

~~June 29, 2007~~

~~March XX, 2008~~

**Permit: APC-81/0829-OPERATION (Amendment 67)  
Fluid Coker Unit, FCU Carbon Monoxide Boiler,  
Wet Gas Scrubber, and Selective Non-Catalytic Reduction System**

The Premcor Refining Group, Inc.  
Delaware City Refinery  
4550 Wrangle Hill Rd.  
Delaware City, DE 19706

ATTENTION: Andrew Kenner,  
Vice President and General Manager

Dear Mr. Kenner:

Pursuant to the State of Delaware "**Regulations Governing the Control of Air Pollution**", Regulation No. 2, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the operation of a Belco Pre-scrubber, an amine-based Cansolv Regenerative Wet Gas Scrubber (WGS) with caustic polisher installed downstream of the Fluid Coking Unit (FCU) Carbon Monoxide Boiler (COB) and a GE Selective Non Catalytic Reduction (SNCR) System in the FCU COB at the Delaware City Refinery, 4550 Wrangle Hill Road in Delaware City, Delaware, in accordance with the following documents:

- Application submitted on Form No. AQM-4 dated February 15, 2004 signed by Franklin R. Wheeler;
- Letter dated March 17, 2004 addressed to Secretary John Hughes and signed jointly by Franklin R. Wheeler for Motiva Enterprises (Motiva) and Bruce Jones for The Premcor Refining Group, Inc. (Premcor) requesting transfer of all Motiva's permits to Premcor;
- Letter dated April 23, 2004 addressed to Franklin Wheeler of Motiva Enterprises, LLC and Bruce Jones of The Premcor Refining Group, Inc. and signed by Secretary John Hughes; and

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- Consent Decrees, including all addenda thereto, lodged with the United States Court for the Southern District of Texas in Civil Action No. H-01-0978, to the extent applicable to the Delaware City Refinery (Consent Decree);
- Secretary's Order No. 2004-A-0058 issued November 30, 2004.
- Secretary's Order No. 2005-A-0030 issued June 2, 2005.
- Placeholder for EAB Settlement

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This permit is issued subject to the following conditions:

**1. General Provisions**

- 1.1 This permit expires five years from the date of issuance.
- 1.2 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.3 This permit may not be transferred to another person, owner, or operator unless the transfer has been approved in advance by the Department. A request for a permit transfer shall be received by the Department at least 30 days before the date of the requested permit transfer. This request shall include:
  - 1.3.1 Signed letters from each person stating the permit transfer is agreeable to each person; and
  - 1.3.2 An Applicant Background Information Questionnaire pursuant to 7 Del. C., Chapter 79 if the person receiving the permit has not been issued any permits by the Department in the previous 5 years.

Approval (or disapproval) of the permit transfer will be provided by the Department in writing.

- 1.4 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or exempted in Regulation No. 2 Section 2.2 of the State of Delaware "**Regulations Governing the Control of Air Pollution.**"
- 1.5 Reserved The owner or operator shall submit a complete supplement to the Title V permit application pursuant to the State of Delaware "**Regulations Governing the Control of Air Pollution.**" Regulation No. 30 Section 5(b) by September 30, 2007.

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The application shall address all applicable requirements including those of 40 CFR Part 64 (Compliance Assurance Monitoring) if applicable.

**2. Emission Limitations**

2.1 Air contaminant emission levels from the FCU WGS shall not exceed those specified in the State of Delaware “**Regulations Governing the Control of Air Pollution**” and the following<sup>1</sup>:

2.1.1 Volatile Organic Compound (VOC) Emissions

2.1.1.1 VOC emissions shall not exceed 0.14 lb/mmDSCF of stack gas and 7.3 TPY.

2.1.1.2 The leak detection and repair requirements to control fugitive VOC emissions from the FCU shall be in accordance with the requirements in 40 CFR 60, Subpart GGG for existing components in light liquid and gaseous service and in accordance with 40 CFR 60, Subpart CC for new components in light liquid and gaseous service. The leak detection and repair requirements to control fugitive emissions from the FCU shall be in accordance with the Consent Decree for both new and existing components in light liquid and gaseous service.

2.1.2 Nitrogen Oxide (NO<sub>x</sub>) Emissions

NO<sub>x</sub> emissions shall not exceed 152 ppmvd @ 0 % oxygen on a 24 hour rolling average basis and 689.8 TPY. The Company shall propose annual concentration based (365 day average) and mass emission (TPY) limits by July 27, 2008 based on approximately 6 months of rolling 365-day data spanning the period November 27, 2007 through May 27, 2008 for AQM’s review, approval and incorporation into this permit.

2.1.3 Particulate Matter with an Aerodynamic Diameter Less than 10 Microns (PM<sub>10</sub>) Emissions

2.1.3.1 H<sub>2</sub>SO<sub>4</sub> emissions shall not exceed 58 lb/hour and 252.3 TPY;

2.1.3.2 TSP emissions shall not exceed 47.1 lb/hour and 206.3 TPY;

<sup>1</sup> Tons per year (TPY) is defined as “tons per rolling twelve months”.

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2.1.3.3 PM<sub>10</sub> emissions (including TSP and H<sub>2</sub>SO<sub>4</sub>) shall not exceed 133.1 lb/hour and 582.9 TPY.

2.1.4 Sulfur Dioxide (SO<sub>2</sub>) Emissions

SO<sub>2</sub> emissions shall not exceed 25 ppmvd @ 0% O<sub>2</sub> on a rolling 365 day average, 50 ppmvd @ 0% O<sub>2</sub> on a rolling 7 day average, and 174 TPY;

2.1.5 Carbon Monoxide (CO) Emissions

2.1.5.1 CO emissions shall not exceed 500 ppm dry @ 0% O<sub>2</sub> on an hourly average, 200 ppm dry @ 0% O<sub>2</sub> on a rolling 365 day average, and 608 TPY.

2.1.5.2 The Company shall not cause or allow the emission of carbon monoxide from the FCU unless it is burned at no less than 1300° F for at least 0.3 seconds in the FCU COB.

2.1.6 Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) Emissions

H<sub>2</sub>SO<sub>4</sub> emissions shall meet one of the following standards:

2.1.6.1 H<sub>2</sub>SO<sub>4</sub>/SO<sub>3</sub> emissions shall be reduced by at least 40% across the wet gas scrubber system; or

2.1.6.2 The outlet concentration of H<sub>2</sub>SO<sub>4</sub>/SO<sub>3</sub> from the stack shall be no greater than 10 ppmvd.

2.1.7 Ammonia (NH<sub>3</sub>) Emissions

Ammonia emissions shall not exceed 2 lb/hour and 8.8 TPY;

2.1.8 Lead (Pb) Emissions

Pb emissions shall not exceed 4.37 E-04 pounds per thousand pounds of coke burned and 9.0 E-02 TPY;

2.1.9 Hazardous Air Pollutant (HAP) Emissions

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Nickel (Ni) emissions shall not exceed 0.001 pounds per 1,000 pounds of coke burned.

- 2.2 The opacity from the FCU WGS stack or the back up incinerator stack, when it is operating, shall not be greater than 20% opacity for an aggregate of more than 3 minutes in any 1 hour or more than 15 minutes in any 24 hour period.
- 2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.

2.4 The emission limitations in Conditions 2.1 shall not apply during periods of planned start up and planned shut downs of the FCU provided the planned start up and shut down event does not exceed 116 hours. The emission limitations shall apply to each planned start up or shut down event after the expiration of the 116 hour period. Planned start ups shall be considered a maximum of 116 hours preceding oil back into the unit. Planned shut downs shall be considered a maximum of 116 hours from feed out of the FCU. In lieu of the emission limitations in Condition 2.1, the following emission limitations shall apply during planned start ups and shut downs of the FCU:

<u>2.4.1</u>	<u>VOC</u>	<u>1.6 lbs/hr</u>
<u>2.4.2</u>	<u>NOx</u>	<u>207 lbs/hr</u>
<u>2.4.3</u>	<u>H<sub>2</sub>SO<sub>4</sub></u>	<u>58 lbs/hr</u>
<u>2.4.4</u>	<u>TSP</u>	<u>47.1 lbs/hr</u>
<u>2.4.5</u>	<u>PM<sub>10</sub></u>	<u>133.3 lbs/hr</u>
<u>2.4.6</u>	<u>SO<sub>2</sub></u>	<u>95 lbs/hr</u>
<u>2.4.7</u>	<u>CO</u>	<u>415 lbs/hr</u>
<u>2.4.8</u>	<u>Ammonia</u>	<u>2 lbs/hr</u>

Compliance with these emission limitations in Condition 2.4 shall be determined based on engineering calculations.

2.5. During operation of the backup incinerator and other periods of FCU CO Boiler, Belco prescrubber and WGS outages, the Company, at a minimum, must initiate a reduction in the feed rate to the FCU and achieve the following operational limits and emissions rates by no later than 24 hours following the commencement of the outage of the FCU CO Boiler, Belco prescrubber and/or WGS:

**Implementation of Turndown Matrix**

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~~2.4 In the event that the FCU COB and/or the WGS are shut down, operation of the FCU with the Backup Incinerator shall be in accordance with Attachment A of this permit.~~

<u>FCU Feed Rate (KBD)</u>	<u>FCU Feed Wt.% S</u>	<u>SO<sub>2</sub> Emissions (lb/hr)</u>
<u>31.5</u>	<u>6.0</u>	<u>4441.5</u>
<u>31.5</u>	<u>5.5</u>	<u>4071.4</u>
<u>31.5</u>	<u>5.0</u>	<u>3701.3</u>
<u>31.5</u>	<u>4.5</u>	<u>3331.1</u>
<u>31.5</u>	<u>4.0</u>	<u>2961.0</u>

**3. Operational Limitations**

3.1 The owner or operator shall comply with the following operational limits:

- 3.1.1 The FCU throughput shall not exceed a maximum rate of 57,199 barrels per day of total feed, exclusive of the FCU recycle stream, as a 12 month rolling average, except as provided in this Condition. In the event that the Company determines that the FCU throughput may exceed 57,199 barrels per day of fresh feed, as a 12 month rolling average, without any “modification” to the FCU, as such term is defined in Delaware Air Quality Regulation No. 1, then the Company shall submit a notification to the Department in advance of achieving a throughput in excess of the level identified in this Condition. The notification shall include a demonstration that the proposed throughput value would be achieved without any modification to the FCU. If the Department approves such demonstration, the Company may operate the FCU at the throughput value addressed in the notification made under this Condition.
- 3.1.2 The Company shall not burn any fuel gas in the FCU COB that contains hydrogen sulfide (H<sub>2</sub>S) in excess of 0.10 gr/dscf (162 ppm);
- 3.1.3 ~~Except as provided in Condition 3.2, the~~The Belco pre-scrubber, the amine-based Cansolv regenerative WGS, the caustic polishing scrubber and SNCR system shall be operating properly at all times when the FCU is operating.
- 3.1.4 During planned start ups of the FCU, the FCU COB and WGS shall be operating prior to introducing feed into the reaction section of the FCU. In the event of a planned shut down of the FCU, the FCU COB or the WGS, the Company shall continue to operate the FCU COB and WGS until there

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is no feed entering the reaction section of the FCU prior to commencing shut down of the FCU COB and/or the WGS.

3.2 This Permit does not authorize emissions exceeding the limits set forth in Condition 2 including emissions during periods of any unplanned shutdown of the FCU, or any unplanned shutdown or bypass of the FCU COB or the Belco prescrubber or WGS. . Instead, in the event of any unplanned shutdown of the FCU or any unplanned shutdown or bypass of the FCU COB or Belco prescrubber or the WGS, the Company shall bear the burden of demonstrating to the Department's satisfaction that the Company's continued operation of the FCU should not subject the Company to an enforcement action for noncompliance with emission limitations or operating standards included in this Permit or otherwise applicable to the facility under the State of Delaware "Regulations Governing the Control of Air Pollution." Such demonstration must at a minimum be supported by sufficient documentation and emissions data including all relevant emissions calculations, formulas, and any assumptions made thereof. The Department's evaluation shall consider, the specific circumstances of the event, including without limitation 1) the cause of, and the Company's response to, the unplanned shutdown; 2) whether the Company has taken all reasonable and prudent steps to abide by the emissions limit conditions; 3) whether the Company has taken all reasonable and prudent steps to minimize the emissions associated with the plant; 4) the degree to which the Company has reduced throughput to the FCU, and the basis for such degree of reduction; 5) the estimated emissions associated with a complete shutdown of the FCU; 6) whether Premcor had reviewed all prior similar causes of unplanned shutdowns and had taken all reasonable and prudent actions necessary to avoid future similar outages; and 7) the actual emissions during the period of the unplanned shutdown.

3.2.1. Should the Company operate the backup incinerator, the Company shall abide by the following:

- a. Carbon Monoxide combustion shall be achieved at a minimum of 1300°F, and at a minimum retention time of 0.3 second; and
- b. Maximum particulate matter emissions of 0.19 grain per dry standard cubic foot ("dscf") shall be achieved either by operating at a temperature of 1700°F, a minimum excess of 1.9% O<sub>2</sub> and a residence time of 2.0 seconds, or, at such other alternate operating conditions as have been demonstrated by testing to achieve equivalent emissions.

~~3.2—In the event of any unplanned shutdown and bypass of the Beleo prescrubber and the WGS, the Company shall implement the operating procedures and turndown matrix in accordance with Attachment "A" of this permit. Implementation of~~

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~~these procedures ensure that the Company shall take steps to immediately respond to safely reduce the FCU throughput to a level that does not cause a violation of any ambient air quality standard. In accordance with Attachment "A" of this permit, the Company shall satisfy the reduced throughput level described by the turndown matrix during the entire duration of the bypassed operation. In the event that the Company makes any material changes to its operating procedures and turndown matrix, it shall submit the revised procedures and turndown matrix to the Department for approval.~~

3.3 Reserved.

3.4 There shall be no emissions of uncondensed VOCs from the condensers, hot wells or accumulators of any vacuum producing system.

3.5 During process unit turnarounds the Company shall provide for the following:

3.5.1 Depressurization venting of the process unit or vessel to a vapor recovery system, flare, or firebox; and

3.5.2 No emission of VOC from a process unit or vessel until its internal pressure is 136 kiloPascals (kPa) (19.7 pounds per square inch atmospheric [psia]) or less.

3.6 At all times, including periods of startup, shutdown, and malfunction, the Company shall maintain and operate the equipment and processes covered by this Permit, including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

3.7 Reserved.

**4.** Reserved.

**5. Compliance Methodology**

5.1 Compliance with Conditions 2.1.3 and 2.1.6 through 2.1.9 shall be based on stack testing to be conducted in accordance with Section 6 of this permit. The Company shall ensure adequate test ports are provided to carry out such testing in accordance with Regulation No. 17, section 2.3.

5.2 Compliance with Condition 2.1.1.1 shall be based on stack testing to be conducted in accordance with Condition 6.2. The Company shall ensure adequate test ports

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are provided to carry out such testing in accordance with Regulation No. 17, section 2.3.

- 5.3 Compliance with Condition 2.1.1.2 for new components in light liquid and gaseous service shall be based on compliance with the standards in 40 CFR 63.162 through 63.177.
- 5.4 Compliance with Conditions 2.1.2, 2.1.4, 2.1.5 and 3.1.2 shall be based on continuous monitoring systems (CMS).
- 5.5 Reserved.
- 5.6 Compliance with Conditions 2.2, 3.1.1 and 3.1.3 shall be based on the monitoring/testing and recordkeeping requirements.
- 5.7 Compliance with Conditions 3.4 shall be based on either piping the uncondensed vapors to a firebox or incinerator. Alternately, the vapors may be compressed and added to the refinery fuel gas. Compliance with Condition 3.5, i.e., during process unit turnarounds, shall be based upon the Company conducting depressurization venting of the process unit or vessel to a vapor recovery system, flare or firebox. The Company shall monitor the pressure in each process or vessel until its internal pressure is 136 kPa or less. These actions shall be documented and maintained in accordance with Condition 7.1.
- 5.8 Compliance with the standards in 40 CFR subpart GGG shall be based on the test methods and procedures in 40 CFR 60.592 and compliance with the requirements of 40 CFR Part 63 subpart CC shall be based on the standards in 40 CFR 63.648.
- 5.9 Compliance with Condition 3.6 shall be based on information available to the Department concerning the Company's actions with respect to such events, and shall include the Department's review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

**6. Testing and Monitoring Requirements**

- 6.1 Reserved.
- 6.2 The Company shall conduct performance testing for VOCs according to the following provisions:

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- 6.2.1 Reserved.
- 6.2.2. Reserved.
- 6.2.3 The Company shall conduct additional performance tests for VOCs every three years. The Company may petition the Department to decrease the frequency of VOC performance tests based on the results of any performance testing.
- 6.2.4 Each performance test conducted pursuant to Condition 6.2 shall be performed in accordance with Reference Method 25A in Appendix “A” of 40 CFR Part 60, and shall determine and report results as total hydrocarbons.
- 6.3 Within 90 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup of such facility, the owner or operator shall conduct performance test(s) and furnish the Department with a written report of the results of such performance test(s) in accordance with the following general provisions:
  - 6.3.1 One original and 2 copies of the test protocol including a “Source Sampling Guidelines and Preliminary Survey Form” shall be submitted a minimum of 45 30 days in advance of the tentative test date to the address in Condition 6.3. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.
  - 6.3.2 The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance and Engineering & Compliance Branches. The Department must observe the test for the results to be considered for acceptance, unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.
  - 6.3.3 The final results of the testing shall be submitted to the Department within 60 90 days of the test completion. One original and 2 copies of the test report shall be submitted to the addresses below:

Original and One Copy to:  
Engineering & Compliance Branch  
Attn: Assigned Engineer

One Copy to:  
Air Surveillance Branch  
Attn: Program Manager

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New Castle, DE 19720

- 6.3.4 To be considered valid, the final results report shall include the emissions test report (including raw data from the test) as well as a summary of the results and a statement of compliance or non-compliance with permit conditions signed by a member of the Company's Health, Safety and Environment department.
- 6.3.5 The results must demonstrate to the Department's satisfaction that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the owner or operator shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.
- 6.4 The QA/QC procedures for the SO<sub>2</sub> CEMS shall be established in accordance with the procedures in Appendix "F" of 40 CFR Part 60.
- 6.5 The QA/QC procedures for the NO<sub>x</sub> CEMS shall be established in accordance with the procedures in Appendix "B" of 40 CFR Part 75.
- 6.6 PM<sub>10</sub>: Compliance with PM<sub>10</sub> emission limits shall be based on performance testing conducted annually, unless the Department approves less frequent testing, as follows:
- 6.6.1 H<sub>2</sub>SO<sub>4</sub>: Compliance with Conditions 2.1.3.1 and 2.1.6 shall be based on testing in accordance with Reference Method 8 in Appendix "A" of 40 CFR Part 60, or other testing methodology approved by the Department.
- 6.6.2 TSP: Compliance with Condition 2.1.3.2 shall be based on testing in accordance with Reference Method 5B in Appendix "A" of 40 C.F.R. Part 60, or other testing methodology approved by the Department.
- 6.6.3 PM<sub>10</sub> (including TSP and H<sub>2</sub>SO<sub>4</sub>): Compliance with Condition 2.1.3.3 shall be based on testing in accordance with Methods 5B/202, or other testing methodology approved by the Department.
- 6.7 The QA/QC procedures for the CO CEMS shall be in accordance with the procedures in Appendix "F" of 40 CFR part 60.

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- 6.8 Ni/Pb: Compliance shall be based on the stack test based emission factor in terms of lb/Mlb coke burn rate. The Company shall conduct additional performance testing in accordance with this condition every three years, unless the Department approves less frequent testing.
- 6.9 Reserved.
- 6.10 The Company shall continuously monitor the temperature of the FCU COB firebox.
- 6.11 The Company shall monitor the FCU throughput and the calculated coke burn rates.
- 6.12 The ~~company~~Company shall continuously monitor the pressure drop across the Agglo-filtering modules and Cyclolab Droplet Separators and the quench/pre-scrubber recirculation pump discharge pressure. The determination that the opacity from the FCU WGS stack, when it is operating, shall not be greater than 20% for an aggregate of more than 3 minutes in any 1 hour or more than 15 minutes in any 24 hour period (required in Section 2.2) shall be based upon ~~maintaining a minimum delta P of 6 inches WC and a~~the following parametric monitoring:
- 6.12.1 The minimum delta-P across the Agglo-Filtering modules and Cyclolab Droplet Separators shall be 6 inches of water column, evaluated on a one minute average basis; and
- 6.12.2 A minimum discharge pressure~~with a single quench/pre-scrubber recirculation pump of 115 psig both on a minute basis~~, evaluated on a one minute average basis, from the quench/pre-scrubber recirculation pumps satisfying the less stringent of:
- 6.12.2.1 115 psig, or
- 6.12.2.2 The discharge pressure equivalent to 95% of the average discharge pressure recorded during performance testing performed in accordance with the methods identified in Condition 6.6.3, provided that such performance testing also includes a demonstration of compliance with the visual emissions standard identified in Condition 2.2 using EPA Method 9

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6.12.3 Notwithstanding Condition 6.12.2, if the discharge pressure from the quench/pre-scrubber falls below the minimum discharge pressure established under Condition 6.12.2 for greater than 3 minutes in any hour or more than 15 minutes in any 24 hour period, the Company may perform a visual emission test in accordance with EPA Reference Method 9 to establish that visible emissions do not exceed the opacity standard specified in Condition 2.2 at the reduced discharge pressure. In such case, the new minimum discharge pressure from the quench/pre-scrubber recirculation pumps shall be the average discharge pressure recorded during the Method 9 test, and shall be used in conjunction with Condition 6.12.1 to evaluate compliance with Condition 2.2.

6.13 Reserved.

**7. Record Keeping Requirements**

- 7.1 The Company shall maintain all records necessary for determining compliance with this permit in a readily accessible location for 5 years and shall make these records available to the Department upon written or verbal request. These records shall include:
- 7.1.1 CEMS data;
  - 7.1.2 Calibration and audit results;
  - 7.1.3 Stack test results;
  - 7.1.4 The daily COB fuel usage;
  - 7.1.5 The coke burn rate and FCU throughput, both on a rolling twelve month average basis;
  - 7.1.6 COB firebox temperature;
  - 7.1.7 Detailed daily records of observations of visible emissions or the absence of visible emissions, or other records identified in an approved alternative plan;
  - 7.1.8 Date of every process unit or vessel turnaround;
  - 7.1.9 Internal pressure of the process unit or vessel immediately prior to venting to the atmosphere;

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- 7.1.10 VOC leak repair records required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service;
  - 7.1.11 Reserved;
  - 7.1.12 Bypass stack SO<sub>2</sub> emissions as calculated according to Condition ~~2.43.2~~; and
  - 7.1.13 Backup incinerator operating hours, furnace temperature, percent O<sub>2</sub>, and opacity.
- 7.2 The rolling 12 month total emissions for each pollutant shall be calculated and recorded each month in an easily accessible format for each pollutant listed in Condition 2.1.

**8. Reporting Requirements**

- 8.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery by calling the Environmental Emergency Notification and Complaint number, (800) 662-8802. Emissions in excess of any permit condition or emissions which create a condition of air pollution of a type that the Department and Company agree are more routine, may be faxed to (302) 739-2466 rather than called in. This condition may be revoked upon written notice to the Company by the Department in its sole discretion.
- 8.2 In addition to complying with Condition 8.1 of this permit, any reporting required by 7 Del C §6028 "**Reporting of a Discharge of a Pollutant or an Air Contaminant**", and any other reporting requirements mandated by the State of Delaware, the owner or operator shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department in writing with the following information:
  - 8.2.1 The name and location of the facility;
  - 8.2.2 The subject source(s) that caused the excess emissions;
  - 8.2.3 The time and date of the first observation of the excess emissions;
  - 8.2.4 The cause and expected duration of the excess emissions;
  - 8.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation)

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- and the operating data and calculations used in determining the magnitude of the excess emissions; and
- 8.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
- 8.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
- 8.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 8.3 Semiannual reports for the preceding six month period shall be submitted to the Department by January 31 and July 31 of each calendar year. The semiannual reports required by this section shall be increased in frequency to quarterly reports at the Department's discretion and shall become effective upon request of the Department after reasonable notice to the Company. An electronic copy of all required reports shall be sent to the Department's compliance engineer assigned to the Refinery. The required reports shall contain the following information:
- 8.3.1 A summary of all excess emissions for the reporting period;
- 8.3.2 Periods when the firebox temperature fell below 1300°F.;
- 8.3.3 Exceedances of the FCU throughput rate identified in Condition 3.1.1.1;
- 8.3.4 A summary of all periods when the FCU WGS has been bypassed;
- 8.3.5 Hourly SO<sub>2</sub> emissions during periods when the FCU WGS was bypassed;
- 8.3.6 The duration of all periods of excess opacity;
- 8.3.7 Back up incinerator operating data required pursuant to condition 7.1.13.
- 8.4 Leak detection and repair reports shall be submitted as required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service.
- 8.5 Quarterly CEMS reports for the preceding quarter shall be submitted to the Department for the CEMS required by this permit by January 31, April 30, July 31 and October 31 of each calendar year and shall include a report of excess emissions, quarterly audit results, data capture for the period and details of out of control periods.

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8.6 Reserved.

8.7 One original of all required reports in hard copy format shall be sent to the address below:

Air Quality Management Section  
Division of Air and Waste Management  
156 South State Street  
Dover, DE 19901

One copy of all required reports in hard copy format shall be sent to the address below:

Program Manager  
Engineering & Compliance Branch  
715 Grantham Lane  
New Castle, DE 19720

**9. Administrative Conditions**

9.1 This permit shall be made available on the premises.

9.2 This permit supersedes all previously issued operation permits.

9.3 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

Paul E. Foster, P.E.  
Program Manager  
Engineering & Compliance Branch

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### ATTACHMENT "A"

#### Initial Evaluation of Operation and Performance of the Coker (FCU) WGS

~~The procedures described herein provide for the initial evaluation and performance of the FCU WGS spanning a period of 12 months from start up. Start up of the FCU WGS has an effective date of September 30, 2006. These requirements are applicable during the interim period plus an additional 6 months ending March 31, 2008. After the expiration of the 18 month start up period, these procedures will expire and the Company must comply with all emissions limitations and all conditions in the Operating permit, even during startup, shutdown and during trips or malfunctions unless the permit is revised in accordance with the following: The Company submits to DNREC proposed operating procedures to govern such occurrences that may occur after the 12 month period and DNREC will review these procedures and will incorporate appropriate operating scenarios to govern such instances into this permit. Provided, however, that any incorporated operating scenario governing beyond the 12 month period shall specify that after a time certain the Company must effectuate the turndown ratios provided in this Attachment and that after a future time certain the Company may not continue to operate the FCU without the pollution control devices so that the FCU must be turned off rather than turned down, and under what circumstances.~~

#### Rationale:

~~The technology incorporated into the WGS has not previously been implemented in any similar application at any other facility in the United States. Accordingly, the Company shall perform an enhanced evaluation during the 12 month period following initial operation of the WGS of anticipated variations in the WGS system performance, including any malfunction or other unintended shutdown of the WGS system. Premcor shall investigate the underlying causes of any malfunction, evaluate the effectiveness of various operational practices, and analyze alternative maintenance procedures. The objective of these investigations will be to identify reasonably available maintenance and operating practices that will minimize events resulting in the bypass of the Beleo prescrubber and the WGS, and to minimize the duration of any such bypass incidents in the event that they occur. Premcor will implement appropriate corrective action to minimize the duration of any bypass event during these circumstances. In addition, Premcor will continue to implement the turndown matrix provided in this Attachment during this twelve month evaluation period.~~

#### Interim Control Measures

The Company shall comply with the following interim control measures:

- ~~1. The requirements in Conditions 2.1.3, 2.1.5 and 2.2 and Regulations 5, 11 and 14 of the State of Delaware "Regulations Governing the Control of Air Pollution" shall not~~

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~~apply during periods of planned start up and planned shut downs of the FCU provided the planned start up and shut down event does not exceed 116 hours. The requirements shall apply to each planned start up or shut down event after the expiration of the 116 hour period. Planned start ups shall be considered a maximum of 116 hours preceding oil back into the unit. Planned shut downs shall be considered a maximum of 116 hours from feed out of the FCU.~~

~~2. In the event that the FCU COB and the WGS are shut down, operation of the FCU with the Backup Incinerator shall be in accordance with Attachment A of this permit subject to the following emission restrictions:~~

~~2.1 Carbon Monoxide combustion shall be achieved at a minimum of 1300°F, and at a minimum retention time of 0.3 second; and~~

~~2.2 Maximum particulate matter emissions of 0.19 grain per dry standard cubic foot (“dscf”) shall be achieved either by operating at a temperature of 1700°F, a minimum excess of 1.9% O<sub>2</sub> and a residence time of 2.0 seconds, or, at such other alternate operating conditions as have been demonstrated by testing to achieve equivalent emissions.~~

~~3. At the start of a planned shut down or start up of the FCU COB and WGS, the Company shall have a maximum transition time of 4 hours to allow the transfer of gases and heat to or from the FCU Back Up Incinerator, to or from the FCU COB and WGS to reach performance standards. During this transition period, the permit limitations in Conditions 2.2 and 2.4 and Regulations 5, 11 and 14 of the State of Delaware “**Regulations Governing the Control of Air Pollution**” shall not apply.~~

~~If there is an emergency shut down of the FCU COB and the WGS, the Company has a maximum of 24 hours, starting from the removal of the FCU COB and the WGS from service, until the FCU off gases must totally enter the FCU Back Up Incinerator and the Company must meet the permitted stack emission standards as per the turndown matrix in Table 1 of this permit. During this period (24 hour maximum), the permit limitations stated in Conditions 2.2 and 2.4 and Regulations 5, 11 and 14 of the State of Delaware “**Regulations Governing the Control of Air Pollution**” shall not apply. The 24 hours needed for start up are due to the controlled heat up increments of the FCU Back Up Incinerator, to prevent spalling of the refractory and firebrick and other possible major damage. If the CO Boiler and Wet Gas Scrubber can be repaired in less than 24 hours, then the back up incinerator does not have to be started up and flue gas may continue to be diverted to the metal bypass stack to allow the CO Boiler and Wet Gas Scrubber to be repaired or restarted.~~

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~~If there is an emergency shut down of the FCU COB and WGS, the Company may conduct an evaluation of the cause of the shut down. If the Company's initial determination is that the FCU COB and WGS can be repaired or restarted in less than 24 hours, then it shall be repaired or restarted, and the Back Up Incinerator need not be started up, the rationale being that each hour produces substantially less pollution. Nonetheless, if the FCU COB and WGS are not restarted and operational during the 24 hour period, the permit conditions and regulations above shall apply after the 24 hour period and emissions in excess of permitted levels after 24 hours will constitute a Permit violation~~

~~4—By no later than November 30, 2007 Premcor shall submit to the Department a report describing the individual incidents during which bypasses occurred, the duration of any such bypass and the results of Premcor's investigation into the cause of the bypass event. The report shall also include Premcor's proposal for determining the circumstances under which an unplanned shutdown of the FCU COB, Beleo preserubber and/or WGS should trigger initiation of procedures to shutdown the FCU. The report shall include a specific proposal describing the maximum duration that the FCU will be allowed to operate in the bypass mode before it is shut down. In determining such maximum duration that the FCU will be allowed to operate in the bypass mode, Premcor shall take into consideration engineering analysis, good air pollution control practices and the outer bounds set by planned start ups and shut downs. The Department will review the report and incorporate appropriate revised operating scenarios in this permit.~~

**Turn-Down Matrix**

~~These procedures have been incorporated to restrict the FCU sulfur dioxide (SO<sub>2</sub>) emission rate to less than 4,450 lbs/hr during time periods that the FCU COB and WGS are bypassed by implementing the alternate operating scenarios (conditions of start-up, shutdown or malfunctions):~~

~~The Company shall assess the cause and determine the course of action following unplanned shutdowns and malfunctions of the COB and WGS. If the COB and WGS can be restarted or any necessary repairs can be completed within 12 hours, no rate cuts need be initiated. If the COB and WGS cannot be restarted or if repairs cannot be completed within 12 hours, the rate cuts in Table 1 shall be initiated and implemented. When the FCU feed throughput rate of 31,500 barrels/day is achieved, this rate will be maintained for the duration of the COB and WGS outage. A tabular summary of potential scenarios is provided below in Table 1.~~

**Table 1**  
**Example of DCR FCU SO<sub>2</sub> Emissions**  
**During Implementation of Turndown Matrix**

FCU Feed Rate (KBD)	FCU Feed Wt.% S	SO <sub>2</sub> Emissions (lb/hr)
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31.5	6.0	4441.5
31.5	5.5	4071.4
31.5	5.0	3701.3
31.5	4.5	3331.1
31.5	4.0	2961.0

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