

SHAWLBY

UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS

United States Courts  
Southern District of Texas  
ENTERED

DEC 24 2003

Michael N. Milby, Clerk of Court

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UNITED STATES OF AMERICA, )  
 Plaintiff, and the )  
 STATES OF DELAWARE and )  
 LOUISIANA, Plaintiff-Interveners, )  
 v. )  
 MOTIVA ENTERPRISES LLC, )  
 Defendant. )

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Civil Action No. H-01-0978  
Honorable Melinda Harmon

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UNITED STATES OF AMERICA, )  
 Plaintiff, and the )  
 STATES OF DELAWARE and LOUISIANA )  
 and the NORTHWEST AIR POLLUTION )  
 AUTHORITY OF THE STATE OF )  
 WASHINGTON, Plaintiff-Interveners, )  
 v. )  
 MOTIVA ENTERPRISES LLC, )  
 EQUILON ENTERPRISES LLC, and )  
 DEER PARK REFINING LIMITED )  
 PARTNERSHIP, )  
 Defendants. )

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90-5-2-1-07209

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## SECOND ADDENDUM TO CONSENT DECREE

Plaintiff, the United States of America (hereinafter "Plaintiff" or "the United States"), on behalf of the United States Environmental Protection Agency (hereinafter "EPA"), Plaintiff-Interveners, the State of Delaware, the State of Louisiana, Northwest Air Pollution Authority, and Defendant, Motiva Enterprises LLC ("Motiva"), hereby execute this Second Addendum to the Consent Decrees in the above-styled action. By the agreement of the United States, the State of Delaware, the State of Louisiana, Northwest Air Pollution Authority, and Motiva, and pursuant to the provisions of Paragraph 220 of the settlement in *United States et al v. Motiva* (the "Motiva Decree") and Paragraph 80 of the settlement in *United States et al v. Motiva Enterprises LLC, Equilon Enterprises LLC, and Deer Park Refining Limited Partnership* (the "Heaters and Boilers Decree"), this Second Addendum hereby modifies the Decrees. These changes affect certain requirements applicable to the Delaware City refinery; some of the paragraphs in the original Consent Decrees have been restructured to accommodate the changes. All other provisions of the Consent Decrees entered by this Court on August 21, 2001, remain in full force and effect. The changed provisions to the Consent Decrees shall be binding on all parties and signatories to the Decrees in this action.

I. The following paragraphs include changes and additions to the scheduling and nitrogen oxides ("NOx") emission reduction requirements applicable to the Delaware City refinery Fluidized Coker Unit ("FCU") and Fluidized Catalytic Cracking Unit ("FCCU"):

A. **SNCR APPLICATIONS: Norco, Louisiana, FCCU, and Delaware City, Delaware, FCU.**

8a. Norco FCCU: By no later than December 31, 2004, Motiva shall complete installation and begin operation of a Selective Non-Catalytic Reduction ("SNCR") system or alternative technology as approved by EPA to achieve the same or greater emission reductions (hereinafter referred to as "SNCR system") on emissions from its Norco FCCU. Motiva shall design the SNCR system for the Norco FCCU to reduce NOx emissions as much as feasible.



8b. Delaware City FCU: By no later than December 31, 2003, Motiva shall notify EPA that it will either install SNCR on the Delaware City FCU or install an alternative NOx emissions control technology as approved by EPA to achieve the same or greater emission reductions. Should Motiva elect to install SNCR, Motiva shall complete installation and begin operation of the SNCR to reduce emissions of NOx from its Delaware City FCU by no later than November 30, 2005, and Motiva shall design the SNCR for the Delaware City FCU to reduce NOx emissions as much as feasible. Motiva may elect to install an alternative NOx emissions control technology on the Delaware City FCU, only if such control technology is designed and operated to achieve greater than fifty (50) percent reduction from the baseline emissions of 700 tons NOx per year. If Motiva installs an alternative NOx control technology on the Delaware City FCU and the alternative technology is designed and operated to achieve a NOx concentration of 20 ppmvd or lower on a 365-day rolling average basis and 40 ppmvd or lower on a three (3) hour rolling average basis (20/40 ppmvd), then Motiva shall not be required to carry out the optimization and limit setting requirements of paragraphs 11 through 17, and shall demonstrate compliance with 20/40 ppmvd emissions limits in accordance with paragraphs 18 and 19 of this Consent Decree. Motiva shall complete installation and start operation of the alternative NOx control technology on the Delaware City FCU no later than the deadline for installation of the FCU WGS as set forth in Paragraph 35. If Motiva installs an alternative NOx control technology under this Paragraph, it may utilize no more than fifty (50) percent of the additional NOx reductions for offsets and in netting that such technology achieves in excess of 245 tons per year reduced.

**B. SNCR Optimization Study.**

11a. Norco FCCU: By no later than March 31, 2005, or three (3) months after the installation and start-up of the SNCR system, whichever is earlier, Motiva shall begin a six-month study to optimize the performance of the SNCR system to minimize NOx emissions from the Norco FCCU ("Optimization Study").

11b. Delaware City FCU: By no later than February 28, 2006, or three (3) months after the installation and start-up of the SNCR system, whichever is earlier, Motiva shall begin a six-

month study to optimize the performance of the SNCR system to minimize NOx emissions from the Delaware City FCU ("Optimization Study").

**E. Use of NOx Adsorbing Catalyst Additives ("Additives") in the FCCUs at Port Arthur, Texas, Convent, Louisiana, and Delaware City, Delaware.**

21(a). Delaware City FCCU: Notwithstanding the provisions of Paragraph 21 above, Motiva shall control NOx emissions from the Delaware City FCCU by controlling key CO Boiler operating parameters directly related to excess oxygen control of that boiler's operation to demonstrate the lowest NOx concentration achievable. Motiva shall report to EPA the key CO Boiler operating parameters to be controlled during the demonstration, and the manner in which Motiva will demonstrate NOx minimization using those control parameters, and shall begin the demonstration by not later than December 31, 2004. The requirements of Paragraphs 23 to 27 shall be applied to this demonstration to establish 7-day and 365-day rolling average concentration-based NOx limits and to demonstrate compliance with those limits. The demonstration shall be a minimum of eighteen (18) months, and of sufficient duration to provide a statistically significant number of 365-day rolling average data points which Motiva shall use to propose a 365-day rolling average concentration-based limit in accordance with paragraph 25.

II. The following paragraphs include changes and additions to the scheduling and sulfur dioxide ("SO<sub>2</sub>") emission reduction requirements applicable to the Delaware City FCU and FCCU:

**A. Installation and Operation of Wet Gas Scrubbers ("WGS") on the Convent, Louisiana and Delaware City FCCUs, and Delaware City FCU.**

35a. Convent FCCU: By no later than December 31, 2006, Motiva shall complete installation and begin operation of WGS on emissions from the Convent FCCU.

35b. Delaware City FCCU and FCU: Motiva shall complete installation and commence start-up of Regenerative WGS on the Delaware City FCU by no later than June 30, 2006, and on the Delaware City FCCU by no later than December 31, 2006. A Regenerative WGS shall mean a process from which sulfur compounds are recovered in any usable form. By no later than



December 31, 2004, Motiva shall construct all tie-ins to the Delaware City FCCU necessary to allow the WGS installation. Motiva shall comply with the concentration-based limits established for the FCCU pursuant to Paragraph 37b within two (2) months of commencing start up. Motiva shall comply with the concentration-based limits established for the FCU pursuant to Paragraph 37a within two (2) months of commencing start up following WGS installation, or pursuant to Paragraph 48 as provided in that Paragraph.

**B. WGS Design and Operation**

37a. Except as provided in Paragraphs 39 through 50, Motiva shall design and operate the Regenerative WGS system on the Delaware City FCU to comply with SO<sub>2</sub> exit concentration-based limits of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each at 0% oxygen.

37b Motiva shall design and operate the Regenerative WGS system on the Delaware City FCCU to comply with SO<sub>2</sub> exit concentration-based limits of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each at 0% oxygen.

38. Emission limits for PM-10 (in lb/1,000 lb coke burn) and H<sub>2</sub>SO<sub>4</sub> (in ppm) from the FCU and the FCCU shall be based on the WGS licensors' guarantees. The concentration-based limits in Paragraphs 37-38 shall not apply during periods of WGS bypass, provided that such bypass is necessary, meets the definition of start-up, shutdown, or malfunction, as provided for in federal and Delaware regulations, and that Motiva implements good air pollution control practices to minimize emissions during such events.

**C. Alternative Regenerative WGS Design for Delaware City FCU.**

39. If the total installed cost for the Regenerative WGS at the Delaware City FCU designed to meet the requirements of Paragraph 37a is more than 5% above the current (at the time of design) total installed cost for a Regenerative WGS designed to achieve 150 ppmvd on a 365-day rolling average and 175 ppmvd on a 7-day rolling average basis, each at 0% oxygen, then Motiva shall install an Alternative Regenerative WGS designed to achieve an emission level no higher than 150 ppmvd on a 365-day rolling average and 175 ppmvd SO<sub>2</sub> on a 7-day rolling average at 0% O<sub>2</sub>. Motiva shall make any incremental design improvements to the Alternative

Regenerative WGS that are possible within the 5% increase of the current total installed capital cost. The incremental design improvements shall be chosen such that they result in maximum SO<sub>2</sub> control. Motiva shall reflect the WGS licensor guarantee SO<sub>2</sub> emissions performance for the Alternative Regenerative WGS design in its permit application, and SO<sub>2</sub> emission limits shall be determined according to Paragraphs 44 to 50 below.

40. By no later than December 31, 2003, Motiva shall submit to EPA the process design specifications for the Alternative Regenerative WGS for the Delaware City FCU, which shall consider at a minimum the design parameters identified in Attachment 1 to this Consent Decree, which is incorporated herein by reference. Motiva and EPA agree to consult on the development of the process design specifications for the Alternative Regenerative WGS system prior to submission to EPA. EPA will provide comments to Motiva within thirty (30) days of receipt of the process design specifications. Motiva shall modify the proposed design to address EPA's comments, and shall implement the design. Motiva shall notify EPA of any substantial changes to the design of the Alternative Regenerative WGS systems that may affect the performance of the Alternative Regenerative WGS systems.

41 - 43. Reserved.

**D. Delaware City FCU Alternative Regenerative WGS Optimization Study.**

44. For any WGS design except that which will be designed and operated at 25 ppmvd and 50 ppmvd as specified in Paragraph 37a, Motiva shall conduct a six-month study to optimize the performance of the Regenerative WGS to minimize SO<sub>2</sub> emissions from the Delaware City FCU ("Optimization Study"). By no later than three (3) months after the completion of the installation of the Regenerative WGS, Motiva shall begin the Optimization Study.

46. Motiva shall submit the results of the Optimization Study to EPA in a written report no later than sixty (60) days after the completion of the study. The report shall identify the relevant operating parameters and their levels that result in the maximum reductions of SO<sub>2</sub> emissions from the FCU, and include at a minimum, the following information:

- (a) Flue gas temperature and flow rate;
- (b) Coke burn rate;
- (c) FCU feed rate;
- (d) FCU feed sulfur content;



- (e) CO boiler firing rate and fuel type;
- (f) Scrubber liquor flow and pH;
- (g) Scrubber pressure drop; and
- (h) Hourly average SO<sub>2</sub> and O<sub>2</sub> concentrations at the point of emission to the atmosphere, and at the inlet to the regenerative WGS.

**E. Determining SO<sub>2</sub> Emission Limits for Delaware City FCU Regenerative WGS**

48. As part of the Optimization Study report required by Paragraph 46, Motiva shall propose to EPA SO<sub>2</sub> concentration limits based on a short-term (e.g., 7-day) rolling average and a long-term (i.e., 365-day) rolling average, each at 0% oxygen, for optimized operation of the FCU control system consistent with the provisions of Paragraphs 44-46. Due to unknown capabilities regarding the ultimate efficiency of Regenerative WGS as compared to typical WGS, the following approach shall be used by EPA and Motiva for setting the Alternative Regenerative WGS limits for the Delaware City FCU. The concentration limits shall be based on the percent SO<sub>2</sub> reductions derived through the optimization program as follows:

$$\text{FCURA7} = (1 - \text{FCUOPR}/100) \times 2800$$

and

$$\text{FCURA365} = (1 - \text{FCUOPR}/100) \times 2400$$

FCURA7 = rolling 7-day average ppmvd at 0% O<sub>2</sub> for FCU  
 FCURA365 = rolling 365-day average ppmvd at 0% O<sub>2</sub> for FCU  
 FCUOPR = optimized percent reduction for FCU

Motiva shall comply with the concentration-based limits it proposes beginning immediately upon submission of its report to EPA, until such time as Motiva is required to comply with the emissions limits set by EPA, pursuant to Paragraphs 49 and 50.

49. EPA will use the Continuous Emissions Monitoring System ("CEMS") data collected during the Optimization Study and all other available and relevant information to establish concentration-based limits for the Delaware City FCU. The emissions limits for the Regenerative WGS on the FCU shall be no less stringent than 175 ppmvd SO<sub>2</sub> on a 7-day rolling average at 0% O<sub>2</sub> or 150 ppmvd SO<sub>2</sub> on a 365-day rolling average at 0% O<sub>2</sub>, and shall not be any more stringent than 50 ppmvd SO<sub>2</sub> on a 7-day rolling average at 0% O<sub>2</sub> or 25 ppmvd SO<sub>2</sub> on a 365-day rolling average at 0% O<sub>2</sub>.

50. EPA will notify Motiva of its determination of the concentration limits for the Delaware City FCU, and Motiva shall immediately, or within thirty (30) days of such notice if EPA's optimized concentration limits are different from Motiva's proposed limits, operate its Regenerative WGS system at the FCU so as to comply with the established limits. The emission limits shall not apply during periods of WGS bypass, provided that such bypass is necessary, meets the definition of start-up, shutdown, or malfunction, as provided in federal and Delaware regulations, and that Motiva implements good air pollution control practices to minimize emissions during such events.

**H. FCCU Regenerator NSPS Subparts A and J Applicability**

57(a). Motiva's FCCU regenerators at the refineries identified in Paragraph 5 shall be affected facilities subject to the requirements of NSPS Subparts A and J for each pollutant by the dates specified below:

**Convent:**

SO <sub>2</sub>	- 12/31/06
PM	- 12/31/06
CO	- upon lodging
Opacity	- Alternative Monitoring Plan by 12/31/06

**Delaware City:**

SO <sub>2</sub>	- 12/31/06
PM	- 12/31/06
CO	- 9/30/02
Opacity	- Alternative Monitoring Plan by 12/31/06

**Norco:**

SO <sub>2</sub>	- upon lodging
PM	- upon lodging
CO	- upon lodging
Opacity	- Alternative Monitoring Plan by 12/31/02

**Port Arthur:**

SO <sub>2</sub>	- 12/31/06
PM	- 12/31/06
CO	- 12/31/06
Opacity	- Alternative Monitoring Plan by 12/31/06



III. The following paragraph is being added to the permitting requirements in Paragraph 168, and is applicable to the Delaware City refinery:

168a. Delaware City: By no later than March 31, 2004, Motiva shall submit complete applications for all state and federally-enforceable permits necessary for the installation of Regenerative WGS systems on the Delaware City FCU and FCCU, and other contemporaneous or related projects. The Delaware Department of Natural Resources and Environmental Control ("DNREC") shall issue its decision on all state and federally-enforceable permits related to the FCU as contained in those permit applications received on or before March 31, 2004, within eight (8) months of receipt of Motiva's applications. DNREC shall issue its decision on the remaining state and federally-enforceable permits as contained in those permit applications received on or before March 31, 2004, within fourteen (14) months of receipt of Motiva's applications. However, if DNREC issues its decisions on all projects contained in Motiva's permit applications before the end of eight (8) months following the submittal of the complete permit applications, Motiva shall complete installation and commence start-up of the WGS systems earlier than the deadlines in Paragraph 35b. The installation and start-up deadlines shall be moved up by the same number of days that DNREC issues all final permits or actions ahead of the eight (8) month deadline.

IV. The New Source Performance Standards Subpart J applicability deadlines contained in Attachment 2 of the Heaters and Boilers Decree for the two units at the Delaware City refinery listed below, are changed as follows:

- 1) 21-H-701 Heater - Compliance by 12/31/06
- 2) 21-H-703 Heater - Compliance by 12/31/06

So entered in accordance with the foregoing this 19<sup>th</sup> day of December, 2003.



Melinda Harmon  
United States District Court Judge  
Southern District of Texas



FOR PLAINTIFF, UNITED STATES OF AMERICA:

Thomas L. Sansonetti, et al. Date: August 5, 2003

Thomas L. Sansonetti *Andy Spurlin's reply,*  
Assistant Attorney General *second with permission*  
Environment and Natural Resources Division  
U.S. Department of Justice  
10<sup>th</sup> & Pennsylvania Avenue, N.W.  
Washington, D.C. 20530

Dianne M. Shawley

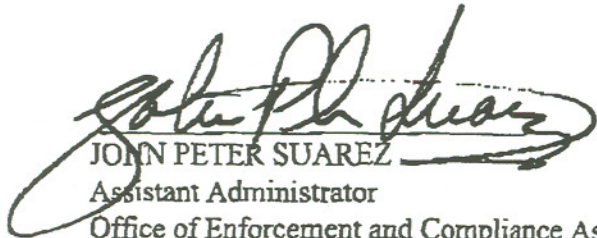
Date: Aug. 4, 2003

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U.S. Department of Justice  
1425 New York Avenue, N.W.  
Washington, DC 20005

Michael T. Shelby  
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P.O. Box 61129  
Houston, TX 77208

United States v. Motiva Enterprises LLC., et al.,

FOR U.S. ENVIRONMENTAL PROTECTION AGENCY:



JOHN PETER SUAREZ

Assistant Administrator

Office of Enforcement and Compliance Assurance

U.S. Environmental Protection Agency

Ariel Rios Building

1200 Pennsylvania Avenue, N.W.

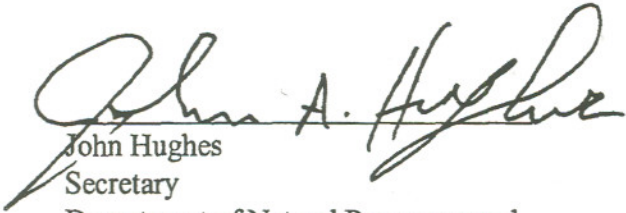
Washington, D.C. 20460

Date

8/4/03

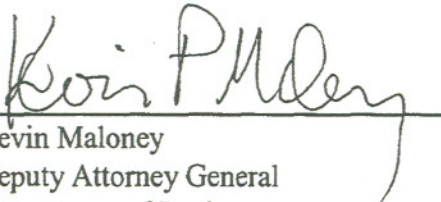


**For Plaintiff-Intervener the State of Delaware:**



John Hughes  
Secretary  
Department of Natural Resources and  
Environmental Control  
89 Kings Highway  
Dover, Delaware 19901

Date: 7-30-03



Kevin Maloney  
Deputy Attorney General  
Department of Justice  
102 West Water Street  
Dover, Delaware 19904

Date: 7/29/03

**Preliminary Approval of Plaintiff-Intervener, the State of Louisiana, through the  
Department of Environmental Quality:**

Bruce Hammatt by *BH*  
Bruce Hammatt  
Assistant Secretary  
Office of Environmental Compliance  
Louisiana Department of Environmental Quality

Date: 8/4/03

Ted Broyles, II by *TB*  
Ted Broyles, II  
Senior Attorney  
Legal Division  
Louisiana Department of Environmental Quality  
P.O. Box 82282  
Baton Rouge, Louisiana 70884-2282

Date: 8/4/03



**For Northwest Air Pollution Authority of the State of Washington, A Washington  
Municipal Corporation:**

By: *Laughlan H. Clark* by *[Signature]*

*8/4/03*

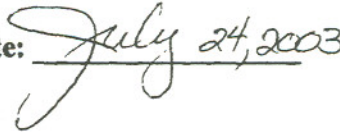
Laughlan H. Clark  
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1700 D Street  
P. O. Box 5226  
Bellingham, WA 98227

**For Motiva Enterprises LLC, Equilon Enterprises LLC, and Deer Park Refining Limited Partnership:**



Judy Moorad  
Vice President  
Safety, Health and Environment  
Shell Oil Products, U.S.  
12700 Northborough Drive - NAX 300N  
Houston, TX 77067-2508

**Date:**



Notice: The attached order has been entered.



Dianne M Shawley 4:01-cv-00978 60 aty  
US Dept Justice  
Environmental Enforcement Sect  
P O Box 7611  
Washington, DC 20044

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4:01-cv-00978 #60  
16 page(s).  
12/24/03

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AUTHORIZATION TO SEND NOTICES  
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In all cases where I appear as an attorney, the Clerk of the United States District Court for the Southern District of Texas may send me notices by facsimile transmission rather than mail. See Fed.R.Civ.P. 77, Fed.R.Crim.P. 49, Fed.R.Bankr.P. 9022,9036.

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Name: \_\_\_\_\_ State Bar Number: \_\_\_\_\_

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Firm: \_\_\_\_\_

Suite: \_\_\_\_\_

Street or P. O. Box: \_\_\_\_\_

City, State and Zip: \_\_\_\_\_

Business Telephone: (\_\_\_\_\_) \_\_\_\_\_

Mail to: Attorney Admissions  
United States District Clerk  
P. O. Box 61010  
Houston, TX 77208

Control: CV-INS\_image5-59963