ADEQ
MINOR SOURCE
AIR PERMIT

Permit #: 1227-AR-12

IS ISSUED TO:

Cross Oil Refining & Marketing, Inc.
484 East 6th Street
Smackover, AR 71762
Union County
AFIN: 70-00039

THIS PERMIT IS CROSS OIL REFINING & MARKETING, INC.'S AUTHORITY TO CONSTRUCT, MODIFY, OPERATE, AND/OR MAINTAIN THE EQUIPMENT AND/OR FACILITY IN THE MANNER AS SET FORTH IN THE DEPARTMENT S MINOR SOURCE AIR PERMIT AND THE APPLICATION. THIS PERMIT IS ISSUED PURSUANT TO THE PROVISIONS OF THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT (ARK. CODE ANN. SEC. 8-4-101 *ET SEQ.*) AND THE REGULATIONS PROMULGATED THEREUNDER, AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Michael Bonds
Chief, Air Division

Date

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Section I: FACILITY INFORMATION

PERMITTEE:	Cross Oil Refining & Marketing, Inc.
AFIN:	70-00039
PERMIT NUMBER:	1227-AR-12
FACILITY ADDRESS:	484 East 6th Street Smackover, AR 71762
COUNTY:	Union
CONTACT PERSON:	Charlie Clark
TELEPHONE NUMBER:	(870) 725-3611 EXT. 1123
REVIEWING ENGINEER:	Paula Parker
UTM North-South (Y):	Zone 15 [3691.5]
UTM East-West (X):	Zone 15 [526.8]

Section II: INTRODUCTION

Summary

Cross Oil Refining and Marketing, Inc., (Cross Oil) operates an oil refinery at 484 East Sixth Street, in Smackover, Union County, Arkansas, 71762. The facility is modifying their permit in order to increase the annual asphalt throughput at the Blow Still Incinerator Waste Heat Boiler (SN-04) and to remove the testing requirements for SO_2 at the Cogeneration Unit (SN-25), which is a natural gas source. Annual particulate emissions are increasing by 14.6 tons/year as a result of the asphalt throughput.

Process Description

Cross Oil is refinery that processes crude oil into naptha, diesel fuel, lube oils, and asphalt. Crude oil is charged from storage and is preheated with heat exchangers. Water is added to the crude oil to aid in removing salts. The crude passes through a series of electrostatic desalting units**,** which separates the saltwater from the crude. From the desalters, the crude is heated through a series of heat exchangers and then through the Crude Charge Heater (SN-01). Finally, the crude is sent to the first atmospheric distillation tower where the oil is separated into naphtha, diesel fuel, No. 2 lube oil, No. 3 lube oil, and No. 4 lube oil.

Naphtha and other non-condensable gases flow overhead from the atmospheric tower. The naphtha is cooled in a condenser and then flows to an accumulator from which the liquid is pumped back to the tower as reflux. Excess naphtha product is drawn off of the accumulator, and then pumped to product storage for sales. Diesel fuel and Lube Oils No. 2, 3, and 4 are drawn off of the side of the tower, routed through strippers to remove non-condensable gases, and then pumped through heat exchangers and on to storage for product sales.

The bottoms stream off of the atmospheric tower is pumped through the Vacuum Tower Charge Heater (SN-02) before being charged to the vacuum distillation column. The reduced crude is separated in the vacuum tower to produce the heavier grades of lube oil, Nos. 7, 9, 10, and 11. The vacuum tower bottoms are asphalt flux, which is pumped through heat exchangers to storage for sales or for further processing in an asphalt blowstill.

Flux is charged from storage through the Asphalt Blowstill Charge Heater (SN-03) to one of two blowstills. While the flux is being pumped into the blowstill, air is blown into the bottom of the still through a distribution header. The air oxidizes the flux causing it to polymerize and thus increases the melting point and hardness of the asphalt. Oxygen, nitrogen, volatile organic compounds (VOC), and sulfur dioxide (SO_2) are produced as byproducts of the operation. These byproducts are routed through an incinerator and the waste heat boiler (SN-04) before being vented to the atmosphere. The asphalt product is loaded into trucks at one of the two asphalt loading racks (SN-15 and SN-16).

The lube oils produced by both atmospheric and vacuum distillation are further processed in a set of heater exchangers and then are passed to the hydrotreaters. The oils are heated with heat

exchangers and two hydrotreaters, the Hydrotreater Charge Heater (SN-07) and Lube Charge Pre-Heater (SN-30), before being pumped into the top of the reactor. The hot lube oils combine with hydrogen at the top of the reactor before passing through a catalyst bed. Sulfur in the oil reacts with the hydrogen to form hydrogen sulfide gas. The hydrogen sulfide gas also saturates the aromatic compounds in the oil, removes heavy metals, and converts some of the nitrogen to ammonia.

The reactor effluent flows to a high pressure separator where the excess hydrogen, hydrogen sulfide, and ammonia gases flash off. From the high pressure separator, the oil flows to a low pressure separator where additional light ends flash off. The oil then flows to a lube oil stripper where the remaining hydrogen sulfide is removed by steam stripping. The Lube Stripper Reboiler (SN-12) supplies heat to the lube oil stripper. From the lube oil stripper, the oil flows to a vacuum lube stripper where any entrained water is vacuum stripped from the product. The bottoms from the vacuum stripper are routed to finished lube storage for blending and sales. The finished lube products are loaded at one of the two lube oil loading racks (SN-18 and SN-21).

The waste gas from the high pressure separator is routed to a caustic scrubber where the gas enters the bottom of the column. The gas flows countercurrent to a caustic solution, which removes the hydrogen sulfide in the gas. The waste gas from the low pressure separator is combined with the gases from the lube stripper and the lube vacuum stripper. The combined gas stream is then treated in a two stage caustic scrubber system. The clean hydrogen gas from the scrubbers is then sent back to the hydrotreater reactor.

The primary hydrogen is supplied to the hydrotreater by a steam/methane reformer. Natural gas is compressed and heated in a preheat exchanger, and combined with steam. The mixture is charged to the Hydrogen Plant Heater (SN-08) where it passes over a nickel catalyst and reacts to produce hydrogen and carbon oxides. The gases leaving the reactor are routed to a shift converter which contains an iron-chromium catalyst. Most of the carbon monoxide (CO) in the gas is converted to carbon dioxide (CO_2) and hydrogen (H_2). The CO_2 and H_2 gas then flow to a pressure swing absorption (PSA) system where the CO_2 and other impurities are removed.

Steam is produced in a boiler and a cogeneration unit at the facility. The cogeneration unit (SN-25) has a gas-fired turbine, which along with the boiler, uses natural gas as fuel.

Regulations

The following table lists the regulations applicable to this permit.

Source No.	Regulation
All Sources	*Arkansas Air Pollution Control Code*, Regulation 18, effective February 15, 1999
All Sources	*Regulations of the Arkansas Plan of Implementation for Air Pollution Control*, Regulation 19, effective December 19, 2004

Source No.	Regulation
SN-27	40 CFR Part 60, Subpart Ka – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification commenced after May 18, 1978, and prior to July 23, 1984*
SN-25	40 CFR Part 60, Subpart GG – *Stationary Gas Turbines*
All Sources	40 CFR Part 61, Subpart FF – *National Emission Standards for Hazardous Air Pollutants, Benzene Waste Operations*

Subpart FF applies because Cross Oil is a petroleum refinery. The boiler (SN-26) was manufactured in 1971 and is therefore not subject to the requirements of NSPS Subpart Dc. The reformer (SN-08) burns pipeline quality gas so it is not subject to 40 CFR Part 60, Subpart J – *Standards of Performance for Petroleum Refineries*.

The following table is a summary of the facility's total emissions.

Table 1 - Total Allowable Emissions

Total Allowable Emissions		
Pollutant	**Emissions Rates**	
	lb/hr	**tpy**
PM	11.4	43.8
PM_{10}	11.4	43.8
SO_2	1.4	2.6
VOC	66.0	77.8
CO	21.8	93.6
NO_x	25.8	81.9*
2,2,4-Trimethylpentane	0.50	0.18
Benzene	6.89	3.75
Cumene	0.26	0.08
Ethylbenzene	0.85	0.34
Hexane	23.87	8.77
Phenol	0.01	0.01
Styrene	0.03	0.01
Toluene	4.95	1.93
Xylene	2.35	0.73

* Includes 53 tpy emission bubble for SN-01, 25, and 26

Section III: PERMIT HISTORY

1227-A Issued on December 9, 1991, this was the first operating permit for CORC. This permit included the inclusion of a recently installed naphtha storage tank.

1227-AR-1 This modification, issued on July 14, 1992, covered the installation of a lube-oil stripper/reboiler/heater at the facility.

1227-AR-2 Issued on November 20, 1992, this permit allowed the installation of a replacement boiler. The installation of the replacement boiler classified the facility as a major source subject to Title V permitting since NO_X emissions exceeded 100 tons per year.

1227-AR-3 This permit was issued on August 5, 1997 due to an emissions inventory that discovered that the facility did not have actual emissions greater than the major source threshold. Therefore, Cross Oil Refining and Marketing, Inc. was removed from major source status. Additionally, a cogeneration unit and the #4 boiler were added as sources at the facility.

1227-AR-4 This modification was issued on June 29, 2000 and covers the relocation of a 94.3 MMBTU/hr natural gas fired boiler to the facility. Several boilers at the plant had reached the end of their useful life. This new boiler incorporates a low NOx burner and flue gas recirculation to minimize emissions. Additionally, it was planned that a duct burner would work in conjunction with a cogeneration unit, but the duct burner was never installed and is being removed from the permit and the cogeneration unit calculations adjusted accordingly. In order for CORC to install the duct burner, a new application must be submitted. Also, the existing #3 Boiler (SN-06) has been retired from operation and so the emissions from this source have been removed.

1227-AR-5 This permit was issued on April 29, 2002 and addressed a proposal to make the following changes to some storage tanks:

1. Two tanks which stored lube oil product were destroyed in a fire in 1999 and have not yet been replaced. The refinery plans to move two existing identical tanks to replace these tanks. These tanks will be designated as #328 and #329. Both tanks have a capacity of 1,000 barrels each (42,000 gallons) and will be subject to the record keeping provisions of 40 CFR Part 60, Subpart Kb, since they will store organic liquids;

2. Two tanks (#330 and #331), which will store lube oil product, are planned for installation. The tanks have a capacity of 10,000 barrels each (420,000 gallons) and will be subject to record keeping provisions of 40 CFR 60, Subpart Kb, since they will store organic liquids;

3. Two tanks (#332 and #333), which will store lube oil product, are planned for installation. The tanks have a capacity of 500 barrels each (21,000 gallon) and will be subject to the record keeping provisions of 40 CFR 60, Subpart Kb, since they will store organic liquids; and

4. One existing tank (#284), which is currently permitted to store lube oil, will be removed from service.

The total emissions VOC from the six tanks amounted to less than 0.02 tons annually.

1227-AR-6 This permit was issued on August 2, 2002 and addressed the following modifications to the facility:

1. Tank #329 was recently permitted as a lube oil storage tank. This tank will be equipped with an internal floating roof and will store naphtha. The tank will be subject to the provisions of NSPS Subpart Kb. A floating roof meeting the requirements of 40 CFR 60 60.112b (a) (1) will be installed;

2. The existing naphtha tank #206 will be converted to a lube oil storage tank. It was constructed in 1980 and will not be modified with this project. Therefore, the tank will not be subject to NSPS Subpart Kb after the change of service;

3. Tanks #291 and #292 will be changing service from diesel to lube oil storage. The tanks were constructed in 1980. Therefore, the tanks will not be subject to NSPS Subpart Kb after the change of service; and

4. Tank #113 is currently permitted as a crude oil storage tank subject to NSPS Subpart Ka. It will be changing service to store Cross Oil's B Series lube oil (a mixture of lube oil and diesel). The tank was constructed in 1980. Therefore, the tank will not be subject to NSPS Subpart Kb (or NSPS Subpart Ka due to the low vapor pressure of the lube oil) after the change of service.

The above changes in tank service resulted in a decrease in VOC emissions of 2.9 tons per year. Without considering the reduction in emissions due to the change in service of the tanks, the total increase associated with this project is 0.74 tons VOC per year.

1227-AR-7 This permit was issued on October 29, 2002 and addressed the following modifications to the permit:

1. Addition of six tanks (001 through 006), which will store lube oil product, are planned for installation. The tanks have a capacity of 15,250

gallons each and will be subject to the record keeping provisions of 40 CFR 60, Subpart Kb, since they will store organic liquids; and

2. Addition of three tanks (007 through 009), which will store lube oil product, are planned for installation. The tanks have a capacity of 2,000 gallons each and will not be subject to the record keeping provisions of 40 CFR 60, Subpart K.

The above changes resulted in an increase of VOC emissions of 0.2 tons per year.

1227-AR-8 This permit was issued on May 30, 2003 and allowed the facility to modify its existing permitted emission rates based upon emission factors, physical property data, facility operating conditions, and revised emissions modeling. In addition, the facility proposed to include hazardous air pollutant (HAP) emissions, which were not included in permit 1227-AR-7, to permit emissions from offsite storage tanks, and to correct opacity limits. No production increases were proposed. The proposed changes resulted in an increase of 0.7 tons per year of SO2 emissions, 31.0 tons per year of CO emissions, and 15.8 tons per year of HAP emissions.

1227-AR-9 This permit was issued on April 19, 2004, and it allowed the facility to install two new 3,500 gallon lube oil storage tanks (#010p and #011p). The proposed change resulted in no production and negligible annual emissions increases.

1227-AR-10 This permit was issued September 28, 2004. CORC's proposal included the installation of one new 21,000 gallon reclaimed oil storage tank, one new 42,000 gallon reclaimed oil storage tank, and six new 16,800 gallon lube oil storage tanks. In addition to installing the new storage tanks, Cross Oil requested to remove #500, re-designate #332 as #500, and to re-designate #312 and #333 as #512 and #513, respectively.

1227-AR-11 This permit was issued April 11, 2005. The permit revision contained the following changes: converted two tanks currently containing asphalt to lube oil (Tank #223 and #224); added a new lube oil tank (Tank #331); converted a tank containing lube oil to naptha (Tank #312); corrected the current tank numbering by shifting Tank #012P though #017P each up one number, resulting in Tank #013P through #018P; added two new lube oil tanks (Tanks #012P and #019P of SN-27); added a seasonal 50 horsepower (0.125 MMBTU/hr) low pressure boiler as an insignificant activity; added a pre-heat lube charge heater, with a design rating of 6.0 MMBTU/hr (SN-30) with low NO_x burners; added 7 heat exchangers (no source number) to the process in order to increase efficiency and reduce reliance on the crude heaters; and removed the crude oil throughput limit. Total annual emission increases were 0.2 ton/yr PM/PM_{10}, 0.1 ton/yr SO_2, 0.4 ton/yr VOC, 1.3 ton/yr NO_x, and 2.2 ton/yr CO.

Section IV: EMISSION UNIT INFORMATION

Specific Conditions

1. The permittee will not exceed the emission rates set forth in the following table. [Regulation 19, §19.501 et seq., effective December 19, 2004 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Table 2 - Criteria Pollutants

SN	Description	Pollutant	lb/hr	tpy
01	Crude Charge Heater	PM_{10}	0.3	1.1
		SO_2	0.1	0.1
		VOC	0.2	0.8
		CO	2.6	11.3
		NO_X	2.9	*
02	Vacuum Tower Charge Heater	PM_{10}	0.1	0.3
		SO_2	0.1	0.1
		VOC	0.1	0.3
		CO	0.8	3.4
		NO_X	0.9	4.0
03	Asphalt Blow Still Charge Heater	PM_{10}	0.1	0.3
		SO_2	0.1	0.1
		VOC	0.1	0.2
		CO	0.7	3.0
		NO_X	0.8	3.5
04	Blow Still Incinerator Waste Heat Boiler	PM_{10}	8.5	33.3
		SO_2	0.1	0.1
		VOC	0.1	0.4
		CO	1.2	5.0
		NO_X	1.4	6.0
05	Boiler #1	Retired		
06	Boiler #3	Retired		
07	Hydrotreater Charge Heater	PM_{10}	0.1	0.2
		SO_2	0.1	0.1
		VOC	0.1	0.2
		CO	0.5	2.3
		NO_X	0.6	2.7
08	Hydrogen Plant Heater/Reactor	PM_{10}	0.3	1.0
		SO_2	0.1	0.1
		VOC	0.2	0.8
		CO	2.6	11.1
		NO_X	1.3	5.6

SN	Description	Pollutant	lb/hr	tpy
09	High Pressure Flare	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO_X	0.1	0.1
10	Low Pressure Flare	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO_X	0.1	0.1
11	Naphtha Storage Tank	Retired		
12	Lube Stripper Reboiler	PM_{10}	0.1	0.5
		SO_2	0.1	0.1
		VOC	0.1	0.4
		CO	1.1	4.8
		NO_X	1.3	5.7
13	Boiler #2	Retired		
14	Diesel/Naphtha/Kerosene Loading Rack	VOC	37.4	4.1
15	Asphalt Truck Loading Rack #1	VOC	0.1	0.1
16	Asphalt Truck Loading Rack #2	VOC	0.1	0.1
17	Lube Oil Truck Loading Rack	VOC	0.1	0.1
18	Lube Oil Truck Loading Rack	VOC	0.1	0.1
21	Lube Oil Rail Car Loading Rack	VOC	0.2	0.2
24	Wastewater Emissions	VOC	2.0	8.6
25	Cogeneration Unit	PM_{10}	0.6	2.5
		SO_2	0.1	0.3
		VOC	0.7	2.8
		CO	5.5	23.8
		NO_X	12.3	*
26	Boiler #4	PM_{10}	1.0	4.2
		SO_2	0.3	1.3
		VOC	0.4	1.7
		CO	6.1	26.5
		NO_X	3.8	*
27	Onsite Storage Tanks (119 Tanks) Tanks Subject to 40 CFR Part 60, Subpart Ka: 113, 197, 287, 288, 289, 290, 296, 297, 298, 299, 312, 313, 314, 315, 206, 266, 291, 292, 329, 503, 504	VOC	13.0	11.0
28	Sandyland Storage Tanks	VOC	4.8	20.7

SN	Description	Pollutant	lb/hr	tpy
	Tank #104, #110, #111 Tanks Subject to 40 CFR Part 60, Subpart Ka: #111			
29	Miller's Storage Tanks Tank #114 and #115	VOC	2.1	9.1
30	Lube Charge Pre-Heater	PM_{10} SO_2 VOC CO NO_X	0.1 0.1 0.1 0.5 0.3	0.2 0.1 0.1 2.2 1.3

* Single emission bubble for NO_X is 53 tpy for SN-01, 25, and 26

2. The permittee will not exceed the emission rates set forth in the following table. [Regulation 18, §18.801, effective February 15, 1999, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Table 3- Non-Criteria Pollutants

SN	Description	Pollutant	lb/hr	tpy
01	Crude Charge Heater	PM	0.3	1.1
02	Vacuum Tower Charge Heater	PM	0.1	0.3
03	Asphalt Blow Still Charge Heater	PM	0.1	0.3
04	Blow Still Incinerator Waste Heat Boiler	PM	8.5	33.3
05	Boiler #1	Retired		
06	Boiler #3	Retired		
07	Hydrotreater Charge Heater	PM	0.1	0.2
08	Hydrogen Plant Heater/Reactor	PM	0.3	1.0
09	High Pressure Flare	PM	0.1	0.1
10	Low Pressure Flare	PM	0.1	0.1
11	Naphtha Storage Tank	Retired		
12	Lube Stripper Reboiler	PM	0.1	0.5
13	Boiler #2	Retired		
14	Diesel/Naphtha/Kerosene Loading Rack	2,2,4-Trimethylpentane Benzene Cumene Ethylbenzene Hexane Naphthalene Phenol Styrene	0.37 5.83 0.23 0.71 21.63 0.07 0.01 0.03	0.04 0.63 0.03 0.08 2.33 0.01 0.01 0.01

SN	Description	Pollutant	lb/hr	tpy
		Toluene	4.36	0.47
		Xylene	2.16	0.24
17	Lube Oil Truck Loading Rack	Benzene	0.01	0.01
		Hexane	0.01	0.01
18	Lube Oil Truck Loading Rack	Benzene	0.01	0.01
		Hexane	0.01	0.01
21	Lube Oil Rail Car Loading Rack	Benzene	0.04	0.05
		Hexane	0.06	0.06
		Toluene	0.02	0.02
23	Fugitive Emissions	Benzene	0.49	2.15
		Cumene	0.01	0.03
		Ethylbenzene	0.04	0.18
		Hexane	0.72	3.12
		Toluene	0.18	0.79
		Xylene	0.07	0.27
24	Wastewater Emissions	Hexane	0.06	0.24
25	Cogeneration Unit	PM	0.6	2.5
26	Boiler #4	PM	1.0	4.2
27	Onsite Storage Tanks (119 Tanks) Tanks Subject to 40 CFR Part 60, Subpart Ka: 113, 197, 287, 288, 289, 290, 296, 297, 298, 299, 312, 313, 314, 315, 206, 266, 291, 292, 329, 503, 504	2,2,4-Trimethylpentane	0.10	0.05
		Benzene	0.45	0.65
		Cumene	0.01	0.01
		Ethylbenzene	0.07	0.06
		Hexane	0.89	1.19
		Toluene	0.37	0.31
		Xylene	0.10	0.10
28	Sandyland Storage Tanks Tank #104, #110, #111 Tanks Subject to 40 CFR Part 60, Subpart Ka: #111	2,2,4-Trimethylpentane	0.02	0.06
		Benzene	0.04	0.17
		Cumene	0.01	0.01
		Ethylbenzene	0.02	0.01
		Hexane	0.34	1.17
		Toluene	0.03	0.31
		Xylene	0.01	0.10
29	Miller's Storage Tanks Tank #114 and #115	2,2,4-Trimethylpentane	0.01	0.03
		Benzene	0.02	0.08
		Ethylbenzene	0.01	0.01
		Hexane	0.15	0.64
		Toluene	0.01	0.05
		Xylene	0.01	0.02
30	Lube Charge Pre-Heater	PM	0.1	0.2

3. Visible emissions will not exceed the limits specified in the following table of this permit as measured by EPA Reference Method 9. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

Table 4 - Visible Emissions

SN	Limit	Regulatory Citation
01, 02, 03, 07, 08, 12, 25, 26, 30	5%	§19.503
04, 14-21	20%	§19.503

4. The permittee will not cause or permit the emission of air contaminants, including odors or water vapor and including an air contaminant whose emission is not otherwise prohibited by Regulation #18, if the emission of the air contaminant constitutes air pollution within the meaning of A.C.A. §8-4-303. [§18.801 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-31]

5. The permittee will not conduct operations in such a manner as to unnecessarily cause air contaminants and other pollutants to become airborne. [§18.901 of Regulation 18, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

SN-01, SN-25, and SN-26 Conditions

6. The permittee shall not emit more than 53 tons of NO_X at SN-01, SN-25 and SN-26 combined per consecutive 12 month period. NO_X emissions shall be calculated by monitoring fuel inlet flow to all three sources and applying the following emission factors, unless the Department determines that testing results or other credible evidence indicate that other factors should be used: [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Table 5 – NO_X Emission Factors for SN-01, SN-25, and SN-26

Source Number	Emission Factor*	Emission Factor Source
SN-01	(92.4 lb NO_X) / (10^6 ft^3 natural gas)	Stack Test
SN-25, Cogeneration Unit	(184.6 lb NO_X) / (10^6 ft^3 natural gas)	Vendor Data
SN-26	(40 lb NO_X) / (10^6 ft^3 natural gas)	Vendor Data

*Emission factors are calculated based on heat value of 1020 Btu/ scfm for natural gas.

7. The permittee shall maintain monthly records of fuel usage and NO_X emissions for sources SN-01, SN-25, and SN-26 which demonstrates compliance with Specific Condition #6. Records shall be updated by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total and each individual month's data shall be kept on site, and shall be made available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

8. The permittee shall install and maintain dedicated meters on the natural gas piping which feeds each emission unit specified in Specific Condition #6. [Regulation 19 §19.703 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN-04 Condition

9. The permittee shall maintain monthly records providing PM emissions from asphalt blowing at the Blow Still Incinerator Waste Heat Boiler. These emissions shall be calculated using the production rate multiplied by the PM emission factor of 0.81 lb/ton of asphalt. These records shall include ton per year PM calculations and thus demonstrate compliance with the limits in Specific Condition #1. Records shall be updated by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total and each individual month's data shall be kept on site, and shall be made available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN-09 and SN-10 Conditions

10. The permittee shall report an upset condition any time that the flares are used. The permittee shall report the upset (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence. The permittee shall submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, it need not be submitted again. [Regulation 19 §19.601 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SN-14 through SN-21 Conditions

11. The permittee shall maintain monthly records providing VOC emissions from the loading of diesel, naphtha, kerosene, asphalt, and lube oil at the loading racks. The emission formulas and emission factors to be used can be found in Appendix F. These VOC records shall include ton per year VOC and HAP calculations and thus demonstrate compliance with the VOC limits in Specific Condition #1 and the HAP limits in Specific Condition #2. Records shall be updated by the fifteenth day of the month following the month to which the records pertain. A twelve month rolling total and each individual month's data shall be kept on site, and shall be made available to Department personnel upon request. [Regulation 19 §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

NSPS GG Conditions

12. The cogeneration unit (SN-25) is an affected source of 40 CFR Part 60, Subpart GG – *Standards of Performance for Stationary Gas Turbines*. [Regulation 19 §19.304 and 40 CFR Part 60, Subpart GG]

    a. The turbine shall not discharge any gases which contain nitrogen oxides in excess of 209 ppm by volume at 15 percent oxygen on a dry basis. [40 CFR Part 60, Subpart GG, §60.332 (a) (2)]

b. The turbine is exempt from Specific Condition #12 (a) when ice fog is deemed a traffic hazard by the owner or operator of the gas turbine. [40 CFR Part 60, Subpart GG, §60.332 (f)]

c. The cogeneration unit shall only be fired with pipeline quality natural gas. [Regulation No. 19 §19.705, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR 70.6]

d. No owner or operator shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight. [40 CFR Part 60, Subpart GG, §60.332 (b)]

e. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The approved reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR 60.335 (b) (2). [40 CFR Part 60, Subpart GG, §60.335 (d)]

f. The fuel supply shall be initially sampled daily for a period of two weeks to establish that the pipeline quality natural gas fuel supply is low in sulfur content. [Regulation No. 19 §19.705, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR 70.6]

g. After the monitoring required in Specific Condition #12 (e), sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters. [40 CFR Part 60, Subpart GG, §60.335 (d)]

h. If after the monitoring required in Specific Condition #12 (f), the sulfur content of the fuel shows little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60, Subpart GG, §60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year. [40 CFR 60, Subpart GG, §60.333]

i. Should any sulfur analysis as required in Specific Condition #12 (f) or (g) indicate noncompliance with 40 CFR 60, Subpart GG, §60.333, the owner or operator shall notify ADEQ of such excess emissions and the custom schedule shall be re-examined. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined. [Regulation No. 19 §19.303 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

j. If there is a change in fuel supply (supplier), the fuel shall be sampled daily for a period of two weeks to re-establish for the record that the fuel supply is low in sulfur content. If the fuel supply's low sulfur content is re-established, then the custom fuel monitoring

schedule can be resumed. [Regulation No. 19 §19.705, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

k. Records of sample analysis and fuel supply pertinent to this custom schedule shall be retained for a period of three years, and be available for inspection. [Regulation No. 19 §19.705, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

l. Any one hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with §60.332 by the performance test required in §60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in §60.8 shall be recorded. Each record entry shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under §60.335 (a). These records shall be retained for a period of five years, and be available for inspection. [40 CFR Part 60, Subpart GG, §60.334]

m. Records shall be kept of any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent. These records shall be retained for a period of five years, and be available for inspection. [40 CFR Part 60, Subpart GG, §60.334]

n. Records shall be kept for each period which Specific Condition #12 (b) applies. For each period the ambient conditions existing during the period, the date and time the air pollution control system was deactivated, and the date and time the air pollution control system was reactivated shall be recorded. These records shall be retained for a period of five years, and be available for inspection. [40 CFR Part 60, Subpart GG, §60.334]

o. The permittee shall perform an initial test of NO_X and SO_2 to verify emissions. EPA Method 20 shall be used to determine the nitrogen oxides and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. NO_X emissions shall be determined at each of the load conditions specified in §60.335 (c) (2). The testing shall be coordinated in advance with the Compliance Inspector Supervisor. This initial test was performed in March 2005. [40 CFR Part 60, Subpart GG, §60.335]

13. The permittee shall test NO_X emissions once every five years to verify that the unit is operating within permitted limits. The permittee shall utilize the procedure outlined in 40 CFR Part 60, Subpart GG §60.335 and as previously conducted in the initial test required by Specific Condition #12(o). The testing shall be coordinated in advance with the Compliance Inspector Supervisor. [Regulation No. 19 §19.702, 40 CFR Part 52, Subpart E and 40 CFR Part 60, Subpart GG, §60.335]

NSPS Ka Conditions

14. The onsite storage tanks of SN-27 which are subject to provisions for 40 CFR Part 60, Subpart Ka and their requirements are listed in the following table. [Regulation No. 19 §19.304 and 40 CFR Part 60, Subpart Ka]

Table 6 – Storage Tanks Subject 40 CFR Part 60, Subpart Ka

Tank	Contents	NSPS Requirement
113, 197, 287, 288, 289, 290, 296, 297, 298, 299, 313, 314, 315	Lube Oils	Pursuant to 40 CFR 60.115a (a), maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.
206, 266, 291, 292	Diesel	
329, 312	Naphtha	
503, 504	Reclaimed Oil	
111	Crude	

NESHAP FF Conditions

15. The facility is an affected source according to 40 CFR Part 61, Subpart FF – *National Emission Standard for Benzene Waste Operations*. [Regulation No. 19 §19.304 and 40 CFR Part 61, Subpart FF]

    a. The owner and operator shall determine the total annual benzene quantity from facility waste by the procedures outlined in §61.355 (a). [40 CFR Part 61, Subpart FF, §61.355]

    b. The facility shall comply with all record keeping requirements outlined in §61.356 (b). [40 CFR Part 61, Subpart FF, §61.355 (a)]

    c. The facility shall submit reports to the Department by following the procedures of §61.357 (a) (1)-(4). In cases where the total annual benzene quantity is less than 1 Mg/yr [as determined in Specific Condition #15 (a)], reports will comply with §61.357 (b). In cases where the total annual benzene quantity is greater than 1 Mg/yr but less than 10 Mg/yr, reports will comply with §61.357 (c). And when the total annual benzene quantity is greater than 10 Mg/yr, reports will comply with §61.357 (d). [40 CFR Part 61, Subpart FF, §61.357]

Section V: INSIGNIFICANT ACTIVITIES

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and 19 Appendix A. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated November 29, 2004.

Table 7 - Insignificant Activities

Description	Category
50 horsepower (0.125 MMBTU/hr) Low Pressure Boiler	A-1

Section VI: GENERAL CONDITIONS

1. Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.). Any terms or conditions included in this permit that specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.

2. This permit does not relieve the owner or operator of the equipment and/or the facility from compliance with all applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated under the Act. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

3. The permittee will notify the Department in writing within thirty (30) days after commencement of construction, completion of construction, first operation of equipment and/or facility, and first attainment of the equipment and/or facility target production rate. [§19.704 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation 19) and/or A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

4. Construction or modification must commence within eighteen (18) months from the date of permit issuance. [§19.410(B) of Regulation 19 and/or §18.309(B) of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

5. The permittee must keep records for five years to enable the Department to determine compliance with the terms of this permit--such as hours of operation, throughput, upset conditions, and continuous monitoring data. The Department may use the records, at the discretion of the Department, to determine compliance with the conditions of the permit. [§19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

6. A responsible official must certify any reports required by any condition contained in this permit and submit any reports to the Department at the address below. [§19.705 of Regulation 19 and/or §18.1004 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Arkansas Department of Environmental
Quality
Air Division
ATTN: Compliance Inspector Supervisor
Post Office Box 8913
Little Rock, AR 72219

7. The permittee will test any equipment scheduled for testing, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) newly constructed or modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start-up of the permitted source or (2) existing equipment already operating according to the time frames set forth by the Department. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. The permittee must submit compliance test results to the Department within thirty (30) days after the completion of testing. [§19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

8. The permittee will provide: [§19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

   a. Sampling ports adequate for applicable test methods

   b. Safe sampling platforms

   c. Safe access to sampling platforms

   d. Utilities for sampling and testing equipment

9. The permittee will operate equipment, control apparatus and emission monitoring equipment within their design limitations. The permittee will maintain in good condition at all times equipment, control apparatus and emission monitoring equipment. [§19.303 of Regulation 19 and/or §18.1104 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

10. If the permittee exceeds an emission limit established by this permit, the permittee will be deemed in violation of said permit and will be subject to enforcement action. The Department may forego enforcement action for emissions exceeding any limits established by this permit provided the following requirements are met: [§19.601 of Regulation 19 and/or §18.1101 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

    a. The permittee demonstrates to the satisfaction of the Department that the emissions resulted from an equipment malfunction or upset and are not the result of negligence or improper maintenance, and the permittee took all reasonable measures to immediately minimize or eliminate the excess emissions.

b. The permittee reports the occurrence or upset or breakdown of equipment (by telephone, facsimile, or overnight delivery) to the Department by the end of the next business day after the occurrence or the discovery of the occurrence.

c. The permittee must submit to the Department, within five business days after the occurrence or the discovery of the occurrence, a full, written report of such occurrence, including a statement of all known causes and of the scheduling and nature of the actions to be taken to minimize or eliminate future occurrences, including, but not limited to, action to reduce the frequency of occurrence of such conditions, to minimize the amount by which said limits are exceeded, and to reduce the length of time for which said limits are exceeded. If the information is included in the initial report, the information need not be submitted again.

11. The permittee will allow representatives of the Department upon the presentation of credentials: [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

a. To enter upon the permittee's premises, or other premises under the control of the permittee, where an air pollutant source is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit, or the Act;

c. To inspect any monitoring equipment or monitoring method required in this permit;

d. To sample any emission of pollutants; and

e. To perform an operation and maintenance inspection of the permitted source.

12. The Department issued this permit in reliance upon the statements and presentations made in the permit application. The Department has no responsibility for the adequacy or proper functioning of the equipment or control apparatus. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

13. The Department may revoke or modify this permit when, in the judgment of the Department, such revocation or modification is necessary to comply with the applicable provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated the Arkansas Water and Air Pollution Control Act. [§19.410(A) of Regulation 19 and/or §18.309(A) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

14. This permit may be transferred. An applicant for a transfer must submit a written request for transfer of the permit on a form provided by the Department and submit the disclosure statement required by Arkansas Code Annotated §8-1-106 at least thirty (30) days in advance of the proposed transfer date. The permit will be automatically transferred to the new permittee unless the Department denies the request to transfer within thirty (30) days of

the receipt of the disclosure statement. The Department may deny a transfer on the basis of the information revealed in the disclosure statement or other investigation or, deliberate falsification or omission of relevant information. [§19.407(B) of Regulation 19 and/or §18.307(B) of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

15. This permit shall be available for inspection on the premises where the control apparatus is located. [A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

16. This permit authorizes only those pollutant emitting activities addressed herein. [A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

17. This permit supersedes and voids all previously issued air permits for this facility. [Regulation 18 and 19 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311]

18. The permittee must pay all permit fees in accordance with the procedures established in Regulation No. 9. [A.C.A §8-1-105(c)]

APPENDIX A

40 CFR Part 60, Subpart Ka – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification commenced after May 18, 1978, and prior to July 23, 1984*

APPENDIX B

40 CFR Part 60, Subpart GG – *Stationary Gas Turbines*

APPENDIX C

40 CFR Part 61, Subpart FF – *National Emission Standards for Hazardous Air Pollutants, Benzene Waste Operations*