Certified Mail No.:

Agency Interest No. 26003
Activity No.: PER20050029

Mr. Gary K. Simmons
Valero Refining – New Orleans, LLC
14902 River Road
Norco, Louisiana 70079

RE: PSD-LA-619(M2), St. Charles Refinery, Valero Refining – New Orleans, LLC, New Sarpy, St. Charles Parish, Louisiana

Dear Mr. Simmons:

Enclosed is your permit, PSD-LA-619(M2). Construction of the proposed project is not allowed until such time as the corresponding operating permit or authorization to construct is issued. Should you have any questions concerning the permit, contact Dan C. Nguyen at 225-219-3075.

Sincerely,

Chuck Carr Brown, Ph.D.
Assistant Secretary

_____
Date

CCB: DCN

c: US EPA Region VI

PSD-LA-619(M2)
AI No. 26003

AUTHORIZATION TO CONSTRUCT AND OPERATE A NEW OR MODIFIED FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Valero Refining – New Orleans, LLC
14902 River Road
Norco, Louisiana 70079

is authorized to increase the St. Charles Refinery's capacity from 220,000 bbls/day to 380,000 bbls/days. The refinery is located in

New Sarpy
St. Charles Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on _____, 2008, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this_____day of _____, 2006.

Chuck Carr Brown, Ph.D.
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2)

PURPOSE

To increase the St. Charles Refinery's production capacity from 220,000 bbls/day to 380,000 bbls/days.

RECOMMENDATION

Approval of the proposed permit modification.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division

PROJECT DESCRIPTION

Valero Refining – New Orleans, LLC (Valero) proposed to increase the St. Charles Refinery's production capacity from 220,000 bbls/day to 380,000 bbls/day by modifying existing production units and installing new processing units.

The following equipment will be constructed or modified at the refinery: Coker Unit, Aromatic Recovery Unit (ARU), Hydrotreating Units, Hydrocracking Units (HCU), Light Ends Units (LEU), Fluidized Catalytic Cracking Unit (FCCU), Alkyl Unit, Continuous Catalytic Reforming Units (CCR), Sulfur Recovery Unit (SRU), Crude Unit, Vacuum Unit, Steam Methane Reformers (SMR) Unit or Hydrogen Plants, Isomerization Unit, Wastewater Treatment Unit (WWTU), and supporting facilities, such as flares, boilers, boiler feed water capacity, sour water strippers, amine regeneration systems, PSA Units, product fractionation capabilities, cooling water towers, storage tanks, barge loading capabilities with a new marine vapor recovery system, an electrical substation, and additional plant/instrumentation air compression and drying.

Valero originally planned to use an emissions cap to limit NO_X emissions from the Ultra Low Sulfur Diesel (ULSD) project to be below the PSD significance level. Valero now requests the NO_X emission cap be removed. Due to the cap removal, boilers, heaters, a flare, a cooling tower, and fugitive emissions from the ULSD project will be subject to the PSD review. Emissions from Heater F-33-05, Heater H-39-01, Boiler B-401C, and Boiler B-401D which are currently operated under Permit PSD-LA-571(M1), dated February 10, 1995, will increase above the PSD permit limits. These heaters and boilers along with their limits and requirements will be included in this PSD permit.

Emissions from the project in tons per year are as follows:

BRIEFING SHEET

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2)

Pollutant	Permitted	Proposed	Permit Change	Project Change	Contemporaneous Change	Net Change
PM_{10}	422.10	1061.71	+ 639.61	+ 720.96	+ 47.01	+ 767.97
SO_2	1288.31	3449.39	+ 2161.08	+ 1929.12	+ 247.21	+ 2176.33
NO_X	3964.30	3450.09	- 514.21	+ 1908.18	+ 315.25	+ 2223.43
CO	1027.87	5595.01	+ 4567.14	+ 4304.52	+ 803.18	+ 5107.70
VOC	2685.73	3648.34	+ 962.61	+ 2266.48	+ 21.39	+ 2287.87
H_2S	65.30	79.25	+ 13.95	+ 22.53	-	+ 22.53
H_2SO_4	11.55	23.10	+ 11.55	+ 11.52	-	+ 11.52
Others	21.12	47.29	+ 26.17			

TYPE OF REVIEW

PM/PM_{10}, SO_2, NO_X, CO, VOC, H_2S, and H_2SO_4 emissions will increase above the PSD significance levels. These pollutants will be reviewed under the PSD regulations.

BEST AVAILABLE CONTROL TECHNOLOGY

PM/PM_{10}, SO_2, NO_X, CO, VOC, H_2S, and H_2SO_4 emissions from the affected equipment are controlled by BACT. Affected equipment includes heaters and boilers, thermal oxidizers, a catalyst cracking unit, a flare, tanks, fugitive components, and other associated equipment.

AIR QUALITY IMPACT ANALYSIS

Screen dispersion modeling indicated that CO emissions from the proposed project will be below the PSD significant impact level. Refined modeling for CO is not required. Refined modeling for PM_{10}, NO_X, and SO_2 indicated that emissions of these pollutants from the proposed project will not cause or contribute to any National Ambient Air Quality Standards (NAAQS) exceedances. The computer models also indicated that the allowable increments for PM_{10}, SO_2, and NO_X will be preserved.

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. The project will create approximately 2000 jobs per year for three years.

PROCESSING TIME

Application Dated: December 21, 2005

BRIEFING SHEET

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2)

Additional Information Dated:	January 20, February 15, May 31, June 2, August 4, 2006
Effective Completeness:	August 8, 2006

PUBLIC NOTICE

A notice requesting public comment on the proposed permit was published in *The Advocate*, Baton Rouge, LA and in the *St. Charles Herald Guide*, Boutte, LA on XXX, 2006. The notice was also mailed to individuals and organizations on the mailing list of the facility and published in the Office of Environmental Services Public Notice Mailing List. The permit application and the proposed permit were submitted to the XXX Parish Library on XXX, 2006. The proposed permit was submitted to the US EPA Region VI. All comments will be considered prior to a permit decision.

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2), AUGUST 8, 2006

I. APPLICANT

Valero Refining – New Orleans, LLC
14902 River Road
Norco, Louisiana 70079

II. LOCATION

St. Charles Refinery is located at 14902 River Road, Norco, Louisiana 70079. Approximate UTM coordinates are 751.9 kilometers East and 3319.9 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Valero Refining – New Orleans, LLC proposed to increase the St. Charles Refinery's capacity from 220,000 bbls/day to 380,000 bbls/day by modifying existing production units and installing new processing units.

The following equipment will be constructed or modified at the refinery: Coker Unit, Aromatic Recovery Unit (ARU), Hydrotreating Units, Hydrocracking Units (HCU), Light Ends Units (LEU), Fluidized Catalytic Cracking Unit (FCCU), Alkyl Unit, Continuous Catalytic Reforming Units (CCR), Sulfur Recovery Unit (SRU), Crude Unit, Vacuum Unit, Steam Methane Reformers (SMR) Unit or Hydrogen Plants, Isomerization Unit, Wastewater Treatment Unit (WWTU), and supporting facilities, such as flares, boilers, boiler feed water capacity, sour water strippers, amine regeneration systems, PSA Units, product fractionation capabilities, cooling water towers, storage tanks, barge loading capabilities with a new marine vapor recovery system, an electrical substation, and additional plant/instrumentation air compression and drying.

Valero originally planned to use an emissions cap to limit NO_X emissions from the Ultra Low Sulfur Diesel (ULSD) project to be below the PSD significance level. Valero now requests the NO_X emission cap be removed. Due to the cap removal, boilers, heaters, a flare, a cooling tower, and fugitive emissions from the ULSD project will subject to the PSD review. Emissions from Heater F-33-05, Heater H-39-01, Boiler B-401C, and Boiler B-401D which currently operate under Permit PSD-LA-571(M1), dated February 10, 1995, will increase above the PSD permit limits. These heaters and boilers along with their limits and requirements will be included in this PSD permit.

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Pollutant	Permitted	Proposed	Permit Change	Project Change	Contemporaneous Change	Net Change
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CO	1027.87	5595.01	+ 4567.14	+ 4304.52	+ 803.18	+ 5107.70
VOC	2685.73	3648.34	+ 962.61	+ 2266.48	+ 21.39	+ 2287.87
H_2S	65.30	79.25	+ 13.95	+ 22.53	-	+ 22.53
H_2SO_4	11.55	23.10	+ 11.55	+ 11.52	-	+ 11.52
Others	21.12	47.29	+ 26.17			

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for new major or modified major stationary sources requires review under Prevention of Significant Deterioration regulations, LAC 33:III.509. PSD review entails the following analyses:

A. A determination of the Best Available Control Technology (BACT);

B. An analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related growth impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2), AUGUST 8, 2006

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

Valero proposed to increase the St. Charles Refinery's capacity from 220,000 bbls/day to 380,000 bbls/day by modifying existing production units and installing new processing units. PM/PM_{10}, SO_2, NO_X, CO, VOC, H_2S, and H_2SO_4 emissions will increase above the PSD significance levels. These pollutants will be reviewed under the PSD regulations. BACT analyses are required for these pollutants.

BACT analysis for NO_X emissions from boilers and heaters

Selective catalytic reduction (SCR) is the most effective post-combustion NO_X control method analyzed. In the process, a reducing agent is introduced into the flue gas upstream of a catalyst bed which is maintained at elevated temperature. Approximately 80% - 90% NO_X reduction can be achieved with ammonia as the reducing agent. However, ammonia emissions are a negative side effect of the technology. Implementing SCR would require substantial capital expenditures and additional energy to keep the catalyst bed at high temperatures.

Selective noncatalytic reduction (SNCR) is a post-combustion process in which a reagent mixture is injected into the elevated temperature flue gas stream. Using urea solution as reagent, the NO_XOUT^{TM} process can reduce 85% of NO_X into nitrogen, water, and carbon dioxide. The process may release ammonia during the incomplete decomposition of urea. Additional energy is required to increase flue gas temperatures to process conditions.

Staged combustion (low NO_X) burners are designed for distributed air flow and minimal flame length to optimize furnace conditions and minimize NO_X levels. The amount of NO_X formed during combustion is influenced by time, temperature, and oxygen concentration. Low NO_X burners minimize NO_X formation by lowering flame temperatures through staged fuel and air combustion. No additional energy is required.

In the flue gas recirculation (FGR) technique, the air/natural gas mixture fed to the boilers/heaters is diluted with hot flue gas to reduce NO_X emissions by lowering flame temperature and suppressing oxygen partial pressure. Flue gases are recirculated either with an external or an internal design. To maximize the NO_X reduction, the FGR technique can be combined with other options, such as LNB+FGR (also known as ultra Low NO_X Burner, ULNB), SCR+LNB+FGR, and SNCR+LNB+FGR.

A comparison of the control strategies listed above indicates that for controlling NO_X emissions from the affected boilers and heaters, the highest control efficiency is the combination of SCR and ULNB. The cost effectiveness of this combination ranged from $3,748/ton to $20,407/ton. The incremental cost effectiveness for this option over ULNB only is between $20,905/ton and $55,881/ton. Because of the high cost effectiveness and incremental cost effectiveness, this combination is determined as economically infeasible and was rejected as BACT for NO_X emissions from boilers and heaters.

The next control option is the combination of SNCR and ULNB. This combination has never been used in industry and there is no information available to demonstrate that the theoretical NO_X emissions level can be achieved. SNCR in combination with ULNB is not considered technically feasible and was rejected as BACT for the control of NO_X emissions from the proposed boilers and heaters.

SCR can be used as an add-on control without the installation of the ULNB. Because of high capital costs, the cost effectiveness ranges from $4,514/ton to $21,896/ton. The incremental cost effectiveness for this option (above ULNB) is between $35,127/ton and $63,668/ton. Because of the high cost effectiveness and incremental cost effectiveness, this combination is determined as economically infeasible and was rejected as BACT for NO_X emissions from boilers and heaters.

Valero proposed ULNB as BACT for NO_X emissions from all proposed boilers and heaters. The ULNB will limit NO_X emissions to 0.04 lbs/MM BTU from the proposed heaters and boilers. ULNB is an effective NO_X emissions control option with no significant impact on the economic viability of the proposed project (cost effectiveness from $42/ton to $175/ton). Therefore, ULNB were determined as BACT to limit NO_X emissions to 0.04 lbs/MM BTU from the proposed heaters and boilers. Valero also proposed LNB as BACT to control NO_X emissions from two existing affected heaters to 0.08 lbs/MM BTU. LNB to control NO_X emissions to 0.08 lbs/MM BTU were determined as BACT for NO_X emissions from two existing affected heaters.

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
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NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2), AUGUST 8, 2006

BACT analysis for CO emissions from boilers and heaters

Thermal oxidation is the first control option considered for CO emissions. Flue gases from combustion equipment could be routed through a thermal oxidizer where the gases will be heated to an operating range of 1200 - 2000°F. At this temperature, carbon monoxide and VOC will be burned to carbon dioxide. Raising exit gas to the appropriate temperature range will require a significant amount of energy and generate a large quantity of secondary emissions.

Catalytic combustion of carbon monoxide is another control option. Flue gas can be burned in a catalyst bed at 650 - 800°F. Approximately 90 percent of the carbon monoxide would be converted to carbon dioxide. Additional energy is required to maintain flue gas at an appropriate temperature and send it through the catalyst bed. The catalyst bed, containing heavy metals, requires periodic replacement and recycling and/or disposal. Particulates and sulfur dioxide may plug or poison the catalyst beds.

CO emissions can also be controlled using proper equipment designs and operations, good combustion practices, and gaseous fuels, which are usually less efficient than the oxidation technologies, but they have minimal environmental and economic impacts.

Heaters and boilers can be considered as thermal oxidizers themselves, adding another thermal oxidizer downstream of a heater or boiler to control CO is impractical and is rejected as BACT. Catalytic combustion is rarely used to control CO emissions from natural gas or refinery fuel gas-fired boilers and heaters. Catalytic combustion will maintain CO emissions at or below 0.08 lbs/MM BTU. Valero proposed proper equipment designs and operations (ULNB), good combustion practices, and gaseous fuels to limit CO emissions from all affected boilers and heaters to 0.08 lbs/MM BTU as BACT. The proposed BACT is as stringent as catalytic combustion (0.08 lbs/MM BTU). Proper equipment designs and operations (LNB/ULNB), good combustion practices, and gaseous fuels will have no significant environmental impact or economic impact on the project. Therefore, proper equipment designs and operations (LNB/ULNB), good combustion practices, and gaseous fuels to limit CO emissions from the boilers and heaters to 0.08 lbs/MM BTU are determined as BACT.

BACT analysis for PM/PM_{10} emissions from boilers and heaters

Control techniques for PM/PM_{10} include cyclones, electrostatic precipitators (ESP), fabric filters, wet scrubbers, good combustion practices, and use of gaseous fuels.

Cyclones collect particulate laden gases and force them to spin in a vortex resulting in a change in direction of the particles. The particles then drop out of the gas stream. Cyclones are generally used to reduce dust loading and collect large particles.

ESPs operate by electrically charging particles and then separating them from the gas stream

with a collector of opposite charge. High voltage direct current discharge electrodes, typically wires, are suspended in the gas stream to impose a negative charge on the particles. The particles are driven to positive collecting electrodes (typically plates) located opposite the wires. Particles are removed from the collection plates by rapping devices that strike the collection and discharge electrodes. The dust falls into hoppers and is conveyed to a disposal system. ESPs are usually used to capture coarse particles at high concentrations. Small particles at low concentrations are not effectively collected by an ESP.

In the fabric filter or baghouse, particle-laden gas passes through the filter bags, retaining particles on the filters. The filters are periodically cleaned via shaking, reverse airflow, or pulse jet cleaning. During cleaning, particles are deposited in a hopper for subsequent disposal. Fabric filters are used for medium and low gas flow streams with high particulate concentrations.

PM/PM_{10} can be removed from a vent stream using a wet scrubber. Vent gas usually flows countercurrently with water, which removes particulate from the gas. Particulates are then separated from water and then disposed.

Depending on the design, cyclones, ESPs, fabric filters, and wet scrubbers can achieve similar removal efficiencies. These techniques are not effective with streams containing a low concentration of small particulates, such as emissions from natural gas and refinery fuel gas-fired boilers and heaters. PM/PM_{10} concentrations in the natural gas and refinery fuel gas-fired boilers and heaters are even less than the concentrations guaranteed by the cyclones, ESPs, fabric filters, and wet scrubbers. Therefore, cyclones, ESPs, fabric filters, and wet scrubbers are rejected as BACT for PM/PM_{10} emissions from heaters and boilers.

Valero proposed proper equipment designs and operations, good combustion practices, and gaseous fuels as BACT for PM/PM_{10} emissions from all affected heaters and boilers. These are determined as BACT.

BACT analysis for VOC emissions from boilers and heaters

VOC emissions can be controlled by various means, including regenerative thermal oxidizers (RTO), regenerative catalytic oxidizers (RCO), absorption and adsorption processes, and biofiltration. These control techniques are only effective for streams with high VOC concentrations. Therefore, regenerative thermal oxidizers (RTO), regenerative catalytic oxidizers (RCO), absorption and adsorption processes, and biofiltration are rejected as BACT for VOC emissions from natural gas and refinery fuel gas-fired boilers and heaters. The next options are proper equipment designs and operations (LNB/ULNB), good combustion practices, and gaseous fuels. These are determined as BACT for VOC emissions from boilers and heaters.

BACT analysis for SO_2 emissions from boilers and heaters

The most effective way to control SO_2 emissions from boilers and heaters is preventing the formation of SO_2 using low sulfur fuels. Valero proposed to use pipeline quality natural gas or NSPS Subpart J refinery fuel gases as fuels in all affected boilers and heaters. This is determined as BACT.

BACT analysis for NO_X emissions from the FCCU No. 3

NO_X emissions from the Fluidized Catalytic Cracking Unit (FCCU) can be controlled using an add-on device, such as SCR or SNCR. The most stringent level of NO_X emissions from an FCCU is reported at 50 ppmv or equivalent. Valero proposed to limit NO_X emissions from the FCCU to 20 ppmv which is less than the current most stringent standard of 50 ppmv, as BACT. Limiting NO_X emissions from the FCCU to 20 ppmv is determined as BACT.

BACT analysis for CO emissions from the FCCU No. 3

CO is created in the FCCU as a product of partial oxidation of the coke produced in the cracking process. FCCUs can be designed with a CO boiler to control CO emissions. High temperature regeneration of the FCCU catalyst, also referred to as "full burn" FCCU, is a more advanced technology that minimizes CO emissions by achieving more complete oxidation of CO to CO_2 and allows for more efficient recovery of the heat generated in the FCCU. CO emissions from a partial burn FCCU with a CO boiler are between 50 and 400 mg/Nm^3, while CO emissions from a full burn FCCU range from 35 – 250 mg/Nm^3. The FCCU with full burn design is considered as the top option for CO control. Therefore, a full burn FCCU is determined as BACT for CO.

BACT analysis for VOC and H_2S emissions from the FCCU No. 3

Valero proposed the full burn FCCU as BACT for VOC and H_2S emissions. The full burn design is a more advanced technology that minimizes VOC and H_2S emissions by achieving more complete oxidation of VOC and H_2S and allows for more efficient recovery of the heat generated in the FCCU and, therefore, minimizes VOC and H_2S emissions. The full burn FCCU is determined as BACT.

BACT analysis for PM/PM_{10}, SO_2, and H_2SO_4 emissions from the FCCU No. 3

PM/PM_{10} consists of catalyst dust and products of incomplete combustion. SO_2 is a product of combustion of total reduced sulfur (TRS), including H_2S. Portions of SO_2 emissions are converted to H_2SO_4 upon contact with moisture. Control of PM/PM_{10} includes cyclones, ESP, fabric filters, and scrubbers. Only a wet scrubber can effectively control PM/PM_{10}, SO_2, and H_2SO_4 at the same time. Valero proposed a wet gas scrubber with 90% SO_2 removal efficiency or to reduce SO_2 concentration in flue gas to 50 ppmv (annual average) as BACT for PM/PM_{10}, SO_2, and H_2SO_4. A wet gas scrubber with 90% SO_2 removal efficiency or reducing SO_2 concentration in flue gas to 50 ppmv (annual average) is determined as

BACT.

BACT analysis for VOC emissions from cooling towers

Small quantities of VOC from the process side of the heat exchangers may be leaked to the cooling water side of the heat exchangers and then released to the atmosphere from the cooling towers. Conducting a monitoring program is the only effective option to minimize VOC emissions and is determined as BACT for VOC emissions from the cooling towers.

BACT analysis for PM/PM_{10} emissions from cooling towers

A small amount of water will be entrained and carried over with exit air from the towers. Suspended solids and dissolved materials in the entrained water are emitted as particulates. The cooling towers will be designed with integrated drift eliminators to minimize drift loss. This is the only control option for PM/PM_{10}. Drift eliminators are determined as BACT for PM/PM_{10} emissions from the cooling towers.

BACT analysis for VOC and H_2S emissions from process vents

VOC and H_2S emissions from process vents could be controlled by combustion, condensers, scrubbers, and adsorbers. Because flow rates of process vents at St. Charles Refinery are high and varied, thermal oxidizers, scrubbers, and adsorbers are not technically feasible. The only remaining option is the flare which can maintain minimum VOC destruction efficiency at 98%. Flares effectively control VOC and H_2S emissions from large vent streams during both normal operations and emergency situations. Flares complying with 40 CFR 63 Subpart A to ensure 98% VOC control efficiency are determined as BACT for VOC and H_2S emissions from process vents.

BACT analysis for VOC emissions from fugitive components

The only option to control VOC emissions from fugitive equipment is conducting a leak detection and repair (LDAR) program to prevent and promptly repair any VOC leaks. The St. Charles Refinery's current LDAR program meets all requirements of the LA Refinery MACT. Valero proposed to include the proposed components into the existing LDAR for the refinery. Fugitive component at the proposed ARU will comply with 40 CFR 63 Subpart H. Conducting an LDAR program that meets requirements of 40 CFR 63 Subpart H is determined as BACT for fugitive VOC emissions from the proposed ARU. Conducting a LDAR program that meets requirements of LA Refinery MACT is determined as BACT for fugitive VOC emissions from the affected components, other than those at the ARU.

BACT analysis for VOC emissions from storage tanks

Valero proposes to construct three xylenes tanks, three benzene tanks, three toluene tanks, a

reformate tank, a sour water tank, and to modify four existing tanks. Vents from the xylenes tanks, benzene tanks, and toluene tanks will be routed to a closed system or a recovery device. Venting the xylenes tanks, benzene tanks, and toluene tanks to a closed system or a recovery device is determined as BACT for VOC. Because of the stored materials' vapor pressure and the sizes of the tanks, the reformate tank, sour water tank, and four existing tanks will be equipped with external floating roofs that meet requirements of 40 CFR 60 Subpart Kb. External floating roofs that meet requirements of 40 CFR 60 subpart Kb are determined as BACT for VOC emissions.

The existing storage tanks are subject to one or more than one of the following regulations: LAC 33:III.2103, LAC 33:III.5109.A, NSPS Subpart K, Ka, Kb, QQQ, or 40 CFR 63 Subpart CC. Complying with 40 CFR 63 Subpart CC or 40 CFR 60 Subpart Kb, which are the most stringent standards, was determined as BACT for VOC emissions from existing storage tanks, except a small wastewater tank which will comply with 40 CFR 60 Subpart QQQ as BACT. Details of BACT for storage tanks are listed in Table IV.

BACT analysis for H_2S emissions from the proposed sulfur recovery unit (SRU)

The proposed SRU will recover elemental sulfur from H_2S-containing streams at the refinery. Most H_2S in the SRU tail gas will be oxidized to SO_2. The SRU is itself a control device, as it functions to remove H_2S that historically would have been burned in the refinery fuel gas system. Valero proposed an SRU followed by a thermal oxidizer that meets the 40 CFR 60 Subpart J standard of 250 ppmv SO_2 in the flue gas as BACT. This is determined as BACT.

BACT analysis for PM/PM_{10} emissions from proposed haul roads

The only option to control PM/PM_{10} emissions from haul roads is to pave the roads as much as practical and suppressing the dust from becoming airborne at the unpaved area. Valero proposed to pave the road as much as practical and suppress the dust from becoming airborne by wetting unpaved roads as necessary. These are determined as BACT for PM/PM_{10} emissions from the proposed haul roads.

BACT analysis for VOC emissions from wastewater collection and conveyance equipment

Valero proposes to control VOC emissions from wastewater collection and conveyance equipment at the ARU as required by 40 CFR 63 Subparts F and G and at other units affected by the ULSD and the Refinery Expansion Project as required by LA Refinery MACT. These are the most stringent option to control VOC. Controlling VOC emissions from wastewater collection and conveyance equipment at the ARU as required by 40 CFR 63 Subparts F and G and at other unit of the ULSD and the Refinery Expansion Project as required by LA Refinery MACT are determined as BACT.

BACT analysis for emissions from the proposed Thermal Oxidizer No. 3

Valero proposed to construct the Thermal Oxidizer No. 3 to control H_2S in the tail gas of the Sulfur Recovery Unit (SRU) No. 4. The thermal oxidizer is the most efficient method to control H_2S emissions. Therefore, the thermal oxidizer is determined as BACT for H_2S emissions from the SRU. NO_X, CO, and VOC emissions are generated as products of combustion from the thermal oxidizer. The thermal oxidizer is also the most efficient method to control CO and VOC emissions. Adding a control device on top of another control device is not practical. Proper designs and operations, good combustion practices, and gaseous fuels are determined as BACT for NO_X, CO, VOC, and H_2S emissions.

The SRU and the thermal oxidizer are subject to 40 CFR 60 Subpart J which requires SO_2 emissions from the thermal oxidizer to be equal or less than 250 ppmdv. Valero proposed to use proper designs and operations, good combustion practices, and gaseous fuels to maintain SO_2 emissions from the SRU and the thermal oxidizer at or below the NSPS Subpart J standard of 250 ppmdv to be BACT for SO_2 and PM/PM_{10} emissions. Utilizing proper designs and operations, good combustion practices, and gaseous fuels to maintain SO_2 emissions from the SRU and the thermal oxidizer at or below the NSPS Subpart J standard of 250 ppmdv is determined as BACT for SO_2 and PM/PM_{10} emissions.

BACT analysis for emissions from the proposed MVR Thermal Oxidizer No. 2

To control VOC emissions from the additional throughput at the loading area, a second thermal oxidizer will be built. The thermal oxidizer is the most efficient method to control VOC emissions. Therefore, the thermal oxidizer is determined as BACT for VOC emissions from the affected loading area and the thermal oxidizer. PM/PM_{10}, NO_X and CO are also emitted from the MVR thermal oxidizer as products of combustion. The thermal oxidizer is also the most efficient method to control CO emissions. Constructing a control device on top of another control device is not practical. Therefore, proper designs and operations, good combustion practices, and gaseous fuels are determined as BACT for PM/PM_{10}, NO_X and CO emissions.

The most effective way to control SO_2 emissions from the MVR thermal oxidizer is preventing the formation of SO_2 using low sulfur fuels. Valero proposed to use pipeline quality natural gas and/or NSPS Subpart J refinery fuel gases as fuels at the MVR thermal oxidizer. This is determined as BACT.

BACT analysis for emissions from the proposed Flare No. 4

Flare No. 4 will be installed to destroy VOC emissions from various process vents. With proper designs and operations and good combustion practices as required by 40 CFR 63

Subpart A, the VOC destruction efficiency of Flare No. 4 can be higher than 98%. During the combustion process at the flare, PM/PM_{10}, SO_2, NO_X, and CO will be formed and emitted. The most efficient method to control PM/PM_{10}, NO_X, CO, and H_2S emissions from the flare is proper designs and operations and good combustion practices as required by 40 CFR 63 Subpart A. These are determined as BACT for PM/PM_{10}, NO_X, CO, VOC, and H_2S. The most effective way to control SO_2 emissions from the Flare No. 4 is to prevent the formation of SO_2 using low sulfur fuels. Valero proposed to use pipeline quality natural gas or NSPS Subpart J refinery fuel gases as fuels at the flare tip. This is determined as BACT.

BACT determination for existing equipment

Permit PSD-LA-619(M2) also includes equipment which was subject to PSD review for previous projects. The BACT analysis for this equipment was documented in PSD-LA-619 and is detailed in Table III of this permit.

BACT determination for Miscellaneous Equipment

A small quantity of VOC will also be emitted from two Vent Gas Wash Towers and two Coker Steam Vents. Installing add-on controls to these emission points is not practical. No additional controls are determined as BACT for VOC.

B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for those pollutant emissions, which increase significantly from a proposed major modification. PM_{10}, SO_2, NO_2, and CO are the pollutants of concern in this case.

Screening dispersion modeling indicates that concentration of PM_{10} (24-hour and annual average), SO_2 (3-hour, 24-hour, and annual average), and NO_2 (annual average) are above the modeling significance impact levels. Increment analysis and refined NAAQS modeling are required. The SO_2 (24-hour average) concentration is above the preconstruction monitoring exemption level of 13 $\mu g/m^3$. Preconstruction monitoring is required.

Valero used the monitoring data from the nearby LDEQ monitoring station in Hahnville, Louisiana, to fulfill the preconstruction SO_2 monitoring requirement. The station is approximately one (1) mile from the proposed site, and its data are representative of the ambient air in the local area. The 2004 monitoring data indicate that the SO_2 concentration is 10 $\mu g/m^3$ (annual average), 46 $\mu g/m^3$ (24-hour average), and 147 $\mu g/m^3$ (3-hour average). The modeled SO_2 concentration from the NAAQS Sources and the proposed facility at the monitor receptor are above the monitored values; therefore, no background values are added to the NAAQS modeling results.

Screening dispersion modeling indicates that CO emissions from the proposed project are below the modeling significance impact levels and preconstruction monitoring exemption

level. Refined modeling, incremental analysis, and preconstruction monitoring are not required for CO.

VOC emission rate increases from the project are more than 100 tons/yr. An ambient impact analysis, preconstruction, and post construction monitoring are required. Data from the nearby Hahnville Monitoring Station were used to fulfill this requirement. The data indicate that the air quality in the area complies with the national ambient air quality standards (NAAQS). Air quality will also be monitored for one year after plant startup using the Hahnville Monitoring Station.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

The refined modeling indicated that PM_{10}, SO_2, and NO_X emissions from St. Charles Refinery will not contribute to or cause any NAAQS exceedances. The NAAQS analysis is shown in Table II.

D. PSD INCREMENT ANALYSIS

Increment analysis showed that PM_{10}, SO_2, and NO_X allowable increments in the area are preserved. The incremental analysis is detailed in Table II.

E. SOURCE RELATED GROWTH IMPACTS

Secondary growth effects include permanent employment and approximately 2000 temporary construction related jobs during the three years of construction.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on soils, vegetation and visibility.

G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is more than 100 miles from the site, precluding any significant impact.

H. TOXIC IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

The Louisiana Department of Environmental Quality, Office of Environmental Services, has made a preliminary determination to approve the PSD permit modification for Valero

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2), AUGUST 8, 2006

Refining – New Orleans, LLC's St. Charles Refinery, New Sarpy, St. Charles Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2)

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated August 8, 2006 and subject to the emission limitations listed in Table V and BACT determination listed in Tables III and IV. Specifications submitted are contained in the application and Emissions Inventory Questionnaire dated December 21, 2005, as well as additional information dated January 20, February 15, May 31, June 2, and August 4, 2006.

2. To demonstrate compliance with the limitations of this permit, permittee shall conduct emissions monitoring and perform compliance/emissions tests as listed in Table VI using methods specified by the cited regulations and 40 CFR 60, Appendix A, Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources for NO_X emissions, Method 5 - Determination of Particulate Emissions from Stationary Sources for PM_{10} emissions, and Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources for CO emissions. The tests shall be conducted according to the schedule listed in Louisiana Air Emission Permit General Condition VIII or within 180 day from the date of this permit for unmodified existing equipment.

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

I. This permit is issued on the basis of the emissions reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.

II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.

III. The Emission Rates for Criteria Pollutants, Emission Rates for TAP/HAP & Other Pollutants, and Specific Requirements sections or, where included, Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Requirements or, where included, Tables 2 and 3 of the permit. The synopsis is based on the application and Emission Inventory Questionnaire dated December 21, 2005, as well as additional information dated January 20, February 15, May 31, June 2, and August 4, 2006.

IV. This permit shall become invalid, for the sources not constructed, if:

A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;

B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.

The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.

This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.

V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Air Permits Division.

VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Air Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.

VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, 4, and 5 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office of Environmental Assessment, Air Quality Assessment Division.

VIII. The emission testing described in paragraph VII above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Air Quality Assessment Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Air Quality Assessment Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.

IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Surveillance Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.

X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.

XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Surveillance Division with a written report as specified below.

A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.

B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.

C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs A or B above. The schedule for submittal of quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:

1. Report by June 30 to cover January through March
2. Report by September 30 to cover April through June
3. Report by December 31 to cover July through September
4. Report by March 31 to cover October through December

D. Each report submitted in accordance with this condition shall contain the following information:

1. Description of noncomplying emission(s);
2. Cause of noncompliance;
3. Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and
5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.

E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.

XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:

A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;

B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;

C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and

D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.

XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.

XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude prosecution of all violations found.

XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919 as well as notification requirements specified under LAC 33:III.927.

XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services, Air Permits Division, within ninety (90) days after the event, to amend this permit.

XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Air Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized discharge, these very small releases must:

1. Generally be less than 5 TPY
2. Be less than the minimum emission rate (MER)
3. Be scheduled daily, weekly, monthly, etc., or
4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

XVIII. Provisions of this permit may be appealed in writing pursuant to La. R.S. 30:2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing, unless the secretary or the assistant secretary elects to suspend other provisions as well. Construction cannot proceed except as specifically approved by the secretary or assistant secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal Services Division
La. Dept. of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302

XIX. Certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part 70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M2)

TABLE I: BACT COST SUMMARY

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost ($/yr)	Cost Effectiveness ($/ton)	Incr. Cost Effectiveness ($/ton)	Notes
2005-1	ULNB + SCR	Yes	1, 2, 3	95.5	661.45	2479171	3748	20905	Rejected
	SCR	Yes	1, 2, 3	90.0	623.42	2814370	4514	35127	Rejected
	ULNB	Yes		78.5	543.94	22617	42	42	Selected
2005-2	ULNB + SCR	Yes	1, 2, 3	95.5	386.43	1592873	4122	22998	Rejected
	SCR	Yes	1, 2, 3	90.0	364.21	1792078	4920	38294	Rejected
	ULNB	Yes		78.5	317.78	14029	44	44	Selected
2005-3	ULNB + SCR	Yes	1, 2, 3	95.5	288.26	1255982	4357	24317	Rejected
	SCR	Yes	1, 2, 3	90.0	271.69	1406319	5176	40294	Rejected
	ULNB	Yes		78.5	237.05	10699	45	45	Selected
2005-4	ULNB + SCR	Yes	1, 2, 3	93.0	10.78	167406	15529	42456	Rejected
	SCR	Yes	1, 2, 3	90.0	10.43	174729	16745	48618	Rejected
	ULNB	Yes		59.2	6.86	1115	162	162	Selected
2005-5	ULNB + SCR	Yes	1, 2, 3	93.0	33.54	391801	11682	31907	Rejected
	SCR	Yes	1, 2, 3	90.0	32.46	411733	12683	36791	Rejected
	ULNB	Yes		59.2	21.35	2998	140	140	Selected
2005-6	ULNB + SCR	Yes	1, 2, 3	93.0	30.74	366649	11926	32583	Rejected
	SCR	Yes	1, 2, 3	90.0	29.76	385086	12940	37548	Rejected
	ULNB	Yes		59.2	19.57	2696	138	138	Selected
2005-7	ULNB + SCR	Yes	1, 2, 3	93.0	37.13	423529	11406	31149	Rejected

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	SCR	Yes	1, 2, 3	90.0	35.94	445371	12391	35941	Rejected
	ULNB	Yes		59.2	23.64	3296	139	139	Selected
2005-8	ULNB + SCR	Yes	1, 2, 3	93.0	33.14	388234	11715	31995	Rejected
	SCR	Yes	1, 2, 3	90.0	32.08	407953	12718	36890	Rejected
	ULNB	Yes		59.2	21.10	2998	142	142	Selected
2005-9	ULNB + SCR	Yes	1, 2, 3	93.0	11.18	171947	15380	42058	Rejected
	SCR	Yes	1, 2, 3	90.0	10.82	179505	16588	48171	Rejected
	ULNB	Yes		59.2	7.12	1115	157	157	Selected
2005-10	ULNB + SCR	Yes	1, 2, 3	95.5	159.71	778047	4872	27195	Rejected
	SCR	Yes	1, 2, 3	90.0	150.53	869839	5779	44992	Rejected
	ULNB	Yes		78.5	131.34	6426	49	49	Selected
2005-11	ULNB + SCR	Yes	1, 2, 3	95.5	204.12	944765	4628	25831	Rejected
	SCR	Yes	1, 2, 3	90.0	192.39	1060633	5513	42916	Rejected
	ULNB	Yes		78.5	167.86	8057	48	48	Selected
2005-12	ULNB + SCR	Yes	1, 2, 3	93.0	35.14	405982	11554	31568	Rejected
	SCR	Yes	1, 2, 3	90.0	34.01	426764	12548	36410	Rejected
	ULNB	Yes		59.2	22.37	2998	134	134	Selected
2005-13	ULNB + SCR	Yes	1, 2, 3	95.5	132.45	671704	5072	28322	Rejected
	SCR	Yes	1, 2, 3	90.0	124.83	748598	5997	46706	Rejected

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	ULNB	Yes		78.5	108.92	5313	49	49	Selected
2005-14	ULNB + SCR	Yes	1, 2, 3	95.5	101.28	545104	5382	30063	Rejected
	SCR	Yes	1, 2, 3	90.0	95.46	604822	6336	49357	Rejected
	ULNB	Yes		78.5	83.29	4174	50	50	Selected
2005-15	ULNB + SCR	Yes	1, 2, 3	95.5	248.53	1105449	4448	24825	Rejected
	SCR	Yes	1, 2, 3	90.0	234.24	1245216	5316	41384	Rejected
	ULNB	Yes		78.5	204.38	9388	46	46	Selected
2005-16	ULNB + SCR	Yes	1, 2, 3	95.5	144.13	717715	4980	27800	Rejected
	SCR	Yes	1, 2, 3	90.0	135.84	801007	5897	45913	Rejected
	ULNB	Yes		78.5	118.53	5873	50	50	Selected
2005-17	ULNB + SCR	Yes	1, 2, 3	95.5	82.58	465655	5639	31495	Rejected
	SCR	Yes	1, 2, 3	90.0	77.84	514967	6616	51535	Rejected
	ULNB	Yes		78.5	67.91	3591	53	53	Selected
2005-18	ULNB + SCR	Yes	1, 2, 3	95.5	119.98	621806	5183	28936	Rejected
	SCR	Yes	1, 2, 3	90.0	113.08	691852	6118	47642	Rejected
	ULNB	Yes		78.5	98.67	5031	51	51	Selected
2005-19	ULNB + SCR	Yes	1, 2, 3	95.4	445.91	1819323	4080	22080	Rejected
	SCR	Yes	1, 2, 3	90.0	420.86	2064108	4905	36177	Rejected
	ULNB	Yes		78.5	364.25	16282	45	45	Selected

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2005-20	ULNB + SCR	Yes	1, 2, 3	95.4	445.91	1819323	4080	22080	Rejected
	SCR	Yes	1, 2, 3	90.0	420.86	2064108	4905	36177	Rejected
	ULNB	Yes		78.5	364.25	16282	45	45	Selected
2005-21	ULNB + SCR	Yes	1, 2, 3	95.5	445.64	1773732	3980	22202	Rejected
	SCR	Yes	1, 2, 3	90.0	420.02	2018267	4805	37393	Rejected
	ULNB	Yes		78.5	366.47	16034	44	44	Selected
2005-22	ULNB + SCR	Yes	1, 2, 3	95.5	135.56	684043	5046	28171	Rejected
	SCR	Yes	1, 2, 3	90.0	127.77	762645	5969	46478	Rejected
	ULNB	Yes		78.5	111.48	5594	50	50	Selected
2005-23	ULNB + SCR	Yes	1, 2, 3	93.0	33.14	388234	11715	31995	Rejected
	SCR	Yes	1, 2, 3	90.0	32.08	407953	12718	36890	Rejected
	ULNB	Yes		59.2	21.10	2998	142	142	Selected
2005-24	ULNB + SCR	Yes	1, 2, 3	93.0	11.18	171947	15380	42058	Rejected
	SCR	Yes	1, 2, 3	90.0	10.82	179505	16588	48171	Rejected
	ULNB	Yes		59.2	7.12	1115	157	157	Selected
2005-25	ULNB + SCR	Yes	1, 2, 3	95.5	159.71	778047	4872	27195	Rejected
	SCR	Yes	1, 2, 3	90.0	150.53	869839	5779	44992	Rejected
	ULNB	Yes		78.5	131.34	6426	49	49	Selected
2005-26	ULNB + SCR	Yes	1, 2, 3	95.5	204.12	944765	4628	25831	Rejected

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	SCR	Yes	1, 2, 3	90.0	192.39	1060633	5513	42916	Rejected
	ULNB	Yes		78.5	167.86	8057	48	48	Selected
2005-27	ULNB + SCR	Yes	1, 2, 3	93.0	35.14	405982	11554	31568	Rejected
	SCR	Yes	1, 2, 3	90.0	34.01	426764	12548	36410	Rejected
	ULNB	Yes		59.2	22.37	2998	134	134	Selected
2005-28	ULNB + SCR	Yes	1, 2, 3	95.5	132.45	671704	5072	28322	Rejected
	SCR	Yes	1, 2, 3	90.0	124.83	748598	5997	46706	Rejected
	ULNB	Yes		78.5	108.92	5313	49	49	Selected
2005-29	ULNB + SCR	Yes	1, 2, 3	95.5	101.28	545104	5382	30063	Rejected
	SCR	Yes	1, 2, 3	90.0	95.46	604822	6336	49357	Rejected
	ULNB	Yes		78.5	83.29	4174	50	50	Selected
2005-30	ULNB + SCR	Yes	1, 2, 3	95.5	248.53	1105449	4448	24825	Rejected
	SCR	Yes	1, 2, 3	90.0	234.24	1245216	5316	41384	Rejected
	ULNB	Yes		78.5	204.38	9388	46	46	Selected
2005-31	ULNB + SCR	Yes	1, 2, 3	95.5	144.13	717715	4980	27800	Rejected
	SCR	Yes	1, 2, 3	90.0	135.84	801007	5897	45913	Rejected
	ULNB	Yes		78.5	118.53	5873	50	50	Selected
2005-32	ULNB + SCR	Yes	1, 2, 3	95.5	82.58	465655	5639	31495	Rejected
	SCR	Yes	1, 2, 3	90.0	77.84	514967	6616	51535	Rejected

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TABLE I: BACT COST SUMMARY

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost ($/yr)	Cost Effectiveness ($/ton)	Incr. Cost Effectiveness ($/ton)	Notes
	ULNB	Yes		78.5	67.91	3591	53	53	Selected
2005-33	ULNB + SCR	Yes	1, 2, 3	95.5	459.66	1819323	3958	22080	Rejected
	SCR	Yes	1, 2, 3	90.0	433.23	2064108	4764	37078	Rejected
	ULNB	Yes		78.5	378.00	16282	43	43	Selected
2005-34	ULNB + SCR	Yes	1, 2, 3	95.5	459.66	1819323	3958	22080	Rejected
	SCR	Yes	1, 2, 3	90.0	433.23	2064108	4764	37078	Rejected
	ULNB	Yes		78.5	378.00	16282	43	43	Selected
2005-35	ULNB + SCR	Yes	1, 2, 3	93.0	9.98	158204	15849	43315	Rejected
	SCR	Yes	1, 2, 3	90.0	9.66	165055	17083	49581	Rejected
	ULNB	Yes		59.2	6.36	1115	175	175	Selected
2005-36	ULNB + SCR	Yes	1, 2, 3	93.0	3.99	81480	20407	55881	Rejected
	SCR	Yes	1, 2, 3	90.0	3.86	84622	21896	63668	Rejected
	ULNB	Yes		59.2	2.54	415	163	163	Selected
2005-37	ULNB + SCR	Yes	1, 2, 3	95.5	89.60	495817	5534	30906	Rejected
	SCR	Yes	1, 2, 3	90.0	84.44	549042	6502	50640	Rejected
	ULNB	Yes		78.5	73.68	3883	53	53	Selected
3-81	ULNB + SCR	Yes	1, 2, 3	95.5	147.75	726473	4917	33629	Rejected
	SCR	Yes	1, 2, 3	90.0	145.78	950817	6522	48543	Rejected
	ULNB	Yes		78.5	126.29	5031	40	40	Selected

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TABLE I: BACT COST SUMMARY

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost ($/yr)	Cost Effectiveness ($/ton)	Incr. Cost Effectiveness ($/ton)	Notes
94-43	ULNB + SCR	Yes	1, 2, 3	89.5	96.28	1230342	12779	28740	Rejected
	SCR	Yes	1, 2, 3	76.0	81.76	1248648	15273	44318	Rejected
	ULNB	Yes		50.0	53.79	9124	170	170	Selected
94-45	LNB + SCR	Yes	1, 2, 3	89.5	96.28	1230342	12779	28740	Rejected
	SCR	Yes	1, 2, 3	76.0	81.76	1248648	15273	44318	Rejected
	LNB	Yes		50.0	53.79	9124	170	170	Selected
2004-1	SCR	Yes	1, 2, 3	82.8	10.44	410073	39261	39261	Rejected
2004-2	SCR	Yes	1, 2, 3	82.9	2.90	161206	55563	55563	Rejected
2004-3	SCR	Yes	1, 2, 3	82.9	6.24	280445	44959	44959	Rejected
2004-4	SCR	Yes	1, 2, 3	82.8	10.44	410073	39261	39261	Rejected
2004-10	SCR	Yes	1, 2, 3	79.0	48.44	1363216	28141	28141	Rejected
2004-11	SCR	Yes	1, 2, 3	79.0	48.44	1363216	28141	28141	Rejected

Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety

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TABLE II: AIR QUALITY ANALYSIS SUMMARY ($\mu g/m^3$)

Pollutant	Averaging Period	Preliminary Screening	Significant Monitoring	Level of Significant Impact	At the Monitoring Station		Background	Maximum Modeled	Modeled + Background	NAAQS	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
					Monitored Values	Modeling Results						
PM_{10}	24-hour	22	10	5	37	28	9	22	31	150	16	30
	Annual	17		1	22	7	15	17	32	50	2	17
SO_2	3-hour	85		25	196	477	0	947	947	1300	368	512
	24-hour	28	13	5	58	186	0	362	362	365	88	91
	Annual	3.4		1	11	41	0	62	62	80	20	20
NO_2	Annual	2.8	14	1	24	42	0	71	71	100	22	25
CO	1-hour	694		2000				NR		40,000	NR	
	8-hour	175	575	500				NR		10,000	NR	
NAAQS = National Ambient Air Quality Standards NR = Not Required												

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TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM_{10}	SO_2	NO_X	CO	VOC	H2S	H2SO4
Proposed Heaters and Boilers	Proper design and operation, Good combustion practices, Use of gaseous fuels	Natural Gas or NSPS Subpart J refinery fuel gas	ULNB, <= 0.04 lbs/MM BTU for proposed heaters and boilers	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels		
Proposed Fluid Catalytic Cracking Unit	Wet Scrubber to maintain PM <= 2.0 lbs per ton of coke burned	Scrubber =>90% removal efficiency or SO2<50 ppmv (7 day rolling average)	<= 20 ppmdv (annual average)	Full Burn design <= 250 mg/Nm3	Good Combustion Practices (Full Burn)	Good Combustion Practices (Full Burn)	Scrubber =>90% SO2 removal efficiency or SO2<50 ppmv (7 day rolling average)
Xylenes Tanks Benzene Tanks Toluene Tanks					Route to a closed system or a recovery device		
Reformate Tank Sour Water Tank Four Existing Tanks					External Floating Roof		
Sulfur Recovery Unit No. 4						Thermal Oxidizer with SO2 <= 250 ppmdv (12 hour rolling average)	
Thermal Oxidizer 3 (2005-39)	Proper design and operation, Good combustion practices and gaseous fuels	<= 250 ppmvd (12 hour rolling average)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	
Proposed Haul Roads	Paving roads or wetting unpaved roads as necessary						
Sulfur Loading						Proper design and operation	

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TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	**PM/PM_{10}**	**SO_2**	**NO_X**	**CO**	**VOC**	**H2S**	**H2SO4**
Marine Vapor Recovery (MVR) Thermal Oxidizer No. 2	Gaseous Fuels	Natural Gas and NSPS Subpart J refinery fuel gas	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
Flare No. 4	Comply with 40 CFR 63 Subpart A	Natural Gas and NSPS Subpart J refinery fuel gas	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	
Wastewater Collection and Conveyance Equipment Process Drains					Comply with MACT (Refinery or HON)		
Fugitives					LA Refinery MACT		
ARU Fugitives					40 CFR 63 Subpart H		
Group 1 Process Vents					Route to the flare that meets requirements of 40 CFR 63 Subpart A	Route to the flare that meets requirements of 40 CFR 63 Subpart A	
Cooling Towers (3)	Drift Eliminators				VOC monitoring program		
Vent Gas Wash Towers Coker Steam Vents					No additional control		
Existing Equipment							

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TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM_{10}	SO_2	NO_X	CO	VOC	H2S	H2SO4
16-77 FCC Regenerator (MSCC)	Wet Scrubber to maintain PM <= 2.0 lbs per ton of coke burned	Wet Scrubber => 90% SO2 control efficiency or SO2<50 ppmv (7 day rolling average)	Full Burn <= 20 ppmdv (annual average)	Full Burn design <= 250 mg/Nm3	Good Combustion Practices (Full Burn)		
7-81 Heater F-72-703	Gaseous Fuels	Natural Gas or NSPS Subpart J refinery fuel gas	LNB 0.08 lbs/MM BTU	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
94-8 Marine Vapor Recovery (MVR) Thermal Oxidizer	Gaseous Fuels	Natural Gas or NSPS Subpart J refinery fuel gas	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
94-9 Petroleum Products Loading Docks					Thermal oxidizer for loading materials with VP > 1.5 psia		
98-9 Tank Truck/Rail Car Loading					No additional control		
15-77 Flare No. 1	Comply with 40 CFR 63 Subpart A	Natural Gas or NSPS Subpart J refinery fuel gas	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A		
12-81 Flare No. 2	Comply with 40 CFR 63 Subpart A	Natural Gas or NSPS Subpart J refinery fuel gas	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A		
2004-5 Flare No. 3	Comply with 40 CFR 63 Subpart A	Natural Gas or NSPS Subpart J refinery fuel gas	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	
4-81 Heater H-15-01A	Gaseous Fuels	Natural Gas or NSPS Subpart J refinery fuel gas	LNB 0.08 lbs/MM BTU	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		

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TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM_{10}	SO_2	NO_X	CO	VOC	H2S	H2SO4
5-81 Heater H-15-01B	Gaseous Fuels	Natural Gas and NSPS Subpart J refinery fuel gas	LNB 0.08 lbs/MM BTU	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
99-3 Thermal Oxidizer No. 1	Proper design and operation, Good combustion practices and gaseous fuels	<= 250 ppmvd (12 hour rolling average)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
99-4 Thermal Oxidizer No. 2	Proper design and operation, Good combustion practices and gaseous fuels	<= 250 ppmvd (12 hour rolling average)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
Crude Oil and Petroleum Product Tanks					40 CFR 63 Subpart CC or 40 CFR 60 Subpart Kb – Details in Table IV		
Sulfuric Acid Tanks and Loading							Fixed Roofs and Submerged Fill Pipes
Small Wastewater Tank (EQT246)					40 CFR 60 Subpart QQQ		
94-21 - Heater 94-29 - Heater 94-43 - Boiler 94-45 - Boiler	Clean Fuels	Natural Gas and NSPS Subpart J refinery fuel gas	Fuel choices, Operating techniques, and LNB	Good operating practices			
Coke Handling	Keep coke wet while storing and transporting						

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TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM_{10}	SO_2	NO_X	CO	VOC	H2S	H2SO4
Vent Gas Wash Towers					No additional control		
Wastewater Treatment Plant Wastewater System					Comply with 40 CFR 61 Subpart FF as applicable		

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TABLE IV: BACT SELECTION FOR STORAGE TANKS										
EQT No.	EIQ No.	Tank No.	Volume (barrels)	Roof	Material Stored	Applicable Regulations			Per 63.640(n)	BACT Shall comply with
						LAC 33:III.	40 CFR 60 Subpart	40 CFR 63 Subpart CC		
EQT006	11-89	37-1	37,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT008	12-89	55-1	55,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT018	16-89	55-8	55,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT019	18-81	625-1	540,000	EFR	Light Materials	2103	Ka	Group 1	5	40 CFR 63 Subpart CC
EQT020	18-89	150-13	150,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT022	19-81	625-2	625,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT023	19-89	150-14	150,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT026	20-81	625-3	625,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT027	20-89	150-15	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT040	21-89	150-16	150,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT041	22-81	425-1	425,000	IFR	Light Materials	2103	Ka	Group 2	6	40 CFR 63 Subpart CC
EQT042	23-81	425-2	425,000	IFR	Light Materials	2103	Ka	Group 1	5	40 CFR 63 Subpart CC
EQT043	24-81	425-3	425,000	FR	Heavy Materials		Ka	Group 2	7	40 CFR 63 Subpart CC
EQT044	25-81	425-4	425,000	FR	Heavy Materials		Ka	Group 2	7	40 CFR 63 Subpart CC
EQT045	26-81	625-5	625,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT046	27-81	625-6	625,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT047	28-81	425-5	425,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT048	29-81	425-6	425,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT049	30-81	425-7	425,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT050	31-81	425-8	425,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT051	32-81	425-9	425,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT061	6-89	84	25,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC

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TABLE IV: BACT SELECTION FOR STORAGE TANKS										
EQT No.	EIQ No.	Tank No.	Volume (barrels)	Roof	Material Stored	Applicable Regulations			Per 63.640(n)	BACT Shall comply with
						LAC 33:III.	40 CFR 60 Subpart	40 CFR 63 Subpart CC		
EQT066	94-10	45-1	45,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT067	94-11	45-2	45,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT068	94-12	150-24	150,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT069	94-13	150-25	150,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT070	94-14	25-14	25,000	IFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT071	94-15	25-15	25,000	IFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT072	94-16	150-30	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT073	94-17	150-31	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT074	94-18	118-1	118,000	EFR	Light Materials	2103	Kb, QQQ	Group 1	1	40 CFR 60 Subpart Kb
EQT085	94-50	150-26	150,000		Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT086	94-51	150-27	150,000		Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT087	94-52	150-22	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT088	94-53	150-23	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT089	94-57	T-04-24	400	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT090	94-58	T-04-23	400	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT091	94-59	67-1	67,000	EFR	Light Materials	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT095	96-2	H2SO4	17	FR	H2SO4					FR
EQT097	96-4	T-1403	1933	FR	H2SO4					FR
EQT098	96-5	T-69	2100	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT099	96-6	04-32	62,900	EFR	Sour Water	2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT102	98-112	T-04-27	189	FR	Heavy Materials	2103	QQQ	Group 2		40 CFR 60 Subpart QQQ
EQT103	98-113	V-28-4	734	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC

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TABLE IV: BACT SELECTION FOR STORAGE TANKS										
EQT No.	EIQ No.	Tank No.	Volume (barrels)	Roof	Material Stored	Applicable Regulations			Per 63.640(n)	BACT Shall comply with
						LAC 33:III.	40 CFR 60 Subpart	40 CFR 63 Subpart CC		
EQT104	98-114	H2SO4		FR	H2SO4					FR
EQT108	98-14	5-23	5000	FR	Fresh Caustic					Insignificant Activity
EQT120	98-26	10-23	10,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT121	98-27	10-24	10,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT132	98-38	40	36,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT133	98-39	40B	90	FR	Heavy Materials					FR
EQT134	98-40	41	37,500	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT135	98-41	50-1	50,000	FR	Fresh H2SO4					FR
EQT136	98-42	50-2	50,000	FR	Spent H2SO4			Group 2		40 CFR 63 Subpart CC
EQT137	98-43	50-3	50,000	FR	H2SO4			Group 2		40 CFR 63 Subpart CC
EQT138	98-44	51	10,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT139	98-45	52	10,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT142	98-48	55-5	55,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT143	98-49	55-6	55,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT144	98-50	55-7	55,000	FR	Heavy Materials			Group 2	7	40 CFR 63 Subpart CC
EQT145	98-51	56	10,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT146	98-52	57	11,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT147	98-53	58	11,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT148	98-54	75	15,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT149	98-55	76	16,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT150	98-56	77	15,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT151	98-57	78	16,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC

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TABLE IV: BACT SELECTION FOR STORAGE TANKS										
EQT No.	EIQ No.	Tank No.	Volume (barrels)	Roof	Material Stored	Applicable Regulations			Per 63.640(n)	BACT Shall comply with
						LAC 33:III.	40 CFR 60 Subpart	40 CFR 63 Subpart CC		
EQT152	98-58	79	16,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT154	98-60	80-1	80,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT155	98-61	80-3	80,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT156	98-62	80-4	80,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT157	98-63	81	25,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT158	98-64	82	25,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT159	98-65	83	25,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT160	98-66	130-1	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT161	98-67	130-2	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT162	98-68	130-3	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT163	98-69	130-4	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT164	98-70	130-5	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT165	98-71	130-6	130,000	EFR	Light Materials	2103		Group 1	63.646(a)	40 CFR 63 Subpart G
EQT166	98-72	130-7	130,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT167	98-73	130-8	130,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT168	98-74	130-9	130,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT169	98-75	150-1	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT170	98-76	150-2	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT171	98-77	150-3	150,000	FR	Heavy Materials			Group 2		40 CFR 63 Subpart CC
EQT172	98-78	150-4	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT173	98-79	150-5	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT174	98-80	150-6	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC

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TABLE IV: BACT SELECTION FOR STORAGE TANKS										
EQT No.	EIQ No.	Tank No.	Volume (barrels)	Roof	Material Stored	Applicable Regulations			Per 63.640(n)	BACT Shall comply with
						LAC 33:III.	40 CFR 60 Subpart	40 CFR 63 Subpart CC		
EQT175	98-81	150-7	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT176	98-82	150-8	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT178	98-84	150-17	150,000	FR	Heavy Materials		Ka	Group 2	7	40 CFR 63 Subpart CC
EQT179	98-85	150-18	150,000	EFR	Light Materials	2103	Ka	Group 1	63.646(a)	40 CFR 63 Subpart G
EQT180	98-86	150-19	150,000	EFR	Light Materials	2103	Ka	Group 1	63.646(a)	40 CFR 63 Subpart G
EQT181	98-87	150-20	150,000	FR	Heavy Materials		Ka	Group 2	7	40 CFR 63 Subpart CC
EQT182	98-88	150-21	150,000	FR	Heavy Materials		K	Group 2	7	40 CFR 63 Subpart CC
EQT183	98-89	175-1	175,000	FR	Heavy Materials		Ka	Group 2	7	40 CFR 63 Subpart CC
EQT186	98-91	325-1	325,000	EFR	Light Materials	2103	Ka	Group 1	63.646(a)	40 CFR 63 Subpart G
EQT187	98-92	325-2	325,000	EFR	Light Materials	2103	Ka	Group 1	63.646(a)	40 CFR 63 Subpart G
EQT188	98-93	325-3	325,000	EFR	Light Materials	2103	Ka	Group 1	63.646(a)	40 CFR 63 Subpart G
EQT189	98-94	325-4	325,000	EFR	Light Materials		Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT198	99-6	V-10-13	185	FR		2103				LAC 33:III.2103
EQT199	99-7	V-10-14	185	FR		2103				LAC 33:III.2103
EQT245	2005-53	Reformate	150,000	FR		2103	Kb	Group 1	1	40 CFR 60 Subpart Kb
EQT246	2005-54	Sour Water	7200	EFR		2103	Kb	Group 1	1	40 CFR 60 Subpart Kb

FR Fixed Roof
EFR External Floating Roof
IFR Internal Floating Roof

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
ARE004	17-74 - Process Drains		lbs/hr tons/yr					31.65 138.66	0.55 2.40	
EQT004	10-81 - Vacuum No 2 Heater F-52-1A	430	lbs/hr	3.21	11.02	17.21	35.43	2.32		
EQT005	11-81 - Vacuum No 2 Heater F-52-1B	430	lbs/hr	3.21	11.02	17.20	35.43	2.32		
EQT007	12-81 - Flare No 2	144	lbs/hr	0.33	50.00	25.90	56.10	9.50	1.00	
EQT012	14-81 - Coker No 1 Heater No 1 F-53-1A	243	lbs/hr	1.81	6.22	9.72	20.01	1.31		
EQT013	15-77 - Flare No 1	144	lbs/hr	0.33	50.00	25.90	56.10	9.50	1.00	
EQT014	15-81 - Coker No 1 Heater No 2 F-53-1B	243	lbs/hr	1.81	6.22	9.72	20.01	1.31		
EQT016	16-77 - FCCU No 2 Regenerator	130,000 bbl/day	lbs/hr tons/yr	74.60 276.00	79.60 295.00	385.00 1427.0	696.80 95.00	15.50 13.60	0.90 1.68	3.68 11.52
EQT017	16-81 - Coker No 1 Heater No 3 F-53-1C	243	lbs/hr	1.81	6.22	9.72	20.01	1.31		
EQT021	19-74 - West Plant Separator-Culvert	2500 gpm	lbs/hr tons/yr					0.29 1.10		
EQT025	20-74 - West Plant Separator-API	2500 gpm	lbs/hr tons/yr					0.29 1.10		
EQT028	2004-1 - Hydro Treater Heater No 1 H-60-1	86	lbs/hr	0.64	2.21	3.46	7.12	0.47		
EQT029	2004-10 - Boiler 401-E	525	lbs/hr tons/yr				43.24 126.25			
EQT030	2004-11 - Boiler 401-F	525	lbs/hr tons/yr	3.91 11.42	13.45 39.26	21.00 61.32	43.24 126.25	2.83 8.27		
EQT031	2004-2 - Hydro Treater Heater No 2 H-60-2	24	lbs/hr	0.18	0.61	0.96	1.98	0.13		
EQT032	2004-3 - Hydro Treater Heater No 3 H-60-3	52	lbs/hr	0.38	1.32	2.06	4.25	0.28		
EQT033	2004-4 - Hydro Treater Heater No 4 H-60-4	86	lbs/hr	0.64	2.21	3.46	7.12	0.47		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT034	2004-5 - Flare No 3	120	lbs/hr	0.33	50.00	25.90	56.10	9.50	1.00	
EQT035	2004-6 - Cooling Tower	42,000 gpm	lbs/hr tons/yr	0.09 0.30				1.84 6.44	< 0.01 < 0.01	
EQT036	2004-7 – SMR 1 Heater No 1	885	lbs/hr tons/yr	6.59 19.25	22.67 66.18	35.40 103.37	72.88 212.82	4.77 13.93		
EQT037	2004-8 - SMR 1 Heater No 2	885	lbs/hr tons/yr	6.59 19.25	22.67 66.18	35.40 103.37	72.88 212.82	4.77 13.93		
EQT052	36-81 - Coker No 1 Heater No 4 F-53-1D	243	lbs/hr	1.81	6.22	9.72	20.01	1.31		
EQT054	4-81 - H-15-01A	70	lbs/hr	1.11	2.09	6.61	4.87	0.23		
EQT055	5-76 - Cooling Tower 402	42,000 gpm		0.12 0.41				2.52 8.83	< 0.01 < 0.01	
EQT056	5-81 - H-15-01B	70	lbs/hr	1.11	2.09	6.61	4.87	0.23		
EQT057	5-83 - Coke Handling	12207 tons/day	lbs/hr tons/yr	0.56 2.47						
EQT060	6-81 - HDS No 1 Heater (F-15-02)	135	lbs/hr tons/yr	1.01 2.94	3.46 10.10	5.40 15.77	11.12 32.46	0.73 2.13		
EQT063	7-81 - Heater F-72-703	633.6	lbs/hr tons/yr	5.90 17.23	20.28 59.23	50.04 183.00	25.32 92.50	0.89 3.30		
EQT076	94-21 - F-33-05	48	lbs/hr tons/yr	0.56 2.10	1.08 3.90	3.36 12.30	2.40 8.80	0.11 0.40		
EQT077	94-28 – CPF Heater H-39-03	68	lbs/hr tons/yr	0.50 1.47	1.73 5.05	3.31 9.66	5.56 16.23	0.36 1.06		
EQT078	94-29 - H-39-01	75	lbs/hr tons/yr	0.56 1.63	1.92 5.61	3.68 10.74	6.18 18.04	0.40 1.18		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT079	94-30 - CPF Heater H-39-02	90	lbs/hr tons/yr	0.67 1.96	2.30 6.73	4.41 12.88	7.41 21.64	0.49 1.42		
EQT080	94-43 - Boiler B-401C	461	lbs/hr tons/yr	3.43 10.02	11.79 34.44	36.84 107.57	37.92 110.74	2.48 7.25		
EQT081	94-45 - Boiler B-401D	461	lbs/hr tons/yr	3.43 10.02	11.79 34.44	36.84 107.57	37.92 110.74	2.48 7.25		
EQT089	94-57 - Tank T-04-24	400 bbl	lbs/hr tons/yr					< 0.01 0.01		
EQT090	94-58 - Tank T-04-23	400 bbl	lbs/hr tons/yr					< 0.01 0.01		
EQT092	94-9 - Petroleum Product Loading Docks	352.8 MM g/d	lbs/hr tons/yr					687.00 195.30		
EQT095	96-2 - Sulfuric Acid Tank	17 bbl	lbs/hr tons/yr							< 0.01 0.01
EQT097	96-4 - Sulfuric Acid Tank T-1403	1933 bbl	lbs/hr tons/yr							< 0.01 0.01
EQT100	96-7 - Wastewater Treatment Plant	15896 lb/day	lbs/hr tons/yr					13.30 58.20	0.77 3.40	
EQT101	98-100 - Wastewater System		lbs/hr tons/yr					0.40 1.80		
EQT104	98-114 - Sulfuric Acid Storage		lbs/hr tons/yr		1.10 5.00			1.10 5.00		
EQT105	98-115 - Sulfuric Acid Loading		lbs/hr tons/yr		1.10 5.00			1.10 5.00		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT135	98-41 - Tank 50-1	50,000 bbl	lbs/hr tons/yr							< 0.01 0.01
EQT136	98-42 - Tank 50-2	50,000 bbl	lbs/hr tons/yr							< 0.01 0.01
EQT137	98-43 - Tank 50-3	50,000 bbl	lbs/hr tons/yr							< 0.01 0.01
EQT184	98-9 - Tank Truck/Rail Car Loading	3840 gal/hr	lbs/hr tons/yr					261.00 6.10	0.01 0.04	
EQT195	99-3 - Thermal Oxidizer No 1	60	lbs/hr	1.40	114.00	9.40	6.10	0.30	0.50	
EQT196	99-4 - Thermal Oxidizer No 2	60	lbs/hr	1.40	114.00	9.40	6.10	0.30	0.50	
EQT200	99-8 - CCR Vent Gas Wash Tower	42000 bbl/day	lbs/hr tons/yr					0.02 0.07		
EQT203	2005-1 - Crude 2 Heater B	1274	lbs/hr tons/yr	9.49 27.71	32.61 95.23	50.94 148.74	104.88 306.24	6.87 20.05		
EQT204	2005-2 - VAC 2 Charge Heater	744	lbs/hr tons/yr	5.54 16.19	19.05 55.64	29.76 86.90	61.27 178.91	4.01 11.71		
EQT205	2005-3 - COKER 2 Charge Heater	555	lbs/hr tons/yr	4.14 12.08	14.21 41.50	22.20 64.82	45.71 133.46	2.99 8.74		
EQT206	2005-4 - NHT B-Train Reactor Heater	41	lbs/hr tons/yr	0.30 0.88	1.04 3.03	1.62 4.73	3.34 9.74	0.22 0.64		
EQT207	2005-5 - NHT B-Train Stripper Reboiler	95	lbs/hr tons/yr	0.94 2.74	3.23 9.42	5.04 14.72	10.38 30.30	0.68 1.98		
EQT208	2005-6 - NHT B-Train Naphtha Splitter Reboiler	95	lbs/hr tons/yr	0.86 2.51	2.96 8.64	4.62 13.49	9.51 27.77	0.62 1.62		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT209	2005-7 - NHT Naphtha Rerun Column Reboiler	95	lbs/hr	1.04	3.57	5.58	11.49	0.75		
			tons/yr	3.04	10.43	16.29	33.55	2.20		
EQT210	2005-8 - HCU 1st Stage Charge Heater	95	lbs/hr	0.93	3.19	4.98	10.25	0.67		
EQT211	2005-9 - HCU 2nd Stage Charge Heater	42	lbs/hr	0.31	1.08	1.68	3.46	0.23		
EQT212	2005-10 - HCU 1 Absorber/Dec 2 Reboiler	308	lbs/hr	2.29	7.88	12.30	25.32	1.66		
EQT213	2005-11 - HCU 1 Naphtha Splitter Reboiler	393	lbs/hr	2.93	10.06	15.72	32.36	2.12		
EQT214	2005-12 - HCU 1 Recycle Splitter Reboiler	95	lbs/hr	0.98	3.38	5.28	10.87	0.71		
EQT215	2005-13 - LEU 2 Dec 4 Reboiler	255	lbs/hr	1.90	6.53	10.20	21.00	1.38		
EQT216	2005-14 - CCR 2 Charge Heater	195	lbs/hr	1.45	4.99	7.80	16.06	1.05		
			tons/yr	4.24	14.58	22.78	46.89	3.07		
EQT217	2005-15 - CCR 2 Inter Heater 1	479	lbs/hr	3.57	12.25	19.14	39.41	2.58		
			tons/yr	10.41	35.78	55.89	115.07	7.53		
EQT218	2005-16 - CCR 2 Inter Heater 2	278	lbs/hr	2.07	7.11	11.10	22.85	1.50		
			tons/yr	6.04	20.75	32.41	66.73	4.37		
EQT219	2005-17 - CCR 2 Inter Heater 3	159	lbs/hr	1.18	4.07	6.36	13.09	0.86		
			tons/yr	3.46	11.89	18.57	38.23	2.50		
EQT220	2005-18 - ARU Xylene Column Reboiler	231	lbs/hr	1.72	5.92	9.24	19.02	1.25		
			tons/yr	5.03	17.27	26.98	55.55	3.64		
EQT221	2005-19 - SMR 2 Heater 1	885	lbs/hr	6.59	22.67	35.40	72.88	4.77		
			tons/yr	19.25	66.18	103.37	212.82	13.93		
EQT222	2005-20 - SMR 2 Heater 2	885	lbs/hr	6.59	22.67	35.40	72.88	4.77		
			tons/yr	19.25	66.18	103.37	212.82	13.93		
EQT223	2005-21 - Boiler 401-G	858	lbs/hr	6.39	21.97	34.32	70.66	4.63		
			tons/yr	18.67	64.16	100.21	206.32	13.51		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT224	2005-22 - GDU 2 Heater	261	lbs/hr	1.94	6.68	10.44	21.49	1.41		
			tons/yr	5.68	19.52	30.48	62.76	4.11		
EQT225	2005-23 - HCU 2 1st Stage Charge Heater	95	lbs/hr	0.93	3.19	4.98	10.25	0.67		
EQT226	2005-24 - HCU 2 2nd Stage Charge Heater	42	lbs/hr	0.31	1.08	1.68	3.46	0.23		
EQT227	2005-25 - HCU 2 Absorber/Dec 2 Reboiler	308	lbs/hr	2.29	7.88	12.30	25.32	1.66		
EQT228	2005-26 - HCU 2 Naphtha Splitter Reboiler	393	lbs/hr	2.93	10.06	15.72	32.36	2.12		
EQT229	2005-27 - HCU 2 Recycle Splitter Reboiler	95	lbs/hr	0.98	3.38	5.28	10.87	0.71		
EQT230	2005-28 - LEU 2 Dec 4 Reboiler	255	lbs/hr	1.90	6.53	10.20	21.00	1.38		
EQT231	2005-29 - CCR 3 Charge Heater	195	lbs/hr	1.45	4.99	7.80	16.06	1.05		
			tons/yr	4.24	14.58	22.78	46.89	3.07		
EQT232	2005-30 - CCR 3 Inter Heater 1	479	lbs/hr	3.57	12.25	19.14	39.41	2.58		
			tons/yr	10.41	35.78	55.89	115.07	7.53		
EQT233	2005-31 - CCR 3 Inter Heater 2	287	lbs/hr	2.07	7.11	11.10	22.85	1.50		
			tons/yr	6.04	20.75	32.41	66.73	4.37		
EQT234	2005-32 - CCR 3 Inter Heater 3	159	lbs/hr	1.18	4.07	6.36	13.09	0.86		
			tons/yr	3.46	11.89	18.57	38.23	2.50		
EQT235	2005-33 - SMR 3 Heater 1	885	lbs/hr	6.59	22.67	35.40	72.88	4.77		
			tons/yr	19.25	66.18	103.37	212.82	13.93		
EQT236	2005-34 - SMR 3 Heater 2	885	lbs/hr	6.59	22.67	35.40	72.88	4.77		
			tons/yr	19.25	66.18	103.37	212.82	13.93		
EQT237	2005-35 - PENEX Rx Feed Heater	38	lbs/hr	0.28	0.96	1.50	3.09	0.20		
			tons/yr	0.82	2.80	4.38	9.02	0.59		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
EQT238	2005-36 - PENEX Dryer Regenerator Heater	15	lbs/hr tons/yr	0.11 0.33	0.38 1.12	0.60 1.75	1.24 3.61	0.08 0.24		
EQT239	2005-37 - PENEX Mole Sieve Regenerator Heater	173	lbs/hr tons/yr	1.29 3.75	4.42 12.90	6.90 20.15	14.21 41.48	0.93 2.72		
EQT240	2005-38 - Flare No 4	144	lbs/hr	0.33	50.00	25.90	56.10	9.50	1.00	
EQT241	2005-39 - Thermal Oxidizer No 3	50	lbs/hr	0.38	115.31	3.25	4.20	0.28	1.73	
EQT242	2005-40 - FCCU 3 Regenerator	130,000 bbl/day	lbs/hr tons/yr	74.60 276.00	179.99 333.54	144.89 191.78	787.46 583.69	23.83 88.33	0.90 1.68	3.68 11.52
EQT243	2005-42 - New East Cooling Tower	32,000 gpm	lbs/hr tons/yr	0.08 0.27				1.68 5.89	< 0.01 < 0.01	
EQT244	2005-43 - New West Cooling Tower	32,000 gpm	lbs/hr tons/yr	0.08 0.27				1.68 5.89	< 0.01 < 0.01	
EQT247	2005-55 - CCR 2 Vent Gas Wash Tower	50,000 bbl/day	lbs/hr tons/yr					0.02 0.07		
EQT248	2005-56 - CCR 3 Vent Gas Wash Tower	50,000 bbl/day	lbs/hr tons/yr					0.02 0.07		
EQT249	2005-57 - Sulfur Loading	1656 ltons/day	lbs/hr tons/yr						2.90 10.27	
EQT250	2005-58 - Coker No. 1 Steam Vent	77.5 MM scf/yr	lbs/hr tons/yr					14.43 4.52		
EQT251	2005-59 - Coker No. 2 Steam Vent	77.5 MM scf/yr	lbs/hr tons/yr					14.43 4.52		
EQT252	01-02 - Diesel Engines	10,000 hp	lbs/hr tons/yr	11.00 7.92	10.25 7.38	155.00 111.60	33.40 24.05	14.56 10.48		

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TABLE V: MAXIMUM ALLOWABLE EMISSION RATES

EQT	ID/EIQ	Capacity MM BTU/hr	Maximum Permitted Emission Rates							
				PM/PM_{10}	SO_2	NO_X	CO	VOC	H_2S	H_2SO_4
FUG025	Road Dust 05 - Road Dust Emissions		lbs/hr tons/yr	5.24 22.97						
FUG026	91-0 TOT - Fugitive Emissions		lbs/hr tons/yr					316.02 1384.5	7.61 33.52	
TRT004	94-8 - MVR Thermal Oxidizer No. 1	240	lbs/hr	1.80	3.30	23.50	19.80	571.00	0.95	
TRT005	2005-41 - MVR Thermal Oxidizer No. 2	240	lbs/hr	1.80	3.30	23.50	19.80	571.00	0.95	
GRP005	COKER CAP	3.224 MM MM BTU/yr	tons/yr	12.01	41.28	64.47	132.74	8.69		
GRP006	FLARE CAP	1000	tons/yr	1.20	175.00	90.50	197.00	33.50	0.48	
GRP007	SRU/TO CAP	490,000 ltons/yr	tons/yr	4.99	1122.4	41.62	55.19	3.61		
GRP008	TANK CAP		tons/yr					1108.0		
GRP010	VAC CAP	3.557 MM MM BTU/yr	tons/yr	13.25	45.54	71.13	146.45	9.59		
GRP012	ULSD Heater CAP	1.8133 MM MM BTU/yr	tons/yr	6.76	23.22	36.27	74.67	4.89		
GRP013	DHT CAP	0.8059 MM MM BTU/yr	tons/yr	5.60	10.80	44.90	19.40	1.12		
GRP015	HCU1/LEU2 Heater CAP	6.5525 MM MM BTU/yr	tons/yr	24.41	83.91	131.05	269.81	17.67		
GRP016	HCU2/LEU3 Heater CAP	6.5525 MM MM BTU/yr	tons/yr	24.41	83.91	131.05	269.81	17.67		
GRP017	MVR Thermal Oxidizers Cap	2.1024 MM MM BTU/yr	tons/yr	6.50	4.90	86.00		229.33		

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TABLE VI: MONITORING AND TESTING REQUIREMENTS

		CO		NOX		SO2		PM	Opacity	
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	COM	Other Requirements
EQT054	4-81 - H-15-01A		X		X					
EQT056	5-81 - H-15-01B		X		X					
EQT076	94-21 - F-33-05		X		X					
EQT077	94-28 – CPF Heater H-39-03		X		X					
EQT078	94-29 - H-39-01		X		X					
EQT079	94-30 - CPF Heater H-39-02		X		X					
EQT060	6-81 - HDS No. 1 Heater (F-15-02)		5D		X					
EQT080	94-43 - Boiler B-401C		X		D					
EQT081	94-45 - Boiler B-401D		X		D					
EQT063	7-81 - Heater F-72-703		X		X			X		
EQT028	2004-1 - Hydro Treater Heater No. 1 H-60-1		5D		X					
EQT031	2004-2 - Hydro Treater Heater No. 2 H-60-2		5D		X					
EQT032	2004-3 - Hydro Treater Heater No. 3 H-60-3		5D		X					
EQT033	2004-4 - Hydro Treater Heater No. 4 H-60-4		5D		X					
EQT206	2005-4 - NHT B-Train Reactor Heater		5D		X					
EQT211	2005-9 - HCU 2nd Stage Charge Heater		5D		X					
EQT226	2005-24 - HCU 2 2nd Stage Charge Heater		5D		X					
EQT237	2005-35 - PENEX Rx Feed Heater		5D		X					
EQT238	2005-36 - PENEX Dryer Regenerator Heater		5D		X					
EQT207	2005-5 - NHT B-Train Stripper Reboiler		5D		X					

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TABLE VI: MONITORING AND TESTING REQUIREMENTS

		CO		NOX		SO2		PM	Opacity	
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	COM	Other Requirements
EQT208	2005-6 - NHT B-Train Naphtha Splitter Reboiler		5D		X					
EQT209	2005-7 - NHT Naphtha Rerun Column Reboiler		5D		X					
EQT210	2005-8 - HCU 1st Stage Charge Heater		5D		X					
EQT214	2005-12 - HCU 1 Recycle Splitter Reboiler		5D		X					
EQT225	2005-23 - HCU 2 1st Stage Charge Heater		5D		X					
EQT229	2005-27 - HCU 2 Recycle Splitter Reboiler		5D		X					
EQT216	2005-14 - CCR 2 Charge Heater	5D			X					
EQT219	2005-17 - CCR 2 Inter Heater 3	5D			X					
EQT220	2005-18 - ARU Xylene Column Reboiler	5D			X					
EQT231	2005-29 - CCR 3 Charge Heater	5D			X					
EQT239	2005-37 - PENEX Mole Sieve Regen. Heater	5D			X					
EQT029	2004-10 - Boiler 401-E	5D		Db	Db					
EQT030	2004-11 - Boiler 401-F	5D		Db	Db					
EQT036	2004-7 – SMR 1 Heater No 1	5D			X			X		
EQT037	2004-8 - SMR 1 Heater No 2	5D			X			X		
EQT203	2005-1 - Crude 2 Heater B	5D			X			X		
EQT204	2005-2 - VAC 2 Charge Heater	5D			X			X		
EQT205	2005-3 - COKER 2 Charge Heater	5D			X					
EQT212	2005-10 - HCU 1 Absorber/Dec 2 Reboiler	5D			X					
EQT213	2005-11 - HCU 1 Naphtha Splitter Reboiler	5D			X					

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		CO		NOX		SO2		PM	Opacity	
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	COM	Other Requirements
EQT215	2005-13 - LEU 2 Dec 4 Reboiler	5D			X					
EQT217	2005-15 - CCR 2 Inter Heater 1	5D			X					
EQT218	2005-16 - CCR 2 Inter Heater 2	5D			X					
EQT221	2005-19 - SMR 2 Heater 1	5D			X			X		
EQT222	2005-20 - SMR 2 Heater 2	5D			X			X		
EQT223	2005-21 - Boiler 401-G	5D		Db	Db			X		
EQT224	2005-22 - GDU 2 Heater	5D			X					
EQT227	2005-25 - HCU 2 Absorber/Dec 2 Reboiler	5D			X					
EQT228	2005-26 - HCU 2 Naphtha Splitter Reboiler	5D			X					
EQT230	2005-28 - LEU 2 Dec 4 Reboiler	5D			X					
EQT232	2005-30 - CCR 3 Inter Heater 1	5D			X					
EQT233	2005-31 - CCR 3 Inter Heater 2	5D			X					
EQT234	2005-32 - CCR 3 Inter Heater 3	5D			X					
EQT235	2005-33 - SMR 3 Heater 1	5D			X			X		
EQT236	2005-34 - SMR 3 Heater 2	5D			X			X		
EQT007	12-81 - Flare No. 2									Weekly visible emission check
EQT013	15-77 - Flare No. 1									Weekly visible emission check
EQT016	16-77 - FCCU No 2 Regenerator	J	J	X		J	J	J	J*	(*or approved alternatives)
EQT034	2004-5 - Flare No. 3									Weekly visible emission check
EQT195	99-3 - Thermal Oxidizer No. 1					J	J			
EQT196	99-4 - Thermal Oxidizer No. 2					J	J			

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TABLE VI: MONITORING AND TESTING REQUIREMENTS

		CO		NOX		SO2		PM	Opacity	
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	COM	Other Requirements
EQT200	99-8 - CCR Wash Tower Vent									
EQT240	2005-38 - Flare No. 4									Weekly visible emission check
EQT241	2005-39 - Thermal Oxidizer No. 3					J	J			
EQT242	2005-40 - FCCU 3 Regenerator Vent	J	J	X		J	J	J	J*	(*or approved alternatives)
EQT247	2005-55 - CCR 2 Vent Gas Wash Tower									
EQT248	2005-56 - CCR 3 Vent Gas Wash Tower									
TRT004	94-8 - MVR Thermal Oxidizer No. 1									
TRT005	2005-41 - MVR Thermal Oxidizer No. 2									

Notes	Required by this Permit (LAC 33:III.509) and
D	40 CFR 60 Subpart D
Db	40 CFR 60 Subpart Db
J	40 CFR 60 Subpart J
5D	40 CFR 63 Subpart DDDDD
X	Required by this permit (LAC 33:III.509) only