and that include, at a minimum, the following measures:

      1. Review of the operational condition of an affected sulfur recovery unit prior to initiating startup of the affected sulfur recovery units.

2. Review of the operating parameters of an affected sulfur recovery unit during each startup to make appropriate adjustments to the startup to reduce or eliminate excess emissions.

B. 1. It should be noted that this startup provision only applies to 35 IAC rules. The requirements for startup, shutdown or malfunction contained with the NSPS and NESHAP must be followed with respect to those regulations.

2. With respect to the NESHAP the Permittee must follow the previously prepared Startup, Shutdown and Malfunction Plan required by 40 CFR 63.6(e)(3).

iv. The Permittee shall fulfill applicable recordkeeping requirements of Condition 7.5.9(e).

v. Any startup that does not meet the requirements of this condition would be considered a deviation and the reporting requirements of Condition 7.5.10(a)(i) would apply.

e. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of the Claus Sulfur Recovery Processes (Units 121C and 121D) in violation of the applicable requirements of Condition 7.5.3(b) in the event of a malfunction or breakdown of the Beavon Sulfur Recovery Plant on the Claus Sulfur Recovery Process. Malfunction may include replacement of the Stretford solution during which the unit is not operating although not an equipment malfunction.

This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

i. This authorization only allows such continued operation as necessary to provide essential service or to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.

ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable reduce load of the Claus Recovery Processes (Units 121C and 121D), repair the Claus Recovery Processes (Units 121C and 121D), remove the Claus Recovery Processes (Units 121C and 121D) from service or undertake other actions in accordance with its Startup, Shutdown and Malfunction plan to minimize overall emissions so that excess emissions cease.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 7.5.9(e) and 7.5.10(b). For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the Clause Sulfur Recovery Processes (Units 121C and 121D) out of service.

iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

vi. The equipment in this process shall meet the requirements of the Operation, Maintenance and Monitoring Plan required by 40 CFR 63.1574.

7.5.4 <u>Non-Applicability of Regulations of Concern</u>

a. The affected sulfur recovery units are not subject to the NESHAP for Petroleum Refineries, 40 CFR 63 Subpart CC because they do not emit organic HAPs.

b. Neither of the sulfur recovery units is subject to 35 IAC 216.361 because they are not considered to be petroleum or petrochemical processes.

c. The affected sulfur recovery units are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected sulfur recovery units are subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).

7.5.5 Control Requirements and Work Practices

a. The respective oxidizer (combustor) shall be operated at all times when an affected sulfur recovery train is in operation.

b. For any bypass lines on the sulfur recovery units the Permittee shall meet the work practice standards of 40 CFR 63.1569 and Table 36 of Subpart UUU.

c. This permit is issued based on all H_2S gas streams produced by treatment of refinery fuel gas being processed by one of the sulfur recovery units except in the event of startup/shutdown of the units. During startup/shutdown appropriate steps shall be taken to minimize emissions in excess of applicable emission limitations.

7.5.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected sulfur recovery units are subject to the following:

a. Emissions from the Sulfur Recovery Plant, which includes Unit 119 (Trains A and B) and Unit 121 (Trains C and D) shall not exceed the following limits (limits are for all four trains combined) [T1]:

Pollutant	Emissions (Tons/Month)	Emissions (Tons/Year)
NO_x	4.25	42.56
SO_2	700.00	7,000.00
CO	57.33	573.32
VOM	2.11	21.11
PM/PM_{10}	0.28	2.81

b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

c. The above limitations were established in Permit 01030085, pursuant to 35 IAC Part 203 and 40 CFR 52.21. These limits

ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 and 40 CFR 52.21 [T1].

7.5.7 Testing Requirements

The NESHAP, 40 CFR 63 Subpart UUU has the following performance test requirements.

a. Table 32. Requirements for Performance Test for HAP Emission from SRUs Not Subject to NSPS as stated in 40 CFR 63.1568(b)(2).

b. Table 37. Requirements for Performance Tests for Bypass Lines as stated in 40 CFR 63.1569(b)(1).

c. Table 40. Contains requirements for performance evaluations of CEMS for SO_2 emissions. This does not apply if a test has already been done as required by a NSPS.

7.5.8 Monitoring Requirements

a. NESHAP Requirements

Table 31 of 40 CFR 63 Subpart UUU contains the NESHAP continuous emission monitoring requirements as stated in 40 CFR 63.1568(b)(1) and 63.1572. These requirements would include a SO_2 and an O_2 monitor per specifications in 40 CFR 60 Appendices A or B. Table 40 of Subpart UUU lists the installation, operation and maintenance requirements for these CEMS.

b. Ambient Air Monitoring

i. The Permittee shall properly maintain and operate two hydrogen sulfide ambient air monitoring remote stations equipped with visible and audible alarm systems. The stations shall be located between the two residential receptor areas as indicated on the map submitted to the Illinois EPA as part of state operating permit 77020010 application dated October 31, 1996. The set points for the activation of the visible and audible alarm systems shall be fixed at such a level, that they provide an early indication of any release of hydrogen sulfide gas in the refinery which can impact the environment, including the threat of an odor nuisance in the areas outside the plant boundaries. The alarm set point values shall be approved by the Illinois EPA.

ii. All ambient air monitoring equipment and procedures must be approved by the Illinois EPA. The procedures

must describe all calibration procedures, audit procedures, preventative maintenance procedures, and data collection and verification procedures. The Permittee shall have the option of replacing the existing hydrogen sulfide monitoring instruments with other instruments. Engineering specifications for such equipment shall be submitted to the Illinois EPA for approval prior to their purchase. The ambient air monitoring stations cannot be relocated without prior Illinois EPA approval nor can the alarm set point values be adjusted without prior approval by the Illinois EPA.

7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for each affected sulfur recovery unit to demonstrate compliance with Conditions 5.6.1, 7.5.3, 7.5.5, 7.5.6 and 7.5.8 pursuant to Section 39.5(7)(b) of the Act:

a. SO_2, NO_x, CO, VOM and PM/PM_{10} emissions, with supporting calculations.

b. Amount of sulfur recovered

c. Any records required by the NESHAP, 40 CFR 63.1576.

d. Records for Startup

The Permittee shall maintain the following records, pursuant to Section 39.5(7)(b) of the Act, for each affected sulfur recovery units subject to Condition 7.5.3(b), which at a minimum shall include:

i. The following information for each startup of a sulfur recovery unit:

A. Date and duration of the startup, i.e., start time and time normal operation achieved.

B. If normal operation was not achieved within 120 hours, an explanation why startup could not be achieved within this time.

C. A detailed description of the startup, including reason for operation and whether the Startup, Shutdown and Malfunction Plan and Operations, Maintenance and Monitoring Plan were followed.

D. An explanation why either of the plans in (C) above and other established startup procedures could not be performed, if not performed.

E. Whether exceedance of Condition 7.5.3(b) may have occurred during startup. If an exceedance may have occurred, an explanation of the nature of opacity, i.e., severity and duration, during the startup and the nature of opacity at the conclusion of startup.

ii. A maintenance and repair log for each affected sulfur recovery unit, listing each activity performed with date.

e. Records for Malfunctions and Breakdowns

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of an affected Claus Sulfur Recovery Plant subject to Condition 7.5.3(b) during malfunctions and breakdown, which as a minimum, shall include:

i. Date and duration of malfunction or breakdown.

ii. A detailed explanation of the malfunction or breakdown.

iii. An explanation why the affected sulfur recovery units continued to operate in accordance with Condition 7.5.3(e).

iv. The measures used to reduce the quantity of emissions and the duration of the event.

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

vi. The amount of release above allowable emissions during malfunction/breakdown.

f. Any records required by the Consent Decree, Paragraph 44.

g. Records demonstrating that the oxidizers (combustors) are operating when an affected sulfur recover train is in operation.

h. Records demonstrating that all H_2S containing gases generated from the treatment of fuel gas are vented to the SRUs.

i. Records of operation and maintenance of the ambient air monitors and of any alarms set off by the ambient air monitors for H_2S required by Condition 7.5.8(b).

7.5.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected sulfur recovery units with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. Reporting of Startups for SRUs

The Permittee shall notify the Illinois EPA, Compliance Section and Regional Field Office, concerning continued operation of the affected sulfur recovery units if the startup period exceeds five days.

ii. If the concentration of H_2S at the remote monitors required by Condition 7.5.8 exceeds the alarm set point, the Permittee shall immediately report such information to local and state officials by telephone in a manner consistent with the procedure set forth in the Chemical Safety Contingency Plan prepared for this site.

iii. Any reports and notifications required by the NESHAP, 40 CFR 63.1575 and Table 43 of Subpart UUU. The semi-annual reports required by Table 43 of Subpart UUU shall be considered deemed prompt notification of associated deviations.

b. Reporting of Malfunctions and Breakdowns of the BSRP

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of an affected sulfur recovery unit subject to Condition 7.5.3(e) during malfunction or breakdown:

i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice within 15 days to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected sulfur recovery units was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee

to minimize and correct deficiencies with chronology, and when the repairs were completed or when the affected sulfur recovery unit was taken out of service.

iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the affected sulfur recovery units will be taken out of service.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected sulfur recovery units. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.5.12 Compliance Procedures

a. The Permittee shall follow the requirements in the following tables for initial and final compliance for the affected sulfur recovery units (SRUs).

i. Table 33: Initial Compliance with HAP Emission Limits for SRUs.

ii. Table 34: Continuous Compliance with HAP Emission Limits for SRUs.

iii. Table 35: Continuous Compliance with Operating Limits for HAP Emissions from SRUs.

iv. Table 38: Initial Compliance with Work Practice Standards for HAP Emissions from Bypass Lines.

v. Table 39: Continuous Compliance with Work Practice Standards for HAP Emissions from Bypass Lines.

b. Compliance with Conditions 7.5.3(b) and (c) are addressed by the control requirements of Conditions 7.5.5(a) and (f), the monitoring requirements of Condition 7.5.8(a), the records required in Conditions 7.5.9(c), (g), (h) and (i) and the reporting requirements of Condition 7.5.10(a)(iii).

c. Compliance with Condition 7.5.3(d) is addressed by the records required in Condition 7.5.9(d) and the reporting requirements of Condition 7.5.10(a)(i).

d. Compliance with Condition 7.5.3(e) is addressed by the records required in Condition 7.5.9(e) and the reporting requirements of Condition 7.5.10(b).

e. Compliance with the PM, CO, VOM, SO_2 and PM/PM_{10} emission limitations of Condition 7.5.6 is addressed by the records required in Condition 7.5.9(a).

f. Compliance with Condition 7.5.7 is addressed by the records required in Condition 7.5.9(c).

g. Compliance with Condition 7.5.8(b) is addressed by the records required in Condition 7.5.9(i) and the reporting requirements of Condition 7.5.10(a)(ii).

7.6 Unit: Blending and Transfer (Loading)

7.6.1 Description

Any of the various products produced at the refinery may be shipped out by tank truck, tank car or barge. Vapors of highly volatile products or certain HAPs (i.e. benzene) are required to be controlled.

The control device for barge loading is only on the station that loads benzene. It cannot control emissions resulting from gasoline loading.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
51	333	Barge Loading	1968	Vapor Combustor
52	334	Santa Fe LPG and Racing Gasoline Tank Car Loading Rack	1968	Submerged Loading Pipe for Racing Gasoline
53	335	Fuels Transport Loading Rack	1968	Enclosed Flare
54	337	ICG Tank Car Loading Rack	1968	Submerged Loading Pipe
55	338	Solvent Truck Loading Rack	1968	Submerged Loading Pipe
56	335	Three Ethanol Storage Tanks	2001	Submerged Loading Pipe
57	335	Gasoline Additive Storage Tank (335TK-401)	1992	Submerged Loading Pipe

7.6.3 Applicable Provisions and Regulations

a. The “affected barge loading operations” for the purpose of these unit-specific conditions, are described in Conditions 7.6.1 and 7.6.2.

i. A. When loading benzene the operation is subject to 40 CFR 61 Subpart BB, Benzene Transfer Operations. The specific standard is 40 CFR 61.302(b), which requires a control device that reduces benzene emission by 98 weight percent. Section 61.302(e) requires that the marine vessels be vapor tight.

B. Materials other than benzene may be loaded pursuant to this federal rule.

ii. A. Gasoline and crude oil loading are subject to 35 IAC 218 Subpart GG. This rule requires use of a control device if gasoline or crude oil are loaded between May 1 and September 15. Since this barge operation is not equipped with a control device for gasoline or crude oil loading, no gasoline or crude oil may be loaded between May 1 and September 15. See Condition 7.6.4(e) for loading of gasoline between September 16 and April 30 of the following year.

B. Materials other than gasoline or crude oil may be loaded pursuant to this state rule.

b. The Santa Fe LPG loading rack when loading LPG is not subject to any specific emission standards. There are typically no emissions during the loading itself, but a small amount of material that was between the valves may evaporate when disconnected.

c. The fuels transport loading rack is subject to the following requirements.

i. When loading gasoline the operation is subject to 40 CFR 63.650 (Petroleum Refinery NESHAP), which in turn requires compliance with certain provisions of 40 CFR 63 Subpart R, Gasoline Terminals (§ 63.420 thru 63.429). The specific emission standard for the loading racks is contained in § 63.422(b) which limits emissions to 10 mg of total organic compounds per liter of gasoline loaded. The tank trucks loaded must meet vapor-tight requirements described in 40 CFR 63.425. The equipment leak provisions (i.e. for pumps and valves) is covered in Section 7.8 under Fugitive Emissions.

ii. When loading gasoline the operation is subject to 35 IAC 218.582(a)(i) which limits emissions to 80 mg of VOM per liter of gasoline loaded. Compliance with Condition 7.6.3(c)(i) shall be deemed compliance with this requirement.

iii. Other fuels such as diesel oil or aviation fuel may be loaded without use of the control device.

d. The ICG tank car loading operation and solvent truck loading operation are subject to 35 IAC 218.122(a) which states that no person shall cause or allow the discharge of more than 8 lb/hr of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having throughput of greater than 40,000 gal/day into any railroad tank car, tank truck or trailer unless such loading area is

equipped with submerged loading pipes. All three operations have these submerged loading pipes. The Santa Fe loading rack when loading racing gasoline is not subject to this requirement because throughput is less than 40,000 gal/day.

e. The three ethanol tanks and the gasoline additive tank (335 TK-401) are subject to a NSPS, 40 CFR 60, Subpart Kb. However, due to the size and vapor pressure of the contents, the tanks are only subject to the recordkeeping requirements of 40 CFR 60.116b(b) and (c).

7.6.4 Non-Applicability of Regulations of Concern

a. The barge terminal is not subject to the MACT standard in the NESHAP for Marine Tank Vessel loading Operations [40 CFR 63.562(b)] because the substantive parts of the standard do not apply to existing sources with annual HAP emissions of less than 10 tons of an individual HAP and 25 tons of total HAPs, i.e., Group 2 sources. [40 CFR 63.560(a)] The barge terminal is not subject to the RACT standards in Subpart Y [40 CFR 63.562(c) and (d)] because the standard does not apply to sources with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil. [40 CFR 63.560(b)(1)] Source is defined as the marine terminal only.

b. Unit 122, UDEX, produces benzene, toluene, xylene and hexane, all of which are HAPs. Therefore, the UDEX Unit is subject to 40 CFR 63 Subpart F, G and H (HON Rules). These rules have control requirements for loading if certain transfer racks load HAP containing materials with a rack-weighted average vapor pressure greater than or equal to 1.5 psia (definition of Group 1 transfer rack in 40 CFR 63.111). The vapor pressures of the HAP-containing materials loaded through the ICG tank car loading rack and solvent tank truck loading rack have rack-weighted average vapor pressures on an annual basis of less than 1.5 psia and therefore they are Group 2 transfer racks which are not subject to HON rule control requirements.

   The HON rule does not apply to marine vessel loading.

c. The Santa Fe loading rack when loading racing gasoline has a throughput of less than 20,000 gal/day and therefore pursuant to the definition of 40 CFR 63.641 it is a Group 2 gasoline loading rack. As such, it is not required to meet the requirements of 40 CFR 63.650.

d. The three ethanol frac tanks (335 TK-5, 6, and 7) and the gasoline additive tank (335 TK-401) are not subject to 35 IAC 218.119, 121 or 122 because the size of the tanks are less than 40,000 gallons and/or the vapor pressure is less

1.5 psia. Although not required, the four tanks are equipped with submerged loading pipes.

e. For the marine terminal, the control requirements of 35 IAC 218.762(b) and (c) do not apply from September 16 of one year through April 30 of the following year.

f. The affected units using submerged pipes to comply are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected units employ a passive control measure, such as a seal, lid, or roof, that is not considered a control device because it acts to prevent the release of pollutants.

g. The affected units vented to a vapor combustor are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected units are subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i) or equivalent.

7.6.5 Control Requirements and Work Practices

a. The barge loading operation shall be operated to maintain its current status as a Group 2 marine vessel terminal pursuant to the definition in 40 CFR 63.641, that is, maintain HAP emissions from barge loading to less than 10 tons of an individual HAP and 25 tons of combined HAPs per year. The barge loading operation shall also be operated with an annual throughput of less than 10 million barrels of gasoline and 200 million barrels of crude oil.

b. The ICG tank car loading rack and solvent tank truck loading rack shall each be operated with a rack-weighted annual average vapor pressure of HAP-containing materials loaded of less than 1.5 psia so that they maintain their status as Group 2 transfer racks pursuant to the HON rules [see Condition 7.6.4(b)].

c. The Santa Fe loading rack when loading racing gasoline shall have a throughput of less than or equal to 20,000 gal/day, calculated as an average each calendar month, in order to maintain its status as a Group 2 gasoline loading rack [see Condition 7.6.4(c)].

d. The control equipment listed in Condition 7.6.2 shall be operated to meet the required emission reduction requirements specified in Condition 7.6.3(a) and (c).

7.6.6 Production and Emission Limitations

a. In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the three affected ethanol storage tanks are subject to the following:

Throughput and emissions from the three affected ethanol tanks (combined) shall not exceed the following limits:

Throughput (Gallons/Mo)	Throughput (Gallons/Year)	VOM Emissions (Tons/Year)
8,420,000	56,140,000	3.39

These limits are based on the information submitted in the construction permit.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 01040066, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

b. Vapor pressure of the material in the gasoline additive tank (335 TK-401) shall not exceed 0.05 psia and VOM emissions shall not exceed 0.1 ton/yr. [T1, Construction Permit 92010070]

c. Throughput of gasoline at the fuels transport loading rack and emissions of NO_x and CO from the enclosed flare control device for the loading rack shall not exceed the following:

Throughput (Gallons/Year)	NO_x Emissions (Tons/Year)	CO Emissions (Tons/Year)
617,510,000	14.8	37.1

These limits are based on the information submitted in the construction permit.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 98030075, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

7.6.7 Testing Requirements

a. All barges that load benzene shall provide certification that they have been tested for vapor tightness annually using EPA Method 21 as described in 40 CFR 60, Appendix A or otherwise comply with the provisions of 40 CFR 61.302(e).

b. All transport tank trucks that load gasoline shall provide certification that they have been tested for vapor tightness annually using USEPA Method 27, as described in 40 CFR 60, Appendix A, as required by 40 CFR 63.425(e) and 35 IAC 218.584(a)(6).

c. Any new material loaded for which the vapor pressure or HAP content is not known and which could change a loading area from a Group 2 to Group 1 status shall have its vapor pressure measured prior to loading.

7.6.8 Monitoring Requirements

a. Barge Loading Operations

i. The temperature in the combustion chamber of the vapor combustor on the barge loading operation shall be monitored. [40 CFR 61.303(a)(1)]

ii. The Lemont Refinery is implementing an Alternative Monitoring Plan, submitted to USEPA, to document that the gases that are routinely combusted are very low in H_2S, consistent with the low level of sulfur in the unit. (§64 and pursuant to Construction Permit 05070003)

b. Gasoline Loading Rack

i. The presence of a flame in the enclosed flare on the gasoline loading rack shall be monitored. [40 CFR 63.427(a)(4)]

ii. The Lemont Refinery is implementing an Alternative Monitoring Plan, submitted to USEPA, to document that the gases that are routinely flared are very low in H_2S, consistent with the low level of sulfur in the unit. (§64 and pursuant to Construction Permit 05070003)

c. The above requirements (a(ii) and b(ii) above) are imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the

construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected loading operations to demonstrate compliance with Condition 5.6.1, 7.6.3, 7.6.5 and 7.6.6, pursuant to Section 39.5(7)(b) of the Act:

a. Barge dock vapor combustor combustion chamber temperature;

b. Presence of a pilot flame in the fuels loading rack enclosed flare;

c. If the vapor combustor combustion chamber temperature is not in its normal operating range or a pilot flame is not present, records must be kept demonstrating that materials for which a control device is required were not being loaded;

d. Throughput of all materials (gal/or lb/mo);

e. i. Documents that verify that all gasoline trucks loaded underwent annual certification pursuant to 40 CFR 63.425 and 35 IAC 218.584 and were shown to be vapor tight an carry the proper sticker. These tests include: Method 27, Internal Vapor Valve, Leak Detection Test, Nitrogen Press Decay Field Test, and Continuous Performance Pressure Decay Test;

ii. Documents using Method 21 on annual vapor tightness testing for barges loaded with benzene at the barge dock as required by 40 CFR 61.302(e). [40 CFR 61.305(h)]

f. VOM emissions (lb/mo);

g. VOM emissions and throughput of ethanol from the three ethanol tanks to verify compliance with Condition 7.6.6; and

h. Annual HAP emissions from barge loading operations to verify that barge loading remains a Group 2 marine vessel terminal as required by Condition 7.6.5(a).

i. Rack-weighted average vapor pressure of materials loaded at the ICG tank truck loading rack and solvent tank truck loading rack (psia), calculated separately.

j. Records required by the Organic Liquid Storage Vessel NSPS (40 CFR 60 Subpart Kb) recordkeeping requirements for three ethanol tanks and gasoline additive tank. [40 CFR 60.116(b) and (c)]

k. NO_x and CO emissions from the enclosed flare that controls the fuels transport loading rack.

7.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of affected loading operation with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. Semi-annual reports as required by 40 CFR 63.428(g);

b. Quarterly reports required by 40 CFR 61.305(f); and

c. Within 30 days, a report identifying any exceedance of Conditions 7.6.3(a) or (c), 7.6.6; the barge loading operation becoming a Group 1 marine terminal; the Santa Fe racing gasoline loading rack becoming a Group 1 gasoline loading rack; or the ICG solvent tank loading operation or the solvent truck loading operation becoming a Group 1 HON transfer rack.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected loading operation. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.6.12 Compliance Procedures

a. Compliance with Condition 7.6.3(a) is addressed by the operating requirements of Condition 7.6.5(a) and (d), the testing requirements of Condition 7.6.7(a), the records required in Condition 7.6.9(a), (b) and (d) and the reporting requirements of Condition 7.6.10(b).

b. Compliance with Condition 7.6.3(b) is addressed by the operating requirements of Condition 7.6.5(c) and the records required in Condition 7.6.9(d).

c. Compliance with Condition 7.6.3(c) is addressed by the operating requirements of Condition 7.6.5(d), the testing requirements in Condition 7.6.7(b), the continuous monitoring requirements in Condition 7.6.8(b), the records required in Condition 7.6.9(b) through (e) and the reporting requirements of Condition 7.6.10(a).

d. Compliance with Condition 7.6.3(d) is addressed by the operating requirements of Condition 7.6.5(b), the testing requirements in Condition 7.6.7(c) and the records required in Condition 7.6.9(i).

e. Compliance with the emission limitation of Condition 7.6.6 is addressed by the records required in Condition 7.6.9(d), (f), (g), (j) and (k).

f. VOM emissions shall be calculated using AP-42 emission factors for marine loading, truck loading, and railcar loading.

g. Emissions (lb/mo) = Emission Factor (lb/gal) x Throughput or Amount Loaded(gal/mo)

h. For loading operations which have control equipment expressed as a percentage control efficiency, emissions calculations may be adjusted based on the emission test results for VOM reduced by the control device.

i. For loading operations which have the control standard expressed as an emission rate per volume (e.g., mg/liter), emissions calculations shall be calculated as the most recent test value emission rate times volume throughput.

j. Emissions from the ethanol storage tanks shall be calculated using the USEPA TANKS 4.0 program [i.e., calculation procedures described in USEPA’s AP-42, 5th ed. (September 1997)].

7.7 Unit: Gas Recovery System and Flares

7.7.1 Description

The Flare System is a safety device that collects and combusts process gas from safety relief valves, test instruments and monitors, waste process gas and blowdown, and gases collected via vents and drains during depressurization of vessels or equipment in preparation for turnaround or maintenance. The gases that are collected are usually of sufficient quantity that most of it may be compressed and recovered and then used in heaters and boilers or sent off-site (sales gas) after passing through amine absorbers to remove H_2S (See Section 7.5). The excess amount that cannot be compressed and recovered is sent to a flare.

This section does not include the enclosed flare that is used as a control device for fuels transport loading (See Section 7.6). It also does not include the flare on the alkylation unit (See Section 7.4).

Except for the flare itself, the piping systems to the flare, including the gas recovery system, do not have open vents.

The flares equipped with a system for using steam (i.e., steam-assisted) to assure more complete combustion and therefore are defined as smokeless. Four of the flares are also downstream of flare gas recovery systems.

The flare (844C-5) for the HF Alkylation Unit was included in Section 7.4 and is not repeated here.

7.7.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment[a]
58	844	North Refinery Flare (844C-1)	1973	Steam-assist, North Refinery Flare Gas Recovery System (844GB-403A/B)

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment[a]
59	844	South Refinery Flare (844C-2)	1973	Steam-assist, South Refinery Flare Gas Recovery System (844GB-401)
60	844	South Refinery Flare (844C-3)	1973	Steam-assist, South Refinery Flare Gas Recovery System (844GB-401)
61	844	Coker 2 Flare (844C-4)	1985	Steam-assist, Coker 2 Flare Gas Recovery System (844GB-402A/B) [Also Referred to as 8-4GB-4A/B]

[a] Although listed as control equipment, flare gas recovery systems are more accurately classified as pollution prevention systems.

7.7.3 Applicable Provisions and Regulations

In addition to the applicable regulations identified in Section 5, this unit is subject to the following provisions and regulations.

a. An “affected flare” for the purposes of these unit-specific conditions, is a smokeless flare identified in Condition 7.7.2 that is used to safely destruct releases from safety relief valves, vapor blowdown systems, etc.

b. Pursuant to 35 IAC 218.143, each affected flare operated as a control device for the purposes of controlling emissions from safety relief valves and vapor blowdown systems shall be smokeless. Pursuant to the definition of a smokeless flare in 35 IAC 211.6050, the PM emitted to the atmosphere shall not have an appearance density or shade darker than

No. 1 on the Ringlemann Chart, that is equivalent to an opacity of 20%.

c. Consent Decree Requirements

i. General

The Permittee shall comply with the requirements of a Consent Decree (CD) signed with the USEPA and Illinois EPA and with an official date of entry on January 26, 2005. See Condition 5.2.7 for general terms of the Consent Decree. The Consent Decree covered the Lemont refinery as well as refineries in other states.

The requirements for hydrocarbon flaring at the Lemont refinery are reiterated below. Note that all of the requirements of the Consent Decree that apply to hydrocarbon flaring are listed here rather than in other applicable part of Section 7.7, e.g. emission limits, monitoring and recordkeeping.

ii. The Permittee shall at all times and to the extent practicable, including during period of startup, shutdown, upset and/or malfunction, implement good air pollution control practices to minimize emissions from its hydrocarbon flaring devices identified in Condition 7.7.2 and also the Alky Flare (844C-5) consistent with 40 CFR 60.11(d), by investigating, reporting and correcting hydrocarbon flaring incidents (§74 of the Consent Decree) greater than 500 lb SO_2.

iii. The flares are required to comply with the requirements of 40 CFR 60, Subpart A and J for fuel combustion devices used as emergency control devices for quick and safe release of gases. These NSPS limits shall be met by use of any combination of the following methods:

A. Operating and maintaining a flare gas recovery system.

B. Eliminating continuous fuel gases so that only upset gases and gases released due to emergency malfunctions are released.

C. Monitoring the gases with a CEMs for H_2S content.

D. The first semi-annual report for the flaring devices shall include an identification of the option used to implement the NSPS for each flare.

E. Within 90 days of bringing a flare into compliance with the NSPS 40 CFR 60.18, a performance test shall be conducted using the method described in 40 CFR 60.18, or submit velocity calculations which demonstrate that the NSPS Hydrocarbon Flaring Device meets the performance specification required by 40 CFR 60.18.

The above requirement is imposed as a result of its being a requirement of a Consent Decree between CITGO, the USEPA and the Illinois EPA (Civil Action Number H-04-3883 entered January 26, 2005 in the Southern District of Texas). Many of the Consent Decree requirements were then incorporated into Construction Permit 05070003. The above requirement from the construction permit is one of several incorporated into this CAAPP permit. This condition is enforceable after the Consent Decree expires as required by Section V, Subpart N of the Consent Decree (Paragraphs 131-134).

iv. A. The Permittee shall investigate the cause of future acid gas flaring (combustion of hydrogen-sulfide-laden gas produced either by regeneration of an amine scrubber solution or stripping refinery sour water) and tail gas incidents greater than 500 lb SO_2, and minimize acid gas flaring and tail gas incidents. (§78)

B. Within 45 days of each incident with emissions greater than 500 lb SO_2, the Permittee shall submit to the USEPA and Illinois EPA (Compliance Unit) a report that addresses the item in Section 79 of the Consent Decree. (§79)

C. In response to any acid gas flaring incident (acid gas producing more than 500 lb SO_2 in 24 hours), the Permittee shall take corrective action to minimize the likelihood of a recurrence of a similar incident. (§80)

D. Tail gas incidents shall be investigated and reported similar to acid gas incidents except that the emission calculation is different. (§93)

v. The Permittee shall prepare an Alternative Monitoring Plan for the 844C-5 Alky Flare and have installed equipment to minimize hydrocarbon flaring from coker

blowdown cycles on the 844C-2, 844C-3 and 844C-4 flares. The calculation of release amount is in Section 92 of the Consent Decree. Hydrocarbon flaring incidents shall be investigated, reported and corrective action taken. (§94)

d. Malfunction and Breakdown Provisions

Subject to the following terms and conditions, the Permittee is authorized to continue operation of the flares in violation of the applicable requirements of Condition 7.7.3(c)(ii) in the event of a malfunction or breakdown of the flare gas recovery compressor or other process malfunction.

This authorization is provided pursuant to 35 IAC 201.149, 201.161 and 201.262, as the Permittee has applied for such authorization in its application, generally explaining why such continued operation would be required to provide essential service or to prevent injury to personnel or severe damage to equipment, and describing the measures that will be taken to minimize emissions from any malfunctions and breakdowns. This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation in such circumstances.

i. This authorization only allows such continued operation as necessary to provide essential service or to prevent injury to personnel or severe damage to equipment and does not extend to continued operation solely for the economic benefit of the Permittee.

ii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable reduce load to the flare, repair the flare, send the gases to other flares or undertake other action so that excess emissions cease. Excess emissions are defined as greater than 500 lb of SO_2 in 24 hours.

iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 7.7.9(k) and 7.7.10(b). For these purposes, time shall be measured from the start of a particular incident. The absence of excess emissions for a short period shall not be considered to end the incident if excess emissions resume. In such circumstances, the incident shall be considered to continue until corrective actions are taken so that excess emissions cease or the Permittee takes the appropriate action.

iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives

of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.

v. This authorization does not relieve the Permittee from the continuing obligation to minimize excess emissions during malfunction or breakdown. As provided by 35 IAC 201.265, an authorization in a permit for continued operation with excess emissions during malfunction and breakdown does not shield the Permittee from enforcement for any such violation and only constitutes a prima facie defense to such an enforcement action provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

7.7.4 Non-Applicability of Regulations of Concern

a. The four flares (Permit Emission Unit Nos. 58-61) are not subject to the performance and monitoring requirements of 40 CFR 63.11 because each of the flares is preceded by a fuel gas recovery system. Pursuant to 40 CFR 63.641, gaseous streams that are routed to a fuel gas system do not qualify as miscellaneous process vents under the Refinery NESHAP.

b. The affected flares are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected flares do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.7.5 Control Requirements and Work Practices

a. Each flare shall be equipped with an auto ignition system.

b. The Permittee shall perform preventative maintenance on the affected compressors in order to minimize the likelihood of a malfunction and expedite repairs through the use of overtime, rushed delivery of parts, and other similar measures in order to minimize the length of a malfunction.

7.7.6 Production and Emission Limitations

In addition to Condition 5.3.2 and the source-wide emission limitations in Condition 5.6, the affected Coker 2 flare (844C-4) is subject to the following:

Pollutant	Emissions (Tons/Year)
VOM	9.9
CO	29.9
SO_2	0.4
PM	0.2

These limits are based on the maximum operation. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Construction Permit 83010013, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.7.7 Testing Requirements

Testing requirements are not set for the affected flares. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.7.8 Monitoring Requirements

The presence of each affected flare's pilot flame shall be monitored using a thermocouple or other equivalent device to detect the presence of a flame.

7.7.9 Recordkeeping Requirements

a. In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for affected flares to demonstrate compliance with Condition 5.6.1, 7.7.3, 7.7.5 and 7.7.6, pursuant to Section 39.5(7)(b) of the Act:

   i. Date and duration of any time when the pilot flame monitoring equipment of an affected flare was not in operation, with explanation;

   ii. Date and duration of any time when there was no pilot flame present at an affected flare, with explanation.

b. Records for Malfunctions and Breakdowns

   The Permittee shall maintain records, pursuant to 35 IAC 201.263, of flaring events subject to Condition 7.7.3(d) during malfunctions and breakdown, which as a minimum, shall include:

   i. Date and duration of malfunction or breakdown.

   ii. A detailed explanation of the malfunction or breakdown.

iii. An explanation why the affected units vented to the flare gas recovery system continued to operate in accordance with Condition 7.7.3(d).

iv. The measures used to reduce the quantity of emissions and the duration of the event.

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

vi. The amount of release.

c. Emissions information to verify compliance with Condition 7.7.6.

7.7.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected flare with the permit requirements as follows within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

If all of the pilot flames on a flare are extinguished and at least one of them is not relit within three hours, a notification shall be sent within 15 days that includes:

i. Duration of the possible exceedance;

ii. An estimate of the amount of emissions in excess of the applicable standard;

iii. A description of the cause of the possible exceedance; and

iv. When compliance was reestablished.

b. Reporting of Malfunctions and Breakdowns

The Permittee shall provide the following notification and reports to the Illinois EPA, Air Compliance Unit and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued flaring with excess emissions (more than 500 lb SO_2 within a rolling 24-hour period) subject to Condition 7.7.3(d) during malfunction or breakdown:

i. Within 5 working days, the Permittee shall give a written follow-up notice to the Illinois EPA, Air Compliance Unit and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the affected flare’s associated units was necessary, the length of time during which operation continued under such

conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the affected flare was taken out of service. This notice shall be deemed prompt notification of flare events with excess emissions.

ii. Within 45 days of the flaring event having excess emissions (greater than 500 lb SO_2 in 24 hours from an individual hydrocarbon flare), submit a report that sets forth:

A. Date and time the incident started and ended.

B. Estimate of the quantity of sulfur dioxide that was emitted, and the calculations used to determine that quantity.

C. Steps taken to limit the duration and/or quantity of sulfur dioxide emissions associated with the incident.

D. Detailed analysis that sets forth the root cause.

E. Analysis of the measures, if any that are available to reduce the likelihood of a recurrence of the incident.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected flares. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.7.12 Compliance Procedures

a. Compliance with Condition 7.7.3 is addressed by the monitoring requirements of Condition 7.7.8 and the records required in Condition 7.7.9(a).

b. Compliance with the Consent Decree requirements of Condition 7.7.3(c) is addressed by the requirements within that rule.

c. Compliance with the emission limitation of Condition 7.7.6 is addressed by the records required in Condition 7.7.9(c).

7.8 Unit: Fugitive VOC Emissions From Components

7.8.1 Description

The Permittee operates petroleum refining process units that include components that are considered equipment in organic HAP service. LDAR is short for leak detection and repair.

7.8.2 List of Emission Units and Air Pollution Control Equipment

Equipment in organic HAP service includes various pumps, compressors, relief valves, sampling connections, valves, and connectors.

7.8.3 Applicable Provisions and Regulations

a. An "affected petroleum refining process unit," for the purposes of these unit specific conditions is a petroleum refining process unit as identified in 40 CFR 63.640(a) located at a source that has the potential to emit 10 tons/year or more of any HAP or 25 tons/year or more of any combination of HAPs. Except as provided in the Refinery NESHAP, each unit in organic HAP service is subject to the equipment leak requirements of 40 CFR 63 Subpart CC. The specific requirement with this subpart (40 CFR 63.648(a)) references the provisions of 40 CFR 60 Subpart VV.)

b. In an effort to streamline recordkeeping requirements, and account for all possible operating scenarios, all affected petroleum refining process units are considered to be in organic HAP service and calculation of percentage leaking equipment is done on a source-wide basis.

c. Each affected petroleum refining process unit is also subject to 35 IAC 218.445-452.

d. Unit 122 (the UDEX unit) is subject to the equipment leak requirements of the HON rule, 40 CFR 63 Subpart H (40 CFR 63.160-182). These requirements are more stringent than the previously cited 40 CFR 60 Subpart VV and 35 IAC 218.445-452, and therefore compliance with 40 CFR 63 Subpart H shall be deemed compliance with 40 CFR 60 Subpart VV and 35 IAC 218.445-452.

e. Units 102 (FCC Gasoline Hydrotreater-ISAL/SHU), 103 (LSR Hydrotreater), 111 (Crude Unit), 212 (Unsaturated Gas Plant), and 120 (HF Alkylation) are subject to 40 CFR 60 Subpart GGG, NSPS for Equipment Leaks in Petroleum Refineries.

f. Process drains in Units 102, 103, 111 (part), 113 (part), 119, and 121 are subject to 40 CFR 60 Subpart QQQ, NSPS for VOM Emissions from Petroleum Refinery Wastewater Systems. See Section 7.9.

g. With these various multiple and intersecting requirements, the Permittee has prepared two tables outlining applicability of the various programs by unit and by component type.

These two tables are in Attachment 6. Table 6-1 is a list of the Permittee's emission unit numbers with columns indicating applicability of the various rules listed in Condition 7.8.3 (a) through (f). Table 6-2 lists the leak standard for various pieces of equipment (pumps, valves, compressors, etc.) and frequency of monitoring, with a final column listing the most stringent standard. The most stringent may be a hybrid of two programs, for instance one requiring more frequent monitoring and another having a definition of a leaking component at a lower level. Except as noted in Table 2 of Attachment 6, Permittee shall comply with the most stringent requirements identified for each unit as identified in Attachment 6.

7.8.4 Non-Applicability of Regulations of Concern

a. Pursuant to 40 CFR 63.640(p), equipment leaks that are also subject to the provisions of 40 CFR 60 parts 60 and 61 are required only to comply with the provisions of 40 CFR 63 Subpart CC.

b. The affected leaking components are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected leaking components do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.8.5 Control Requirements and Work Practices

a. Compressors

i. Each compressor, except compressors meeting the criteria specified in 40 CFR 60.482-3(h) or (i) and except as provided in 40 CFR 60.482-1(c), shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere [40 CFR 60.482-3(a)]. This requirement does not apply if the seals are equipped with a closed vent system which vents to a control device that meets the requirements of 40 CFR 60.482-10. [40 CFR 60.482-3(h)] These requirements also do not apply if the compressor is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and tested annually as provided for in 40 CFR 60.482-3(i).

ii. The seal system shall be [40 CFR 60.482-3(b)]:

A. Operated with barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

B. Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with 40 CFR 60.482-10 (Condition 7.8.5(c)); or

C. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

iii. The barrier fluid system shall be [40 CFR 60.482 - 3(c), (d), and (e)]:

A. In heavy liquid service or shall not be in VOC service; and

B. Equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both so as to allow detection of a leak. This sensor shall be checked daily or be equipped with an audible alarm. [40 CFR 60.482-3(g)]

C. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.8.8(f).

b. Sampling Connection Systems

Except for in-situ sampling systems and sampling systems without purges, each sampling connection system in greater than 5% organic HAP service shall be equipped with a closed-purge, closed-loop, or closed-vent system that meets one of the following requirements [40 CFR 60.482-5]:

i. Returns the purged process fluid directly to the process line; or

ii. Collects and recycles the purged process fluid to the process line; or

iii. Designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10 (Condition 7.8.5(c)).

c. Closed Vent Systems and Control Devices

Pursuant to 40 CFR 60.482-10(d) and (m) flares used to comply with the requirements of 40 CFR 60 Subpart VV shall comply with the requirements of 40 CFR 60.18 and shall be operated at all times when emissions may be vented to it unless there is a recovery device prior to the flare. Currently, the Permittee only utilizes flares to control fugitive emissions. Because there are recovery devices prior to the flares for all units except Unit 120, those flares are not required to comply with 40 CFR 63.11.

d. The above listed control requirements of Conditions 7.8.5(a) through (c) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV) as identified in Attachment 2. For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.6 Production and Emission Limitations

Specific emission limitations that include emissions from fugitive components associated with an emission unit are included in the unit specific sections of the permit.

7.8.7 Operating Requirements

a. Pressure Relief Devices in Gas/Vapor Service

i. Except during pressure releases, each pressure relief device in gas/vapor service, except for pressure relief devices meeting the criteria specified in 40 CFR 60.482-4(c), shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. [40 CFR 60.482 - 4(a)]

ii. After each pressure release, each pressure relief device subject to (i) shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as allowed by Condition 7.8.8(f). [40 CFR 60.482-4(b)]

b. Open-ended Valves or Lines

i. Except as provided for in 40 CFR 60.482-1(c), each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve that shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line [40 CFR 60.482-6(a)];

ii. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed [40 CFR 60.482-6(b)]; and

iii. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that required venting the line between the block valves but shall comply with (i) at all other times [40 CFR 60.482-6(c)].

c. Operating requirements of Conditions 7.8.7(a) and (b) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.8 Inspection and Monitoring Requirements

a. Pumps in Light Liquid Service

i. Except pumps meeting the criteria specified in 40 CFR 60.482-2(d), (e), or (f) and as provided for in 40 CFR 64.482-1(c), each pump in light liquid service shall be monitored monthly to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b), Method 21. [40 CFR 60.482-2(a)(1)]

ii. Each pump in light liquid service shall be visually inspected each calendar week for indication of liquid dripping from the pump seal. [40 CFR 60.482-2(a)(2)]

iii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.8.8(f). [40 CFR 60.482-2(c)]

b. Pressure Relief Devices in Gas/Vapor Service

Pressure relief devices subject to the requirements of Condition 7.8.7(a) shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c), Method 21, no later than 5 calendar days after a pressure release. [40 CFR 60.482-4(b)(2)]

c. Valves in Gas/Vapor Service and in Light Liquid Service Skip Period Leak Detection and Repair

i. Review of prior monitoring data for valves and pumps show the equivalent of five consecutive quarterly

leak detection periods with less than 2% of the valves leaking. Therefore, the Illinois EPA has determined that the Permittee qualifies for less frequent monitoring of valves and pumps as allowed by 40 CFR 63.648(b). The Permittee shall monitor for leaks at valves as follows:

Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored annually (skip three quarterly leak detection periods) to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21).

ii. In the event that the percent valves leaking during any annual leak monitoring period is greater than 2.0%, the Permittee shall fulfill the following leak monitoring and repair requirements in lieu of Condition 7.8.8(c)(i) [40 CFR 60.483-2(a)(4)]:

A. Each valve, except valves meeting the criteria specified in 40 CFR 60.482-7(f), (g), or (h) shall be monitored monthly to detect leaks (an instrument reading of 10,000 ppm or greater) by the methods specified in 40 CFR 60.485(b) (Method 21) [40 CFR 60.482-7(a)];

B. Monitoring for any valve for which a leak is not detected for 2 successive months may be reduced to monitoring in only the first month of every quarter, beginning with the next quarter. If a leak in that valve is subsequently detected, the valve shall be monitored monthly until a leak is not detected for two consecutive months [40 CFR 60.482-7(c)];

C. After two consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip one of the quarterly leak detection periods for valves in gas/vapor and light liquid service [40 CFR 60.483-2(a)(2)];

D. After five consecutive quarterly leak detection periods with the percent valves leaking equal to or less than 2.0%, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service (Condition 7.8.8(c)(i)) [40 CFR 60.483-2(a)(3)];

E. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15

calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.8.8(f).

d. Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid Service or Heavy Liquid Service, and Flanges and Other Connectors

i. Pumps and valves in heavy liquid service, pressure relief devices in light liquid service, and flanges and other connectors shall be monitored within five days by the methods specified in 40 CFR 60.485(b) (Method 21) if evidence of a potential leak (an instrument reading of 10,000 ppm or greater) is found by visual, audible, olfactory, or any other detection method [40 CFR 60.482-8(a)]; and

ii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.8.8(f).

e. Closed Vent Systems and Control Devices

i. The Permittee shall monitor the flare(s) used to comply with 40 CFR 60 Subpart VV to ensure that they are operated and maintained in conformance with their designs [40 CFR 60.482-10(e)];

ii. Each closed vent system, except closed vent systems meeting the criteria specified in 40 CFR 60.482-10(i), (j), or (k), that is constructed of hard-piping shall be visually inspected annually for visible, audible, or olfactory indications of leaks [40 CFR 60.482-10(f)];

iii. When a leak (an instrument reading greater than 500 ppm by volume above background or by visual inspection) is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after the leak is detected, with the first attempt at repair being made no later than 5 days after detection, except as provided in Condition 7.8.8(f).

f. Delay of Repairs

i. Delay of repair of equipment for which leaks have been detected will be allowed for the following [40 CFR 60.482-9(a) and (b)]:

A. If the repair is technically infeasible without a process unit shutdown. Repair of this

equipment shall occur before the end of the next process unit shutdown; or

B. For equipment which is isolated from the process and which does not remain in VOC service.

ii. Delay of repair for valves will be allowed if [40 CFR 60.482-9(c) and (e]):

A. The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair;

B. When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10 (Condition 7.8.5(c));

C. Delay of a repair beyond a unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]

iii. Delay of repair for pumps will be allowed if 40 CFR 60.482-9(d)]:

A. Repair requires the use of a dual mechanical seal system that includes a barrier fluid; and

B. Repair is completed as soon as practicable, but not later than 6 months after the leak is detected.

g. The inspection and monitoring requirements of Conditions 7.7.8(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For equipment subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for affected leaking components to demonstrate compliance with

Condition 5.6.1, 7.8.3, 7.8.4, 7.8.5, 7.8.7, and 7.8.8 pursuant to Section 39.5(7)(b) of the Act:

a. For each leak detected from pumps, compressors, or valves, the Permittee shall [40 CFR 60.486(b)]:

   i. Attach a weatherproof and readily visible identification to the leaking equipment, marked with an equipment identification number;

   ii. The identification on a valve may be removed after the valve has been monitored for two successive months as specified in Condition 7.8.8(c)(ii)(B) and no leak has been detected during those two months; and

   iii. The identification on equipment other than a valve, may be removed after the leak has been repaired.

b. For each leak detected from pumps, compressors, or valves, the Permittee shall record the following information in a log that is kept in a readily accessible location [40 CFR 60.486(c)]:

   i. The instrument and operator identification numbers and the equipment identification numbers;

   ii. The date the leak was detected and the dates of each attempt to repair the leak;

   iii. Repair methods applied in each attempt to repair the leak;

   iv. “Above 10,000” if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) (Method 21) after each repair attempt is equal to or greater than 10,000 ppm;

   v. “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;

   vi. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown;

   vii. The expected date of successful repair of the leak if a leak is not repaired within 15 days;

   viii. Dates of process unit shutdown that occur while the equipment is unrepaired; and

   ix. The date of successful repair of the leak.

c. For each closed vent system and control device used to comply with the requirements of 40 CFR 60 Subpart VV, the Permittee shall maintain the following information in a readily accessible location [40 CFR 60.486(d)]:

   i. Detailed schematics, design specifications, and piping and instrumentation diagrams;

   ii. The dates and descriptions of any changes in the design specifications;

   iii. A description of the parameter or parameters monitored, as required by Condition 7.8.8(e)(i), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for monitoring;

   iv. Periods when the closed vent system and control device required to comply with 40 CFR 60 Subpart VV are not operated as designed, including periods when a flare pilot light does not have a flame;

   v. Dates of startups and shutdowns of closed vent systems and control devices used to comply with the requirements of 40 CFR 60 Subpart VV.

d. The Permittee shall maintain the following information regarding all equipment subject to the requirements of 40 CFR 60 Subpart VV. This information shall be recorded in a log and kept in a readily accessible location [40 CFR 60.486(e)]:

   i. A list of identification numbers for equipment subject 40 CFR 60 Subpart VV;

   ii. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e), 482-3(i), and 482-7(f), signed by the owner or operator;

   iii. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR 60.482-4 (Condition 7.8.7(a));

   iv. The dates of each compliance test as required by 40 CFR 60.482-2(e), 482-3(i), 482-4, and 482-7(f), including the background level measured during each compliance test, and the maximum instrument reading measured during each compliance test; and

   v. A list of identification numbers for equipment in vacuum service.

e. The Permittee shall maintain a log at a readily accessible location that includes the following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and (h) [40 CFR 60.486(f)]:

   i. A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve; and

   ii. A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the plan for monitoring each valve.

f. The Permittee shall maintain the following records if choosing to use the skip period leak detection and repair method of monitoring [40 CFR 60.486(g)]:

   i. A schedule of monitoring; and

   ii. The percent of valves found leaking each monitoring period.

g. The Permittee shall maintain a log at a readily accessible location that includes the following information [40 CFR 60.486(h)]:

   Design criterion for pumps and compressors that indicates failure of the seal, barrier fluid system, or both, as required pursuant to 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion and any changes to this criterion and the reason for the change.

h. The Permittee shall maintain information and data used to demonstrate that a piece of equipment is not in VOC service [40 CFR 60.486(j)].

i. The recordkeeping requirements of Conditions 7.8.9(a) through (h) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For the UDEX Unit (No. 122) which is subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.10 <u>Reporting Requirements</u>

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected leaking component with the permit requirements, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. The semi-annual

reports required at 7.8.10(b) shall be considered deemed prompt notification of such deviations.

b. The Permittee shall submit semiannual reports to the Illinois EPA Compliance Section. This report shall include the following information [40 CFR 60.487]:

i. Process unit identification.

ii. Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f).

iii. Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f).

iv. Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h).

v. For each month during the semi-annual reporting period:

A. Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 60.483-2;

B. Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1);

C. Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and (d)(6)(i);

D. Number of pumps for which leaks were not repaired as described in 40 CFR 60.482-2(c) and (d)(6)(ii);

E. Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f);

F. Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1); and

G. The facts that explain each delay of repair, and where appropriate, why a process unit shutdown was technically infeasible.

vi. Dates of process unit shutdowns which occurred within the semi-annual reporting period.

vii. The reporting requirements of Condition 7.8.10(a) through (f) are for equipment subject to 40 CFR 63 Subpart CC (60 Subpart VV). For the UDEX Unit (No. 122) which is subject to 40 CFR 63 Subpart H, see that rule. The requirements are similar but may vary.

7.8.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected leaking components. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.8.12 Compliance Procedures

Compliance with the control, operating, and inspection and monitoring requirements of Condition 7.8.5, 7.8.7, and 7.8.8 are addressed by the recordkeeping and reporting requirements of Condition 7.8.9 and 7.8.10.

7.9 Unit: Wastewater Systems

7.9.1 Description

Refinery processes generate wastewater which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including but not limited to cooling water, condensed stripping steam, tank draw-off, and contact process water. This wastewater is directed to the wastewater treatment plant through drain systems consisting of process drains, junction boxes, and oil-water separators.

The Lemont refinery has two sets of oil water separators. The north plant has two parallel plate separators with covers and replacement-type carbon adsorbers. The south plant has corrugated plant separators with covers, an expandable bladder and replacement-type carbon adsorbers. The south plant separators no longer functions as an oil-water separator; separation will occur at the two process water tanks (see Section 7.2). The south plant separator also functions as part of an unburied sewer line.

The water from the separators is a Group 2 wastewater stream pursuant to the definition in 40 CFR 63.641.

The wastewater from the separators is then treated in the Wastewater Treatment Plant before discharge into the canal.

7.9.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
62		Process Sewer Systems	Various	Water Seals in Certain Units or Portions of Units, Covers on Junction Boxes
63	844	Nos. 4 and 5 North Plant Oil-Water Separators (844-1)	1983	Covers, Carbon Adsorber
64	844	No. 5 South Plant Oil-Water Separators (844-2)	1989	Cover, Bladder Tank, Carbon Adsorber
65	844	Wastewater Treatment Plant	1968	None

7.9.3 Applicable Provisions and Regulations

a. The “affected facilities”, for the purpose of these unit-specific conditions, are those individual drain systems, oil-water separators, or aggregate facilities constructed, modified, or re-constructed after May 4, 1987.

b. Individual drain systems in the following units and the associated downstream junction boxes up to the oil-water separators are subject to NSPS, 40 CFR 60 Subpart QQQ for VOM emissions from petroleum refinery wastewater systems. The individual drain systems drains shall comply with the standard in 40 CFR 60.692-2 or 60.693-1.

Process Unit	Description	Date Constructed or Modified	Portion	Control
102	FCC Gasoline Hydrotreater	2002	All	Water seals
103	LSR Hydrotreater	1988/1996	All	Water seals
104	ISOM	1988	All	Caps
111	Crude	2001	Drain systems re-constructed in 2001	Water seals
113	Coker 1 (MOSC)	1992	MOSC tank (113TK-401) drains	Water seals
119	Sulfur Recovery Unit	1992	All	Water seals
121	Sulfur Recovery Unit	1992	All	Water seals

c. Junction boxes downstream from the above process drains are subject to the requirements of 40 CFR 60.692-2 or 60.693-1.

d. All other process drains are subject only to 35 IAC 218.447, requiring annual monitoring of the process drains.

e. An “affected oil-water separator” for the purpose of these unit-specific conditions is a unit in which a water stream containing oil enters a device and two streams exit, one rich in oil and the other a wastewater stream with a much lower oil content. The units affected are listed in Condition 7.9.1 and 7.9.2.

i. All affected separators are subject to 35 IAC 218.443. See Condition 5.3.11.

ii. Both separators are subject to NSPS, 40 CFR 60, Subpart QQQ for VOM emissions from petroleum refinery wastewater systems: the south plant separator shall

comply with the standard for unburied sewer lines in 40 CFR 60.692-2(c).

f. The “affected wastewater treatment plant” for the purpose of these unit-specific conditions, is a wastewater treatment plant described in Conditions 7.9.1 and 7.9.2.

7.9.4 Non-Applicability of Regulations of Concern

a. The affected separators are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected separators do not have potential pre-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels.

b. The affected wastewater treatment plant (WWTP) is not subject to the control requirements of 35 IAC 218 Subpart TT because the maximum theoretical emissions of VOM from units subject to Subpart TT is less than 100 tons per year and the potential to emit VOM emissions is less than 25 tons per year when the emissions from the WWTP are excluded as allowed by 35 IAC 218.980(b)(2)(B).

c. Pursuant to the definition in 40 CFR 63.641, the source has a Group 1 wastewater stream, which must comply with the requirements of 40 CFR 61, Subpart FF, Benzene Waste Operations. These requirements are explained in Condition 5.2.7 under source-wide requirements. The wastewater system itself is not an affected unit under Subpart FF.

7.9.5 Control Requirements and Work Practices

a. i. Process water drains in active service shall be equipped with water seal controls [40 CFR 60.692-2(a)(1)].

ii. As an alternative, process water drains that are inactive may be equipped with caps or plugs [40 CFR 60.692-2(a)(4)].

b. Junction boxes shall be equipped with a cover, which shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. The cover may have an open vent pipe which shall be at least 3 feet in length and not exceed 4 inches in diameter [40 CRR 60.692-2(b)(1 and 2)].

c. Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals or other emission interfaces.

d. Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection [40 CFR 60.692-2(a)(5)]. Delays beyond 24 hours are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-3].

e. If a broken seal or gap is identified during inspections as required by Condition 7.15.8, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified [40 CFR 60.692-2(b)(3 and 4)]. Delays beyond 15 days are permissible if the repair requires a complete or partial refinery or process unit shutdown, in which case the repair shall occur before the end of the next refinery or process unit shutdown [40 CFR 60.692-6].

f. The oil-water separator shall be operated with the covers in place at all times except during inspection and maintenance.

g. Control requirements are not set for the affected wastewater treatment plant. However, there may be requirements for source-wide control requirements set forth in Condition 5.5.

7.9.6 Production and Emission Limitations

a. Production and emission limitations are not set for the affected process sewer systems.

b. In addition to Condition 5.3.2 the affected separators are subject to the following:

Emissions from the affected No. 5 south plant oil-water separator shall not exceed the following limits [T1]:

Process Water Throughput		VOM Emissions	
(gal/hr)	(gal/yr)	(lb/hr)	(ton/yr)
90,000	7.9×10^8	1.0	4.4

These limits are based on the maximum throughput.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were originally established in Permit 89050016 and then revised when the original CAAPP permit was issued, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA [T1].

c. Production and emission limitations are not set for the affected wastewater treatment plant.

7.9.7 Testing Requirements

Testing requirements are not set for the affected process sewer systems, affected separator or affected wastewater treatment plant. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.9.8 Monitoring and Inspection Requirements

a. i. Each drain in active service shall be checked by visual or physical inspection monthly for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

ii. Except as provided in Condition 7.9.8(a)(iii) to follow, each drain out of active service shall be checked by visual or physical inspection weekly for indications of low water levels or other problems that could result in VOC emissions.

iii. As an alternative to the requirements in Condition 7.9.8(a)(ii) above, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted semiannually to ensure caps or plugs are in place and properly installed [40 CFR 60.692-2(a)(2, 3 and 4)].

iv. All other process drains shall be monitored annually pursuant to 35 IAC 218.447(a)(1)

b. Junction boxes shall be visually inspected semiannually to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge [40 CFR 60.692-2(b)(3)].

c. The portion of each unburied sewer line shall be visually inspected semiannually for indication of cracks, gaps or other problems that could result in VOM emissions [40 CFR 60.692-2(c)(2)].

d. Semi-annually inspect the South Plant and North Plant oil-water separators’ joints, seals, and other emission

interfaces for indications of cracks, gaps, or other problems that would result in VOC emissions [40 CFR 60.692-2(c)].

e. The South Plant separator carbon adsorber shall be either:

i. Equipped with a OM analyzer which measures VOM concentration of the adsorber exhaust. The concentration may be expressed as % LEL. Or,

ii. Monitored monthly between the canisters for breakthrough to determine when canister change-out should occur.

f. The North Plant separator carbon adsorber shall be monitored monthly between the canisters for breakthrough to determine when canister change-out should occur.

g. Monitoring requirements are not set for the affected wastewater treatment plant. However, there may be provisions for source-wide monitoring requirements set forth in Condition 5.8 of this permit.

7.9.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected process sewer systems and separators to demonstrate compliance with Condition 5.6.1, 7.9.3, 7.9.6 and 7.9.7, pursuant to Section 39.5(7)(b) of the Act:

a. Process sewer system records for NSPS as required by 40 CFR 60.697:

i. For individual drain systems subject to § 60.692-2, the location, date and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plus is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

ii. For junction boxes subject to § 60.692-2, the location, date, and correction action shall be recorded for inspections required by § 60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

iii. For sewer lines subject to '60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by ''60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

b. Oil-water separator records.

i. For both separators, the following NSPS records (40 CFR 60.697):

A. Dates semi-annual inspections performed.

B. The location, date and corrective action when a problem is identified in required inspections that would result in VOM emissions.

C. Flow rate to separators (gal/day).

D. VOM emissions (lb/mo).

E. Any period in which the covers are not in place.

ii. For the south plant separator:

A. Continuous reading of the VOM outlet concentration of the carbon adsorber if monitoring pursuant to Condition 7.9.8(e)(i); or.

B. Breakthrough monitoring results, if monitoring pursuant to Condition 7.9.8(e)(ii).

iii. For the north plant separator:

A. Break-through monitoring results, if monitoring pursuant to Condition 7.9.8(e)(i)

B. Breakthrough monitoring results, if monitoring pursuant to Condition 7.9.8(e)(ii).

c. Wastewater Treatment Plant

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected wastewater treatment plant pursuant to Section 39.5(7)(b) of the Act:

Throughput (gal/day).

7.9.10 <u>Reporting Requirements</u>

a. Process Sewers

i. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of affected process sewer systems with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of

such deviations, and any corrective actions or preventive measures taken. The semi-annual reports required at 7.9.10(a)(ii) shall be considered deemed prompt.

ii. The Permittee shall submit semiannual reports of inspections and corrective actions taken as required by 40 CFR 60.698(c).

b. Oil-water separators

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected separators with the permit requirements as follows within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

i. Failure to perform semi-annual inspections required by Condition 7.9.7.

ii. Failure to repair cracks, gaps or other problems detected during inspections as soon as practicable but no longer than 15 calendar days after identification except as provided in 40 CFR 60.692-6.

iii. As applicable, each 3-hours of operation during which the average VOM concentration level or reading of organics in the exhaust gases from the carbon adsorber is more than 20% greater than the design exhaust gas concentration. (40 CFR 60.698(d)(3). I.e. applicable only if monitored pursuant to Condition 7.9.8(e)(i).

7.9.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected process sewer systems, separators, or wastewater treatment plant. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.9.12 Compliance Procedures

a. Process sewer systems

Compliance with Condition 7.9.3(b)-(d) is addressed by the requirements of Condition 7.9.5(a)-(e), the inspection requirements in Condition 7.9.8(a)-(c), the records required in Condition 7.9.9(a) and the reporting requirements of Condition 7.9.10(a).

b. Oil-water separators

i. Compliance with Condition 7.9.3(e)(i) is addressed by the requirements of Condition 7.9.5(f) and the records required in Condition 7.9.9(b).

ii. Compliance with Condition 7.9.3(e)(ii) is addressed by the requirements of Condition 7.9.5(f), the inspection and monitoring requirements in Condition 7.9.8(d), and the records required in Condition 7.9.9(a) and (b).

iii. Compliance with the emission limitation of Condition 7.9.6 is addressed by the records required in Condition 7.9.9(b).

c. Wastewater Treatment Plant

Emissions shall be calculated using the USEPA WATER8 or SIMS software program.

7.10 Unit: UDEX Unit

7.10.1 Description

The UDEX unit is primarily used to extract aromatic materials from refinery streams, although one material is not an aromatic (hexane/heptane). Although there are no open vents from the process, this unit is discussed separately because it is subject to some rules that do not apply to the remainder of the refining process. These rules are collectively called the HON Rule for Hazardous Organics NESHAP and include 40 CFR 63 Subparts F, G, and H plus the general provisions of the NESHAP, Subpart A. In general, process units are subject to the HON if they manufacture as a product or co-product one or more the HAPs in Table 2 of Subpart F. That table includes benzene, toluene, xylene and hexane which are produced by this unit. Specific equipment potentially subject to specific HON requirements include certain process vents, storage vessels, transfer racks, heat exchange systems, wastewater streams, pumps, compressors, pressure relief devices, open-ended valves or lines, valves, and connectors.

Two process heaters that are part of this unit are listed in Section 7.1.

7.10.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
66	122	UDEX Unit	1961, Modified in 1964	None - No Open Vents

7.10.3 Applicable Provisions and Regulations

a. The “affected chemical manufacturing unit” for the purpose of these unit specific conditions is a process in which one or more chemicals listed in Table 2 of 40 CFR 63 Subpart F is produced. This process is described in Conditions 7.10.1 and 7.10.2 but specific equipment in the process is not identified.

b. The UDEX unit is subject to 40 CFR 63 Subpart F, G, and H. The applicability for various requirements is as follows:

   i. The heat exchange system requirements of 40 CFR 63.104 are applicable.

   ii. The maintenance wastewater requirements of 40 CFR 63.105 are applicable.

iii. The storage vessel provisions of 40 CFR 63.120-123 are applicable because the storage tanks are associated with this unit's feed and products Group 1 storage vessels which require control. Storage vessels for materials in this unit are included in Section 7.2. One storage vessel is a Group 2 vessel as noted in Attachment 5.

iv. Except for the recordkeeping requirements of 40 CFR 60.130(f), the transfer operations provisions of 40 CFR 63.126-130 are not applicable because the materials being transferred classify them as Group 2 transfer operations which do not require control.

v. The leak inspection provisions of 40 CFR 63.148 and Subpart H are applicable but are addressed in Section 7.8, which covers all fugitive emission requirements.

vi. Although control technology and monitoring requirements do not apply to Group 2 units as stated previously, certain recordkeeping requirements to verify that a unit is classified as Group 2 unit are applicable.

7.10.4 Non-Applicability of Regulations of Concern

a. Non-applicability of regulations of concern are not set for the affected chemical manufacturing unit. However, there may be source-wide non-applicability of regulations of concern set forth in Condition 5.4.

b. The process vent provisions of 40 CFR 63.113-118 are not applicable because there are no open process vents and no process vents venting directly to a flare or other control device.

c. The process wastewater provisions of 40 CFR 63.132-145 are not applicable because the wastewater streams are classified as Group 2 wastewater streams.

7.10.5 Control Requirements and Work Practices

Startup, Shutdown and Malfunction (SSM) Plan

The Permittee is required to have a written startup, shutdown, and malfunction (SSM) plan for the UDEX unit on site under 40 CFR 63.6(e)(3).

The SSM Plan and any revision to that plan is incorporated by reference and is enforceable as a term and condition of this permit.

Revisions to the SSM Plan are automatically incorporated by reference into this permit and do not require a permit revision.

7.10.6 Production and Emission Limitations

Production and emission limitations are not set for the affected chemical manufacturing unit. However, there are source-wide production and emission limitations set forth in Condition 5.6.

7.10.7 Testing Requirements

Testing requirements are not set for the affected chemical manufacturing unit. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.10.8 Monitoring Requirements

The equipment leaks monitoring provisions are discussed in Section 7.8.

7.10.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected chemical manufacturing unit to demonstrate compliance with Conditions 5.6.1 and 7.10.3(b), pursuant to Section 39.5(7)(b) of the Act:

a. Records that demonstrate that emission units classified as Group 2 units continue to maintain that status.

b. Records required by 40 CFR 63.104(f)(1) which relate to leak detection and repair of components in which a leak is detected.

c. Records required by 40 CFR 63.105(e) which describe procedures for management of wastewater.

7.10.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected chemical manufacturing unit with the permit requirements within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

   To the extent that deviations are noted regarding leak-detection and repair, the semi-annual reports required at 7.10.10(b) shall be deemed prompt.

b. The Permittee shall submit any semi-annual reports required by 40 CFR 63.104(f)(2), 63.152(c), and 63.182(d) including

changes in status of any unit currently a Group 2 unit to a Group 1 unit.

7.10.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected chemical manufacturing unit. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.10.12 Compliance Procedures

a. Compliance with Condition 7.10.3(b)is addressed by the requirements of Condition 7.10.5, the monitoring requirements in Condition 7.10.8, the records required in Condition 7.10.9 and the reports required by Condition 7.10.10(b).

7.11 Unit: Cooling Towers

7.11.1 Description

Many refinery processes have condensers (non-contact type) that require cooling water. In these condensers, the cooling water increases in temperature. In order to reduce its temperature so it can be reused the warmed water is sent to a cooling tower. Evaporative losses reduce the temperature of the water to where it can be reused.

Chromium compounds are not used in any of the cooling towers.

7.11.2 List of Emission Units and Air Pollution Control Equipment

Permit Emission Unit Number	Permittee Unit Number	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
67	420	South Plant Cooling Tower (420E-1)	Modified in 2003	None
68	420	Alky Cooling Tower (420E-7)	1985	None
69	421	North Refinery Cooling Tower (421E-2)	1968	None
70	421	Coker 2 Cooling Tower (421E-3)	1983	None

7.11.3 Applicable Provisions and Regulations

a. The “affected cooling towers” for the purpose of these unit-specific conditions, are cooling towers described in Conditions 7.11.1 and 7.11.2.

b. Each affected cooling tower is subject to 35 IAC 218.986(d) which states that non-contact process water cooling towers which are subject to the control requirements of 35 IAC 218 Subpart TT shall comply with the following control measures.

   i. The owner or operator of a non-contact process water cooling tower shall perform the following actions to control emissions of VOM from such a tower:

      A. Inspect and monitor such tower to identify leaks of VOM into the water, as further specified in Condition 7.11.8(a) below;

      B. When a leak is identified, initiate and carry out steps to identify the specific leaking component or components as soon as practicable, as further specified in Condition 7.11.8(b);

C. When a leaking component is identified which:

1. Can be removed from service without disrupting production, remove the component from service;

2. Cannot be removed from service without disrupting production, undertake repair of the component at the next reasonable opportunity to do so including any period when the component is out of service for scheduled maintenance, as further specified in Condition 7.11.8(b);

D. Maintain records of inspection and monitoring activities, identification of leaks and leaking components, elimination and repair of leaks, and operation of equipment as related to these activities, as further specified in Condition 7.11.9.

ii. A VOM leak shall be considered to exist in a non-contact process water cooling water system if the parameters monitored pursuant to Condition 7.11.8(a)(i) are outside of the acceptable ranges established in the source's monitoring program.

c. Cooling towers 420E-1 and 421E-2 are subject to 40 CFR 63 Subpart Q (NESHAP for Industrial Process Cooling Towers) because those towers were using chromium compounds at the time of adoption of the standard. The standard requires the Permittee not to use chromium compounds. See Condition 7.11.5(b).

7.11.4 Non-Applicability of Regulations of Concern

Non-applicability of regulations of concern are not set for the affected cooling towers. However, there may be source-wide non-applicability of regulations of concern set forth in Condition 5.4.

7.11.5 Control Requirements and Work Practices

a. There are no add-on controls but implementation of the inspection/monitoring and repair program in Condition 7.11.8 meets the control requirements of 35 IAC 218.986.

b. Chromium compounds shall not be used in any of the cooling towers.

7.11.6 Production and Emission Limitations

In addition to Condition 5.3.2 the affected cooling towers are subject to the following:

Emissions from the south plant cooling tower shall not exceed the following limits (GPM = gallons per minute):

Maximum Flow Rate (GPM, daily average)	Pollutant	Emissions (Tons/Mo)	Emissions (Tons/Yr)
60,380	VOM	0.93	11.11
	PM	2.58	31.00
	PM_{10}	1.35	16.23

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitations were established in Permit 01030085, pursuant to 35 IAC Part 203 or 40 CFR 52.21. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 or 40 CFR 52.21[T1].

7.11.7 Testing Requirements

Testing requirements are not set for the affected cooling towers. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.11.8 Inspection, Monitoring and Testing Requirements

a. The owner or operator of a non-contact process water cooling tower shall carry out an inspection and monitoring program to identify VOM leaks in the cooling water system. [35 IAC 218.986(d)(3)]

   i. The owner or operator of a non-contact process water cooling tower shall submit to the Illinois EPA a proposed monitoring program, accompanied by technical justification for the program, including justification for the sampling location(s), parameter(s) selected for measurement, monitoring and inspection frequency, and the criteria used relative to the monitored parameters to determine whether a leak exists as specified in Condition 7.11.3(b)(ii).

   ii. This inspection and monitoring program for non-contact process water cooling towers shall include, but shall not be limited to:

A. Monitoring of each such tower with a water flow rate of 25,000 gallons per minute or more at a petroleum refinery at least weekly and monitoring of other towers at least monthly;

B. Inspection of each such tower at least weekly if monitoring is not performed at least weekly.

iii. This inspection and monitoring program shall be carried out in accordance with written procedures which the Illinois EPA shall specify as a condition in federally enforceable operating permit. These procedures shall include the VOM background levels for the cooling tower as established by the owner or operator through monitoring; describe the locations at which samples will be taken; identify the parameter(s) to be measured, the frequency of measurements, and the procedures for monitoring each such tower, that is, taking of samples and other subsequent handling and analyzing of samples; provide the criteria used to determine that a leak exists as specified in Condition 7.11.3(b)(ii); and describe the records which will be maintained.

iv. A non-contact process water cooling tower is exempt from the requirements of Conditions 7.11.8(a)(ii) and (iii) if all equipment where leaks of VOM into cooling water may occur is operated at a minimum pressure in the cooling water of at least 35 kPa greater than the maximum pressure in the process fluid.

b. The repair of a leak in a non-contact process water cooling tower shall be considered to be completed in an acceptable manner as follows [35 IAC 218.986(d)(4)]:

i. Efforts to identify and locate the leaking components are initiated as soon as practicable, but in no event later than three days after detection of the leak in the cooling tower water;

ii. Leaking components shall be repaired or removed from service as soon as possible, but no later than 30 days after the leak in the cooling tower water is detected, unless the leaking components cannot be repaired until the next scheduled shutdown for maintenance.

7.11.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected cooling towers to demonstrate compliance with Condition

5.6.1, 7.11.3 and 7.11.8, pursuant to Section 39.5(7)(b) of the Act:

a. Records of inspection and monitoring activity [35 IAC 218.986(d)(5)];

b. Records of each leak identified in such tower, with date, time and nature of observation or measured level of parameter [35 IAC 218.986(d)(5)];

c. Records of activity to identify leaking components, with date initiated, summary of components inspected with dates, and methods of inspection and observations [35 IAC 218.986(d)(5)];

d. Records of activity to remove a leaking component from service or repair a leaking component, with date initiated and completed, description of actions taken and the basis for determining the leak in such tower has been eliminated [35 IAC 218.986(d)(5)];

e. Throughput (million gallons/mo);

f. Monthly records of the following items for the south plant cooling tower:

   i. Maximum flow rate through the cooling tower (gallons/minute, daily average);

   ii. Measurements of the total dissolved solids in the cooling tower water (monthly average); and

   iii. Calculated VOM, PM, and PM_{10} emissions including supporting calculations (tons/mo and tons/yr);

g. VOM, PM and PM_{10} emissions from each tower (ton/mo).

7.11.10 <u>Reporting Requirements</u>

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of an affected cooling tower with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

   Emissions from the affected cooling tower 420E-1 in excess of the limits specified in Condition 7.11.6 within 30 days of such occurrence.

b. The Permittee shall submit an annual report to the Illinois EPA, containing the following information pursuant to 35 IAC 218.986(d)(6):

i. The number of leaks identified in each cooling tower;

ii. A general description of activity to repair or eliminate leaks which were identified;

iii. Identification of each leak which was not repaired within 30 days from the date of identification of a leak in such a tower or the process unit removed from service, with description of the leaks, explanation why the leak was not repaired in 30 days, actions taken to minimize VOM losses prior to elimination of the leak and any actions taken to prevent the recurrence of a leak of this type; and

iv. Identification of any periods when required inspection and monitoring activities were not carried out.

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected cooling towers. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.11.12 Compliance Procedures

a. Compliance with Condition 7.11.3(b) is addressed by the inspection, monitoring and testing requirements in Condition 7.11.8(a) and (b), the records required in Condition 7.11.9(a)-(e) and the annual reporting requirements of Condition 7.11.10(b).

b. Compliance with Condition 7.11.3(c) is addressed by the requirements of Condition 7.11.5(b).

c. Compliance with the emission limitation of Condition 7.11.6 is addressed by the records required in Condition 7.11.9(f).

d. Emissions shall be calculated using AP-42 emission factors for controlled, induced draft cooling towers at petroleum refineries (Table 5.1-2).

7.12 Unit: Cold Cleaning Degreasers

7.12.1 Description

For maintenance purposes several cold cleaning degreasers are used for cleaning parts. The solvent may be sprayed with a fluid stream, but not an atomized spray. The air regulations (35 IAC 211.1310) define a degreaser as “cold” if the solvent is below its boiling temperature.

7.12.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
71	Batch Cold Cleaning Degreasers with Spray	1968	Doors and Covers

7.12.3 Applicable Provisions and Regulations

a. The “affected batch cold cleaning degreaser” for the purpose of these unit-specific conditions, is a batch cold cleaning degreaser described in Conditions 7.12.1 and 7.12.2.

b. The affected batch cold cleaning degreasers are subject to the equipment requirements of 35 IAC 218.182(b) which states that no person shall operate a cold cleaning degreaser unless:

i. The degreaser is equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counter-weights or a powered system if:

A. The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measure at 38°C (100°F);

B. The solvent is agitated; or

C. The solvent is heated above ambient room temperature.

ii. The degreaser is equipped with a device for draining cleaned parts. The drainage device shall be constructed so that parts are enclosed under the cover while draining unless:

A. The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F); or

B. An internal drainage device cannot be fitted into the cleaning system, in which case the drainage device may be external.

iii. The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F) or if the solvent is heated above 50°C (120°F) or its boiling point:

A. A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

B. Any other equipment or system of equivalent emission control as approved by the Illinois EPA and further processed consistent with Section 218.108 of this Part. Such a system may include a water cover, refrigerated chiller of carbon adsorber.

iv. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and

v. If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

c. The affected batch cold cleaning degreasers are subject to the operating procedure requirements of 35 IAC 218.182(a) which states that no person shall operate a cold cleaning degreaser unless:

i. Waste solvent is stored in covered containers only and not disposed of in such manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

ii. The cover of the degreaser is closed when parts are not being handled; and

iii. Parts are drained until dripping ceases.

d. The affected batch cold cleaning degreasers are subject to the material requirements of 35 IAC 218.182(c). Section 218.182(c)(1)(B) states that after March 15, 1999, no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 2.0 mmHg (0.038 psi) measured at 20°C (68°F). Section 218.182(c)(2)(B) states that after March 15, 2001 no person shall operate a cold cleaning degreaser with a solvent vapor pressure which exceeds 1.0 mmHg (0.019 psi) measured at 20°C (68°F).

7.12.4 Non-Applicability of Regulations of Concern

The affected batch cold cleaning degreasers were initially subject to the NESHAP for Halogenated Solvent Cleaning 40 CFR 63, Subpart T. However, 35 IAC 218.182(c)(1)(B) states that after March 15, 1999 cold cleaning degreasers may not use a solvent with a vapor pressure which exceeds 2.0 mmHg (0.038 psi) and Section 218.182(c)(2)(B) lowers the vapor pressure to 10 mmHg (0.019 psi) effective March 15, 2001 (See Condition 7.12.3(d) above). Both of these requirements preclude the use of halogenated solvents, as the halogenated solvents regulated by 40 CFR 63 Subpart T all have vapor pressures in excess of the level allowed by 35 IAC 218.182(c). Although 35 IAC 218 Subpart E may be interpreted as not applying to non-VOM solvents (which include some of applicable halogenated solvents), the Permittee has agreed not to use the halogenated solvents regulated by 40 CFR 63 Subpart T in its degreasing booths (See Condition 7.12.5).

7.12.5 Work Practices

The Permittee shall not use any cleaning solvent in the affected degreasers in excess of the vapor pressures identified in Condition 7.12.3(d) [35 IAC 218.182(c)]. The Permittee has agreed to include non-VOM solvent in these requirements, although 35 IAC Part 218 typically regulates only VOM containing materials. Compliance with this requirement precludes applicability of 40 CFR 63 Subpart T as all affected halogenated solvent cleaners exceed the applicable vapor pressure requirements.

7.12.6 Production and Emission Limitations

Production and emission limitations are not set for the affected batch cold cleaning degreaser. However, there are source-wide production and emission limitations set forth in Condition 5.6.

7.12.7 Testing Requirements

Testing requirements are not set for the affected batch cold cleaning degreaser. However, there are source-wide testing requirements in Condition 5.7 and general testing requirements in Condition 8.5.

7.12.8 Monitoring Requirements

Monitoring requirements are not set for the affected batch cold cleaning degreaser. However, there may be provisions for source-wide monitoring requirements set forth in Condition 5.8 of this permit.

7.12.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for the affected batch cold cleaning degreaser to demonstrate compliance with Condition 7.12.3(b), pursuant to Section 39.5(7)(b) of the Act:

An MSDS listing the type of solvent and the vapor pressure of the each solvent used in any of the batch cold cleaning degreasers.

7.12.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected batch cold cleaning degreaser with the permit requirements as follows within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Use of a solvent with a vapor pressure higher than allowed by Condition 7.12.3(b) or use of a halogenated solvent regulated by 40 CFR 63 Subpart T.

Note: The reports required by 40 CFR 63.468 have previously been submitted.

7.12.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected batch cold cleaning degreaser. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.12.12 Compliance Procedures

a. Compliance with Condition 7.12.3 (b) is addressed by the records required in Condition 7.12.9.

b. Emissions shall be calculated by a material balance, that is, beginning inventory plus purchases minus ending inventory and minus credit for solvent sent offsite for recovery.

7.13 Unit: Catalytic Reforming Units

7.13.1 Description

The term catalytic reforming is fairly broad as there are two units called catalytic reformers that do different operations. Overall both convert lower grade materials into gasoline blend stocks. Catalytic Reformer #1, Unit 123, also includes a desulferizer and some of the product goes to other units for further processing as well as gasoline blending. Catalytic Reformer #2, Unit 116, sends all of its product to gasoline blending.

Other than fuel combustion, there are no vents releasing air contaminants during normal processing operation. However, periodically coke deposits must be removed from the catalyst in a step called regeneration. There are emissions, including HAP emissions, during the regeneration process. The regeneration process is infrequent and classified as a startup operation. Both units include multiple process heaters that are included in Section 7.1.

7.13.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Permittee Unit Number	Description	Date Constructed	Emission Control Equipment
72	123	Naphtha Desulferizer/ Catalytic Reformer #1	1958. Modified in 1968	None[a]
73	116	Catalytic Reformer #2	1968	None[a]

[a] During normal processing. Control systems required when shutting down and during catalyst regeneration.

7.13.3 Applicable Provisions and Regulations

a. The “affected catalytic reforming units” for the purpose of these unit-specific conditions, are catalytic reforming units described in Conditions 7.13.1 and 7.13.2.

b. These affected catalytic reforming units (CRUs) are subject to a Refinery NESHAP, 40 CFR 63 Subpart UUU (63.1560 to 63.1579 plus Tables), which became final and effective in April 2005. The regeneration process may require control equipment to be installed as there are no open vents during normal processing. In addition to 40 CFR 63 Subpart UUU, these affected units are also subject to the equipment leaks provisions of 40 CFR 63 Subpart CC since they are petroleum refinery units in organic HAP service as identified in 40 CFR 63.640(a) and located at a source that is major for HAPs. See Section 7.8.

There are two substantive emission standards within Subpart UUU which with the catalytic reforming units must comply.

i. One standard listed in 40 CFR 63.1566(a) and Tables 15 and 16 is for organic HAP emissions during depressurizing of the vessel prior to regeneration. This rule requires that the vessel be vented to a flare or other type of control device down to a pressure of 5 psig.

ii. The second standard listed in 40 CFR 63.1567(a) and Table 22 and is for inorganic HAP emissions (i.e. HCl) during catalyst regeneration. The standard is either a maximum final HCl concentration or a minimum HCl reduction by a control device.

iii. In addition to the emission standards, the Permittee is also required by 40 CFR 63.1574(f) to prepare and implement an Operation, Maintenance, and Monitoring Plan (OM&M Plan) for review and approval by the Illinois EPA.

iv. In addition to the requirements of Subpart UUU, these processes are also subject to the general provisions of the NESHAP, 40 CFR 63 Subpart A. Table 44 of Subpart UUU lists specific section of Subpart A that are applicable and which are not applicable.

c. Startup (Regeneration) Provisions

The Permittee is authorized to regenerate the catalyst which results in emissions that do not occur during petroleum processing. The Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual startups, and frequency of startups. This authorization is subject to the following:

i. The Permittee shall take the following measures to minimize startup emissions: Implementation of established startup procedures pursuant to the OM&M Plan required by Subpart UUU.

ii. Depressurization of the affected process units shall meet the requirements of 35 IAC 218.444 [See Condition 5.2.2(i)] and 40 CFR 63 Subpart UUU [See Condition 7.13.3(b)(i). Note that if the flare to which the system is being depressurized malfunctions, the depressurization shall be stopped.

iii. The Permittee shall fulfill the applicable recordkeeping requirements of Condition 7.13.9(a).

7.13.4 Non-Applicability of Regulations of Concern

a. The affected catalytic reforming units are not subject to 40 CFR 63 Subpart J because the units are not Claus sulfur recovery units or fluid catalytic cracking units.

   Applicability or non-applicability of the rule to fuel combustion devices that are part of the catalytic reforming units is addressed in Section 7.1 of this permit.

b. The affected catalytic reforming units are not subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected catalytic reforming units are subject to a NESHAP proposed after November 15, 1990, pursuant to 40 CFR 64.2(b)(1)(i).

7.13.5 Control Requirements and Work Practices

a. The Permittee shall follow the OM&M Plan required by 40 CFR 63.1574(f).

b. As of the date of issuance of this permit, the Permittee has not had to do a catalyst regeneration after the compliance date for Subpart UUU and therefore has not been required to conduct a performance test as required by 40 CFR 63.1571 and Table 25. During the first catalyst regeneration after issuance of this permit, the Permittee shall collect data that become specifications for later regenerations. For later regenerations the Permittee shall comply with those specifications. There are several options for compliance methods and thus the specific type of information to be collected is not known at this time.

7.13.6 Production and Emission Limitations

Production and emission limitations are not set for the affected catalytic reforming units. However, there are source-wide production and emission limitations set forth in Condition 5.6.

7.13.7 Testing Requirements

Pursuant to 40 CFR 63.1571 the Permittee must conduct an initial performance test on the catalytic reforming units during the first regeneration cycle after issuance of this permit. Each unit requires a separate test. 40 CFR 63 Subpart A (General Provisions) also has requirements for performance tests. During the tests certain parameters determined by the initial performance tests become specifications for verifying performance (continuous compliance) after the initial tests.

There are also separate performance test requirements for organic HAPs (Table 18) and for inorganic HAPs (Tables 25 and 26).

7.13.8 Monitoring Requirements

40 CFR 63 Subpart UUU has various monitoring requirements listed in Tables and in 40 CFR 63.1572. These include installation, operation and maintenance requirements. These requirements only apply to the regeneration cycle of the CRUs.

a. Table 40 lists the requirements for continuous opacity and continuous emission monitoring systems.

b. Table 41 lists the requirements for continuous parameter monitoring systems.

c. Table 17 describes the continuous monitoring system requirements for organic HAP emissions from CRUs.

d. Table 24 describes the continuous monitoring system requirements for inorganic HAP emissions from CRUs.

e. The continuous monitoring system requirements must also meet the requirements of 40 CFR 63 Subpart A, specifically 63.8.

f. The monitoring systems must be a part of the OM&M Plan required by 40 CFR 63.1574(f).

7.13.9 Recordkeeping Requirements

In addition to the records required by Condition 5.9, the Permittee shall maintain records of the following items for affected catalytic reforming units to demonstrate compliance with Condition 5.6.1, 7.1.3(b) and (c), 7.13.5, 7.13.7 and 7.13.8, pursuant to Section 39.5(7)(b) of the Act:

a. Any records required by 40 CFR 63 Subpart UUU (63.1576), including but not limited to the following:

   i. Records of all previously sent notifications, including compliance status;

   ii. Records related to startup, shutdown and malfunction;

   iii. Records of performance tests, results of those tests, and parameters established for ongoing compliance;

   iv. Records of deviations and time the deviation started and stopped;

   v. A copy of the OM&M Plan, and

   vi. Any changes that could affect control system performance.

b. Records for Startup

Emissions that in the original permit were previously classified as startup are now covered by the NESHAP and thus the records above are sufficient for this purpose.

c. Emission Records

i. HAP(namely HCl) emissions during regeneration.

ii. Since the VOM during depressurization down to 5 psia is accounted for as part of the flare emission records, but the VOM from that point to opening of the vessel shall be accounted for.

7.13.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the affected catalytic reforming units with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Reports required by the NESHAP Subpart UUU, 40 CFR 63.1575 and Table 43 such as semiannual compliance reports and the reporting requirements of the Subpart A.

Deviations noted in such reports shall be considered deemed prompt.

7.13.11 Operational Flexibility/Anticipated Operating Scenarios

Operational flexibility is not set for the affected catalytic reforming units. However, there may be provisions for source-wide operational flexibility set forth in Condition 5.11 of this permit.

7.13.12 Compliance Procedures

a. Compliance with Condition 7.13.3(b) is addressed by the requirements of Condition 7.13.5(a), the testing requirements in Condition 7.13.7, the monitoring requirements in Condition 7.13.8, the records required in Condition 7.13.9(a) and the reporting requirements of Condition 7.13.10.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after September 29, 2005 (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

a. The changes do not violate applicable requirements;

b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test

methods), recordkeeping, reporting, or compliance certification requirements;

c. The changes do not constitute a modification under Title I of the CAA;

d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and

e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:

i. Describe the physical or operational change;

ii. Identify the schedule for implementing the physical or operational change;

iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;

iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and

v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods if applicable test methods are not specified by the applicable regulations or otherwise identified in the conditions of this permit. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Conditions 8.6.3 and 8.6.4.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

Reports summarizing required monitoring as specified in the conditions of this permit shall be submitted to the Illinois EPA every six months as follows, unless more frequent submittal of

such reports is required in Sections 5 or 7 of this permit [Section 39.5(7)(f) of the Act]:

Monitoring Period	Report Due Date
January – June	September 1
July – December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

a. The name and identification of the affected unit(s);

b. The person(s) who will be performing sampling and analysis and their experience with similar tests;

c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;

d. The specific determinations of emissions and operation that are intended to be made, including sampling and monitoring locations;

e. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods;

f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

a. The name and identification of the affected unit(s);

b. The date and time of the sampling or measurements;

c. The date any analyses were performed;

d. The name of the company that performed the tests and/or analyses;

e. The test and analytical methodologies used;

f. The results of the tests including raw data, and/or analyses including sample calculations;

g. The operating conditions at the time of the sampling or measurements; and

h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

a. Unless otherwise specified in the particular provision of this permit or in the written instructions distributed by the Illinois EPA for particular reports, reports and notifications shall be sent to the Illinois EPA - Air Compliance Unit with a copy sent to the Illinois EPA - Air Regional Field Office.

b. As of the date of issuance of this permit, the addresses of the offices that should generally be utilized for the submittal of reports and notifications are as follows:

i. Illinois EPA - Air Compliance Unit

Illinois Environmental Protection Agency
Bureau of Air
Compliance & Enforcement Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Quality Planning Section

Illinois Environmental Protection Agency
Bureau of Air
Air Quality Planning Section (MC 39)
P.O. Box 19276
Springfield, Illinois 62794-9276

iii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

c. Permit applications should be addressed to the Air Permit Section. As of the date of issuance of this permit, the address of the Air Permit Section is as follows:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

8.7 Title I Conditions

Notwithstanding the expiration date on the first page of this CAAPP permit, Title I conditions in this permit, which are identified by a T1, T1N, or T1R designation, remain in effect until such time as the Illinois EPA takes action to revise or terminate them in accordance with applicable procedures for action on Title I conditions. This is because these conditions either: (a) incorporate conditions of earlier permits that were issued by the Illinois EPA pursuant to authority that includes authority found in Title I of the CAA (T1 conditions), (b) were newly established in this CAAPP permit pursuant to authority that includes such Title I authority (T1N conditions), or (c) reflect a revision or combination of conditions established in this CAAPP permit (T1R conditions). (See also Condition 1.5.)

Notwithstanding the expiration date on the first page of this CAAPP permit, any Title I conditions that would be included in this permit in the future, which would be identified by a T1, T1N, or T1R designation, would remain in effect until such time as the Illinois EPA takes action to revise or terminate them in accordance with applicable procedures for action on Title I conditions. This is because these conditions would either: (a) incorporate conditions of earlier permits that were issued by the Illinois EPA pursuant to authority that includes authority found in Title I of the CAA (T1 conditions), (b) be newly established in this CAAPP permit pursuant to authority that includes such Title I authority (T1N conditions), or (c) reflect a revision or combination of conditions established in this CAAPP permit (T1R conditions). (See also Condition 1.5.)

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as shielded at Condition 8.1 and as specifically stated in this permit and as allowed by law and rule.

9.1.2 In particular, this permit does not alter or affect the following [Section 39.5(7)(j)(iv) of the Act]:

a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and

d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, pursuant to Section 39.5(7)(j) and (p) of the Act, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless this permit provides for such continued operation consistent with the Act and applicable Illinois Pollution Control Board regulations [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated there under.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents as may be required by law and in accordance with constitutional limitations, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Sections 4 and 39.5(7)(a) and (p)(ii) of the Act]:

a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment),

practices, or operations regulated or required under this permit;

d. Sample or monitor any substances or parameters at any location:

i. At reasonable times, for the purposes of assuring permit compliance or applicable requirements; or

ii. As otherwise authorized by the CAA, or the Act.

e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and

f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any regulated activity, discharge or emission at the source authorized by this permit.

g. Any such above activity by IEPA or it's representatives will be performed in accordance with the source's safety and security procedures, provided that such procedures apply to all visitors to the source.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. At a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].

b. Other records required by this permit including any logs, plans, procedures, or instructions required to be kept by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Air Quality Planning Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications are for the preceding calendar year and shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Unit, Air Regional Field

Office, and USEPA Region 5 – Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.

b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.

c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act and applicable regulations [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as Attachment 1 to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence [Section 39.5(7)(k) of the Act]:

i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Note: For this purpose, emergency means a situation arising from sudden and reasonably unforeseeable events beyond the control of the source, as further defined by Section 39.5(7)(k)(iv) of the Act.

ii. The permitted source was at the time being properly operated;

iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations [Section 39.5(7)(k)(iv) of the Act].

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, revoked, reopened and reissued, or terminated for cause in accordance with applicable provisions of Section 39.5 of the Act. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit.

b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program.

c. The Illinois EPA or USEPA determines that this permit contains a material mistake or that inaccurate statement were made in establishing the emission standards or limitations, or other terms or conditions of this permit.

d. The Illinois EPA or USEPA determines that this permit must be revised or revoked to ensure compliance with the applicable requirements.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation and reissuance under Section 39.5(15) of the Act, pursuant to Sections 39.5(5)(e) and (i) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable. In the event of a challenge to any portion of the permit, other portions of the permit may continue to be in effect. Should any portion of this permit be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected and the rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

Upon the expiration of this permit, if the source is operated, it shall be deemed to be operating without a permit unless a timely and complete CAAPP application has been submitted for renewal of this permit. However, if a timely and complete application to renew this CAAPP permit has been submitted, the terms and all conditions of this CAAPP

permit will remain in effect until the issuance of a renewal permit [Section 39.5(5)(l) and (o) of the Act].

Note: Pursuant to Sections 39.5(5)(h) and (n) of the Act, upon submittal of a timely and complete renewal application, the permitted source may continue to operate until final action is taken by the Illinois EPA on the renewal application, provided, however, that this protection shall cease if the applicant fails to submit any additional information necessary to evaluate or take final action on the renewal application as requested by the Illinois EPA in writing. For a renewal application to be timely, it must be submitted no later than 9 months prior to the date of permit expiration.

9.15 General Authority for the Terms and Conditions of this Permit

The authority for terms and conditions of this permit that do not include a citation for their authority is Section 39.5(7)(a) of the Act, which provides that the Illinois EPA shall include such provisions in a CAAPP permit as are necessary to accomplish the purposes of the Act and to assure compliance with all applicable requirements. Section 39.5(7)(a) of the Act is also another basis of authority for terms and conditions of this permit that do include a specific citation for their authority.

Note: This condition is included in this permit pursuant to Section 39.5(7)(n) of the Act.

10.0 ATTACHMENTS

Attachment 1 Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

Attachment 2 Emissions of Particulate Matter from Process Emission Units

a. New Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972 [35 IAC 212.321].

i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

ii. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.321(b)]:

$$E = A(P)^B$$

Where:

P = Process weight rate; and
E = Allowable emission rate; and,

A. Up to process weight rates of 408 Mg/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

B. For process weight rate greater than or equal to 408 Mg/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	11.42	24.8
B	0.16	0.16

iii. Limits for Process Emission Units For Which Construction or Modification Commenced On or After April 19, 1972 [35 IAC 212.321(c)]:

Metric P Mg/hr	E kg/hr	English P T/hr	E lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.1	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

b. Existing Process Emission Units for Which Construction or Modification Prior to April 14, 1972 [35 IAC 212.322].

i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 [35 IAC 212.322(a)].

ii. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.322(b)]:

$$E = C + A(P)^B$$

Where:

P = Process weight rate; and
E = Allowable emission rate; and,

A. Up to process weight rates up to 27.2 Mg/hr (30 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.985	4.10
B	0.67	0.67
C	0	0

B. For process weight rate in excess of 27.2 Mg/hr (30 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	25.21	55.0
B	0.11	0.11
C	- 18.4	- 40.0

iii. Limits for Process Emission Units For Which Construction or Modification Commenced Prior to April 14, 1972 [35 IAC 212.322(c)]:

Metric		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.27	0.05	0.55
0.1	0.42	0.10	0.87
0.2	0.68	0.2	1.40
0.3	0.89	0.30	1.83
0.4	1.07	0.40	2.22
0.5	1.25	0.50	2.58
0.7	1.56	0.75	3.38
0.9	1.85	1.00	4.10
1.8	2.9	2.00	6.52
2.7	3.9	3.00	8.56
3.6	4.7	4.00	10.40
4.5	5.4	5.00	12.00
9.0	8.7	10.00	19.20
13.0	11.1	15.00	25.20
18.0	13.8	20.00	30.50
23.0	16.2	25.00	35.40
27.2	18.15	30.00	40.00
32.0	18.8	35.00	41.30
36.0	19.3	40.00	42.50
41.0	19.8	45.00	43.60
45.0	20.2	50.00	44.60
90.0	23.2	100.00	51.20
140.0	25.3	150.00	55.40
180.0	26.5	200.00	58.60
230.0	27.7	250.00	61.00
270.0	28.5	300.00	63.10
320.0	29.4	350.00	64.90
360.0	30.0	400.00	66.20
400.0	30.6	450.00	67.70
454.0	31.3	500.00	69.00

Attachment 3 Compliance Assurance Monitoring (CAM) Plan

Table 3.1 PSEU Designation:	HF Alkylation Unit
Significant Emission Unit Section:	7.4
Pollutant:	Hydrogen fluoride (HF)

Indicators:	#1: pH	#2: Recirculation Rate
GENERAL CRITERIA		
THE MONITORING APPROACH USED TO MEASURE THE INDICATORS:	Caustic level and pH	Flow rate measured by orifice plate
THE INDICATOR RANGE WHICH PROVIDES A REASONABLE ASSURANCE OF COMPLIANCE:	pH greater than 13 Water seal pH greater than 7 Caustic level in kidney greater than 50%	500 gal/min
QUALITY IMPROVEMENT PLAN (QIP) THRESHOLD LEVELS:	Not applicable	Not applicable
PERFORMANCE CRITERIA		
THE SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA:	Both pH values are obtained manually each shift using pH strips Caustic strength measured by titration each day Kidney level observed each shift	Continuously read
VERIFICATION PROCEDURES TO CONFIRM THE OPERATIONAL STATUS OF THE MONITORING:	Performed manually and logged	Manufacturer’s recommendations for flow meter
QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES THAT ENSURE THE VALIDITY OF THE DATA:	See verification procedures	See verification procedures
THE MONITORING FREQUENCY:	See specifications	Continuously read
THE DATA COLLECTION PROCEDURES THAT WILL BE USED:	Measured levels are logged	Continuous recording
THE DATA AVERAGING PERIOD FOR DETERMINING WHETHER AN EXCURSION OR EXCEEDANCE HAS OCCURRED:	No averaging	Daily average

Attachment 4 Guidance

The Illinois has prepared guidance for sources on the Clean Air Act Permit Program (CAAPP) that is available on the Internet site maintained by the Illinois EPA, www.epa.state.il.us. This guidance includes instructions on applying for a revision or renewal of the CAAPP permit.

Guidance On Revising A CAAPP Permit:

www.epa.state.il.us/air/caapp/caapp-revising.pd

Guidance On Renewing A CAAPP Permit:

www.epa.state.il.us/air/caapp/caapp-renewing.pdf

The application forms prepared by the Illinois EPA for the CAAPP are also available from the Illinois EPA's Internet site:

www.epa.state.il.us/air/caapp/index.html

These CAAPP application forms should also be used by a CAAPP source when it applies for a construction permit. For this purpose, the appropriate CAAPP application forms and other supporting information, should be accompanied by a completed Application For A Construction Permit form (199-CAAPP) and Fee Determination for Construction Permit Application form (197-FEE):

www.epa.state.il.us/air/caapp/199-caapp.pdf
www.epa.state.il.us/air/permits/197-fee.pdf

DGP:jws