UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MINNESOTA

UNITED STATES of AMERICA,	)	
	)	
Plaintiff,	)	
and	)	
THE STATE OF MINNESOTA,	)	
	)	
Plaintiff-Intervener,	)	
	)	
v.	)	Civil Action
	)	No.
KOCH PETROLEUM GROUP, L.P.	)	
	)	
Defendant.	)	
	)	

CONSENT DECREE

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UNITED STATES DISTRICT COURT
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UNITED STATES of AMERICA, Plaintiff, and THE STATE OF MINNESOTA, Plaintiff-Intervener, v. KOCH PETROLEUM GROUP, L.P. Defendant.	)	Civil Action No.

CONSENT DECREE

WHEREAS, Plaintiff, the United States of America (hereinafter "Plaintiff" or "the United States"), on behalf of the United States Environmental Protection Agency (herein, "EPA"), has simultaneously filed a Complaint and lodged this Consent Decree against Defendant, Koch Petroleum Group, L.P. (herein, "Koch" or "Defendant"), for alleged violations at three petroleum refineries owned and operated by Koch, the Pine Bend, Minnesota refinery, and the East and West refineries in Corpus Christi, Texas;

WHEREAS, prior to the filing of the Complaint, Koch met with representatives from EPA to discuss reconciling EPA and

industry goals for progressive Clean Air Act compliance at Koch's three refineries;

WHEREAS, Koch and EPA's primary common goal in this Consent Decree is to address particular areas of concern: Control of fugitive emissions, elimination of excess flaring, and reduction of nitrogen oxides ("NO_x") and sulfur dioxide ("SO_2") emissions from refinery process units (collectively referred to as "Marquee issues"), in which Koch has agreed to undertake major and extensive program enhancements involving both installation of air pollution control equipment and establishment of strict management practices to reduce air emissions from its refineries;

WHEREAS, the parties agree that the installation of equipment and implementation of controls pursuant to this Consent Decree will achieve major improvements in air quality control, and also that certain actions that Koch has agreed to take are expected to achieve advances in technology and methodology for air pollution control;

WHEREAS, Koch is the first petroleum company to step forward and enter into a comprehensive settlement with EPA addressing this broad range of air pollution control;

WHEREAS, Koch has not answered or otherwise responded to the Complaint in light of the settlement memorialized in this Consent Decree;

WHEREAS, the United States' Complaint alleges that Koch has been and is in violation of certain provisions of the following statutes and their implementing regulations: the Clean Air Act (the "Act"), 42 U.S.C. §§ 7470-7492; the Resource Conservation and Recovery Act, ("RCRA"), 42 U.S.C. § 6901 et seq.; the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9603(a); the Emergency Planning and Community Right to Know Act ("EPCRA"), 42 U.S.C. § 11004(a); and the Clean Water Act ("CWA"), 33 U.S.C. § 1321(b)(3) and (j);

WHEREAS, the State of Minnesota has filed a Complaint in Intervention, alleging that Koch was and is in violation of the applicable State Implementation Plan ("SIP");

WHEREAS, the State of Texas participated in the discussions regarding this Consent Decree and the Texas Natural Resources Conservation Commission ("TNRCC") has expressed general approval of its terms;

WHEREAS, Koch has denied and continues to deny the violations alleged in each of the Complaints; maintains that it has been and remains in compliance with all applicable environmental regulations, and is not liable for civil penalties or injunctive relief; however, in the interest of settlement and to accomplish its objective of cooperatively working to reconcile EPA and industry goals under the Clean

Air Act, has agreed to undertake installation of air pollution control equipment and enhancements to its air pollution management practices at the three refineries to reduce air emissions;

WHEREAS, the parties acknowledge that this process, which was initiated by Koch, is an innovative approach to resolve potential compliance issues while simultaneously advancing the goals of the Clean Air Act;

WHEREAS, Koch has waived any applicable federal or state requirements of statutory notice of the alleged violations;

WHEREAS, the United States, Plaintiff-Intervener, and Koch have agreed that settlement of this action is in the best interest of the parties and in the public interest, and that entry of this Consent Decree without further litigation is the most appropriate means of resolving this matter; and

WHEREAS, the United States, Plaintiff-Intervener, and Koch have consented to entry of this Consent Decree without trial of any issues.

NOW, THEREFORE, without any admission of fact or law, and without any admission of the violations alleged in the Complaints, it is hereby ORDERED AND DECREED as follows:

I. JURISDICTION AND VENUE

1. The Complaints state a claim upon which relief can be granted against the Defendant under Sections 113 and 167 of

the CAA, 42 U.S.C. §§ 7413 and 7477, and 28 U.S.C. § 1355. This Court has jurisdiction of the subject matter herein and over the parties consenting hereto pursuant to 28 U.S.C. § 1345 and pursuant to Sections 113 and 167 of the CAA, 42 U.S.C. §§ 7413 and 7477 and Section 3008(a) of RCRA, 42 U.S.C. § 6928(a), Section 109(c) of CERCLA, 42 U.S.C. § 9609(c), Section 325(b) of EPCRA, 42 U.S.C. § 11045(b), and Section 309(b) of the CWA, 33 U.S.C. § 1319(b). Venue is proper under Section 113(b) of the Act, 42 U.S.C. § 7413(b), Section 3008(a) of RCRA, 42 U.S.C. § 6928(a), Section 109(c) of CERCLA, 42 U.S.C. § 9609(c), Section 325(b) of EPCRA, 42 U.S.C. § 11045(b), and Section 309(b) of the CWA, 33 U.S.C. § 1319(b), and under 28 U.S.C. § 1391(b) and (c).

II. APPLICABILITY

2. The provisions of this Consent Decree shall apply to and be binding upon the United States, the Plaintiff-Intervener, and upon the Defendant as well as the Defendant's officers, employees, agents, successors and assigns, and shall apply to Defendant’s refineries for the life of the Decree. In the event Defendant proposes to sell or transfer any of its refineries subject to this Consent Decree, it shall advise in writing to such proposed purchaser or successor-in-interest of the existence of this Consent Decree, and shall send a copy of such written notification by certified mail, return receipt

requested, to EPA before such sale or transfer, if possible, but no later than the closing date of such sale or transfer.

III. FACTUAL BACKGROUND

3. Koch operates three petroleum refineries for the manufacture of various petroleum-based products, including gasoline, diesel, and jet fuels, and other marketable petroleum by-products.

4. Koch's Pine Bend refinery has the capacity to process approximately 285,000 barrels per day of heavy crude oil. The total capacity of Koch's Corpus Christi East and West refineries is approximately 285,000 barrels per day.

5. Petroleum refining involves the physical, thermal and chemical separation of crude oil into marketable petroleum products.

6. The petroleum refining process at Koch's three refineries results in emissions of significant quantities of criteria air pollutants, including nitrogen oxides ("NO_X"), carbon monoxide ("CO"), particulate matter ("PM"), and sulfur dioxides ("SO_2"), as well as volatile organic compounds ("VOCs"), including Benzene. The primary sources of these emissions are the fluidized catalytic cracking units ("FCCUs"), process heaters and boilers, the sulfur recovery plants, the wastewater treatment system, fugitive emissions

from leaking components, and flares throughout the refinery where excess emissions are combusted.

IV. POLLUTION REDUCTION MEASURES

A. NO_X Emissions Reductions from Heaters and Boilers

Program Summary: Koch will implement a program to reduce NO_X emissions from refinery heaters and boilers over 40 mmBTU/hr. higher heating value ("HHV") by installing ultra low-NO_X burners ("ULNB"), the demonstration of "next generation" ultra low-NO_X burners, or an alternative emissions reduction technology, and demonstrating compliance with the lower emission limits specified within this Consent Decree with the use of source testing, continuous emissions monitoring systems ("CEMS"), and/or parametric monitoring. Installation of ultra low NO_X burner technology is not required for heaters and boilers less than 40 mmBTU/hr(HHV).

7. By March 31, 2001, Koch shall submit to EPA, an initial plan for NO_X emissions reductions from heaters and boilers. This plan shall be in writing and shall contain the following:

(a.) An inventory of all heaters and boilers at each refinery and their size;

(b.) Identification of all heaters and boilers over 40 mmBTU/hr(HHV) now fitted with ultra low-NO_X burners;

(c.) Identification of all heaters and boilers over 40 mmBTU/hr(HHV) where Koch expects to install "current generation" ultra low-NO_X burners and the projected date of installation;

(d.) Identification of all heaters and boilers over 40 mmBTU/hr(HHV) where Koch plans to demonstrate "next generation" ultra low-NO_X burners and the projected date of installation;

(e.) Identification of all heaters and boilers over 40 mmBTU/hr(HHV)where it is not now expected to be technologically feasible to install or operate current generation or next generation ultra low-NO_X burners (Preliminary Infeasibility List);

(f) Demonstration that requirements of Paragraphs 14 and 17 will be met; and

(g) Identification of all CEMS and parametric monitoring to be installed and the projected date of installation.

Koch will update this plan annually as further discussed in Paragraph 22 of this Consent Decree.

8. For purposes of this Consent Decree, "current generation" ultra low-NO_X burner means those burners currently available on the market that are designed to achieve a NO_X emission rate of 0.03 to 0.04 lb/mmBTU (HHV), when firing natural gas at "typical" industry firing conditions at full design load.

9. For purposes of this Consent Decree, "next generation" ultra low-NO_X burner shall mean those burners new to the market that are designed to an emission rate of 0.012 to 0.015 lb/mmBTU (HHV), when firing natural gas at "typical" industry firing conditions at full design load.

10. For those heaters and boilers identified in Paragraph 7(c) above, Koch shall begin installing current generation ultra low-NO_X burners (ULNB), as defined above and

where determined to be technologically feasible, during the scheduled turnaround (t/a) for each unit that commences on or after August 1, 2001, or for heaters 11H-3, 11H-4 and 11H-5, where t/a commences on or after December 31, 2001. Koch will install the new burners to achieve the lowest feasible emissions of NO_X at maximum representative operating conditions. Subsequent to the development of the initial plan, see Paragraph 7, where warranted, and considering the requirements of Paragraphs 14 and 17, Koch may move heaters and boilers between categories in Paragraph 7. Koch will discuss these changes in the annual plan update.

11. For those heaters and boilers identified in Paragraph 7(d) above, Koch shall demonstrate next generation ultra low-NO_X burners, as defined above, for a test period beginning December 31, 2001. Koch will operate the new burners to achieve the lowest feasible emissions of NO_X at maximum representative operating conditions.

12. Koch shall prepare a written evaluation of the next generation ultra low-NO_X burner demonstration to include a discussion of effectiveness and economic and technical feasibility. Koch shall submit its report to EPA no later than March 31, 2002.

13. If EPA determines that the demonstration of next generation ultra low-NO_X burners is successful, based on Koch's written evaluation of the demonstration, to include design rate, emission rate and heater reliability, and such other information as may then be available to EPA, Koch shall install the "next generation" burners on all heaters and boilers, where feasible, with t/a dates that commence on or after one year following EPA's notice to Koch that the demonstration was successful. Heaters and boilers that meet the "netting unit" definition as of said date (one year after EPA's notice to Koch), will not require additional modification.

14. For heaters and boilers identified in Koch's Preliminary Infeasibility Lists, as updated, Koch shall design and install an alternative emission reduction technology that achieves a weighted average emission limit in lbs NO_X/mmBTU, separately for Pine Bend and for Corpus Christi East and West combined, of not more than 0.06 lb/mmBTU (HHV), based on total emissions and total firing capacities of the heaters and boilers on those lists, by no later than December 31, 2006.

15. By no later than December 31, 2005, Koch shall submit to EPA a Final Determination of Infeasibility, which will include those heaters and boilers which Koch proposes to

exempt, on the basis of technological or economical infeasibility, from further burner technology upgrades for NO_X control as required under Paragraphs 10 and 14. Koch shall include in the Final Determination its basis for the determination of infeasibility.

16. By no later than December 31, 2006, Koch will have installed current or next generation ultra low-NO_X burners, or an alternate emission reduction technology as specified in Paragraph 14, on all heaters and boilers of over 40 mmBTU/hr (HHV), except for those identified pursuant to Paragraph 15 of this Consent Decree.

17. In the event that Koch is successful in limiting the number of heaters or boilers in the technologically infeasible category to:

(a.) No more than three (3) at Pine Bend and three (3) at the combined Corpus Christi East and West refineries, and with a total of no more than four (4) across all the refineries; or

(b.) No more than one heater or boiler separately for Pine Bend and for Corpus Christi East and West combined;

then no further controls will be necessary for these heaters or boilers, they will be considered as “netting units” as that

term is defined in Part IV, Section D of this Consent Decree, and the provisions relating to a weighted average of emission limits of not more than 0.06 lb NO_X per mmBTU/hr(HHV) will not apply. [EXAMPLE: if Pine Bend has only one heater or boiler that is in the technological infeasibility category, but the Corpus refineries have 7 in the technologically infeasible category, the requirements in Paragraph 14 would not apply to the Pine Bend unit, but would apply to all 7 of the Corpus Christi East and West units.]

18. Nothing in this Part shall exempt Koch from complying with any and all other state, regional or federal requirements.

19. If Koch demonstrates, reports to EPA, and EPA determines, that Koch is complying with the Tier II gasoline requirements 40 C.F.R. §§ 80.195-80.205 earlier than their applicable compliance date, the deadline identified in Paragraph 16 (December 31, 2006) shall be extended by a period equal in time to the amount of Koch's early compliance with Tier II deadlines, on a refinery-by-refinery basis.

20. On heaters and boilers with capacity of 150 mmBTU/hr (HHV) or greater, Koch shall install CEMS for NO_X at the time the heaters and boilers are fitted with control technology under this Consent Decree.

21. On heaters and boilers with a capacity less than 150 mmBTU/hr(HHV) that are fitted with control technology under this Consent Decree, Koch shall conduct an initial performance test at maximum representative operating conditions. For heaters and boilers of greater than or equal to 100 mmBTU/hr(HHV) but less than 150 mmBTU/hr(HHV), Koch shall propose operating parameters to be monitored to determine future compliance based on good engineering judgment to ensure that the parameters are most representative for predicting emissions. At a minimum these parameters shall include combustion O_2 and air preheat temperature.

Recordkeeping and Reporting Requirements for Section A

22. Koch shall submit an annual update to the Initial Plan by March 31st of each calendar year regarding the NO_x heater and boiler project and the requirements of this Section. This report shall contain:

(a.) A list of all heaters and boilers which went through t/a during the prior calendar year;

(b.) The type of burner upgrade that was conducted on each heater and boiler;

(c.) The results of all emission tests conducted on each heater and boiler identified in Paragraph 7 during the prior calendar year;

(d.) A summary of the designed emission factors and results of all tested next generation burner technology

installations identified in Paragraph 7 conducted during the prior calendar year;

(e.) A summary of all heaters and boilers scheduled for t/a during the next calendar year and the dates of the scheduled t/a, and the type of technology that Koch expects to install on those units;

(f.) An identification of established permit limits (in lbs NO_X per mmBTU (HHV) fired) applicable to each heater or boiler modified under this Consent Decree;

(g.) A demonstration that the requirements of Paragraphs 14 and 17, if applicable, continue to be met with updates for changes to the initial plan as required by Paragraph 10; and

(h.) A summary of all CEMS and parametric monitoring installations during the prior calendar year.

B. NO_X Emission Reductions from FCCUs

Program Summary: Koch will demonstrate the use of low-NO_X combustion promoter and NO_X adsorbing catalyst additive at the Corpus Christi West FCCU, alone (catalyst test) and in combination with the implementation of Selective Non-Catalytic Reduction ("SNCR") for the reduction and control of NO_X emissions (combined technology test). Successful demonstrations will obligate Koch to implement the catalyst additives alone, SNCR alone, or the combined technologies at its two remaining refineries or to implement other technologies giving equivalent or superior emissions performance.

23. Prior to June 1, 2001, Koch shall begin the use of low-NO_X combustion promoter, alone and in combination with NO_X adsorbing catalyst additive in the Corpus West Plant's FCCU. The test for low NO_X combustion promoter will test the effect of complete replacement of conventional combustion promoter

with low NO_X combustion promoter wherever and whenever combuster promoter is used. Koch shall also attempt to use NO_X adsorbing catalyst additive alone, in an effort to quantify the emission reducing effects of each.

24. No later than December 31, 2001, Koch shall complete a study of the individual and combined effects of the additives on NO_X emissions from the FCCU, identify the amount of each catalyst additive, and the combined catalyst additives, and recommend to EPA the proposed economically reasonable maximum percentage of NO_X adsorbing catalyst additive up to 2% of total catalyst makeup, the addition of which results in the lowest feasible NO_X concentration in the regenerator flue gas at the tested facility.

25. Koch's proposal shall be included in a final report to EPA, "Catalyst Additive Study for Reduction of FCCU NO_X Emissions," to be submitted no later than March 31, 2002. EPA will provide a written response to Koch's proposal within 90 days.

26. During the planned shutdown of the Corpus Christi West FCCU, in calendar year 2002, Koch shall install an SNCR system which will allow the injection of a reductant, such as ammonia or urea, into the regenerator flue gas. Koch will

design the system to reduce emissions of NO_X from the FCCU regenerator as much as economically feasible.

27. Koch will not be required to install SNCR pursuant to Paragraph 26 if Koch is able to achieve a NO_X concentration of 20 ppmvd (at 0% oxygen) or less on an annual average basis using only catalyst additives. Alternatively, if Koch can achieve a 20 ppmvd (at 0% oxygen) concentration or lower with an emission reduction technology not specified in this Consent Decree, Koch may install an alternative technology that will meet the 20 ppmvd (at 0% oxygen) NO_X emission limit.

28. Koch may elect to change the location of the combined technology test from Corpus Christi West to the Pine Bend FCCU at its next t/a but no later than 2003, by providing written notice to EPA by December 31, 2001. If Koch elects to demonstrate the combined NO_X control technology at Pine Bend, all the requirements of this Section shall apply, with the exception that the completion date shall be extended to December 31, 2003.

29. Koch shall operate the SNCR system in conjunction with the combination of low-NO_X combustion promoter and NO_X eliminating catalyst additive that will yield the lowest feasible NO_X concentration in the FCCU regenerator flue gas, as supported by the study. Koch will operate this “combined

technology system" in an effort to achieve a NO_X concentration of 20 ppmvd at 0% oxygen. During the combined technology test, Koch will monitor SNCR inlet NOx concentrations on a continuous basis for the period of the optimization study unless Koch shall propose and EPA shall approve an alternative monitoring frequency.

30. Koch will report the results of the combined technology test as follows:

(a.) Six months following the startup of the combined technology system, Koch will evaluate the success of this system based on the actual hourly, daily, weekly and projected annual average NO_X concentration in the regenerator flue gas using the CEMS and/or performance tests and will report this information to EPA within 8 months of startup.

(b.) One year following the startup of the combined technology system, Koch will evaluate the success of this system based on the actual hourly, daily, weekly, and annual average NO_X concentration in the regenerator flue gas using CEMS and/or performance tests, and will report this information to EPA within 15 months of startup.

For each report, Koch will prepare a summary for general use by the EPA and the States of Minnesota and Texas, notwithstanding any confidentiality claim by Koch.

31. For purposes of this Consent Decree, a "successful" test of the combined technology will be an annual average NO_X concentration of less than or equal to 20 ppmvd (at 0% oxygen).

32. For purposes of this Consent Decree, a "partially successful" test of the combined technology will be an annual average NO_X concentrations of less than 70 ppmvd (at 0% oxygen) but greater than 20 ppmvd (at 0% oxygen).

33. For purposes of this Consent Decree, a "partial failure" of the combined technology will be an annual average of daily NO_X concentrations of less than or equal to 100 ppmvd (at 0% oxygen), but greater than or equal to 70 ppmvd (at 0% oxygen).

34. For purposes of this Consent Decree, a "failure" of the combined technology will be an annual average NO_X concentration of greater than 100 ppmvd (at 0% oxygen).

35. Pursuant to this Consent Decree, success or partial success, as defined above, will compel Koch to do the following:

(a.) 3 months after submittal of final test report, begin using catalyst additives, where justified by the catalyst additive study in Paragraph 25, at Corpus Christi East and Pine Bend FCCUs;

(b.) During the next turnaround for each FCCU that occurs no sooner than 18 months after submittal of the 6-month test report, install SNCR at the Pine Bend FCCU and SNCR, using an enhanced reductant such as hydrogen, at the Corpus Christi East FCCU;

(c.) SNCR will not be required at the Corpus Christi East FCCU if Koch can achieve and demonstrate an annual average of daily NO_X concentrations less than or equal to 35 ppmvd (at 0% oxygen), and show that SNCR cost

effectiveness is greater than $10,000 per ton (based on annualized cost); and

(d.) SNCR will not be required for any FCCU that demonstrates annual average concentration of less than or equal to 20 ppmvd (at 0% oxygen) NO_X without it.

36. Pursuant to this Consent Decree, partial failure in the combined technology test will compel Koch to propose an alternative for installation during the next t/a for that unit that is at least 18 months after the test report submission required by Paragraph 30(a). Such proposal will be approved if EPA determines that the alternate technology will achieve an annual average of daily NO_X concentrations of less than or equal to 70 ppmvd (at 0% oxygen). EPA shall provide a response to Koch within 90 days of submission.

37. Pursuant to this Consent Decree, failure in the combined technology test will compel Koch to propose an alternative control technology for all three FCCUs for installation during the next t/a for that unit that is at least 18 months after the test report submission required by Paragraph 30(a). Such proposal will be approved if EPA determines that the alternate technology will achieve an annual average of daily NO_X concentrations of less than or equal to 70 ppmvd (at 0% oxygen). EPA shall provide a response to Koch within 90 days of submission.

38. After the installation and startup of the combined technology or alternative technology, EPA and Koch, in consultation with the appropriate state agency, will determine the individual NO_X concentration limits for the Corpus Christi West, Corpus Christi East, and Pine Bend FCCUs, based on the level of demonstrated performance, process variability, reasonable certainty of compliance, and any other available pertinent information.

C. SO_2 Emission Reductions from FCCUs

Program Summary: Koch shall install advanced pollution control technology for the control of SO_2 emissions from its FCCU unit at Pine Bend, and will comply with interim limits for the reduction of SO_2 emissions until the control technology is implemented. Koch will also perform optimization studies for the wet gas scrubbers at the FCCUs at the Corpus Christi West and East refineries, and limit SO_2 emissions from those units consistent with the results of the study.

39. No later than the end of the next scheduled t/a in 2003 of the Pine Bend FCCU, Koch shall reduce SO_2 emissions from the Pine Bend FCCU and achieve an SO_2 concentration of 25 ppmvd (at 0% oxygen) on an annual average basis. Koch shall also meet a limit of 50 ppmvd (at 0% oxygen) on a 7-day average identical to the averaging period used in NSPS Subpart J. Koch may elect any means for attaining these reductions.

40. If Koch is unable to install equipment, or make the changes necessary to achieve the annual average of 25 ppmvd (at 0% oxygen) level of SO_2 reduction during the next scheduled t/a for the Pine Bend FCCU in 2003, then Koch shall meet this limit by the end of 2007, and shall meet interim SO_2 limits of 100 ppmvd (at 0% oxygen) in the flue gas on an annual average basis during the period between the next scheduled t/a and 2007.

41. Koch shall demonstrate compliance with either the 25 ppmvd (at 0% oxygen) or 100 ppmvd (at 0% oxygen) interim limits on a rolling annual average of daily SO_2 concentrations.

42. Koch shall demonstrate the reductions through continued operation of a CEMS for SO_2 on all 3 FCCUs.

43. No later than July 31, 2001, for the FCCUs at Corpus Christi West and East, and within one year of startup of the control technology at Pine Bend, Koch shall begin optimization studies on the existing Corpus Christi West and East FCCU wet gas scrubbers ("WGS") and the selected control technology at Pine Bend. Koch will submit a proposed protocol for the optimization studies to EPA for review and comment no later than 90 days prior to beginning the proposed study. The proposed protocol shall include, at a minimum (where

applicable): pH, scrubbing liquor circulation rate, liquid-to-gas ratio, where applicable, and propose for EPA approval the frequency for monitoring of WGS inlet SO2 concentrations. Koch shall submit to EPA a report on the optimization studies within 15 months of startup for Pine Bend and by October 31, 2002, for Corpus Christi East and West, and use the results of these optimization studies to propose to EPA new SO_2 concentration limits for the Corpus West, Corpus East, and Pine Bend FCCUs.

44. Koch will agree to reduce its SO_2 concentrations to levels demonstrated in each of the optimization studies, if the study supports that reductions are technologically feasible and not cost prohibitive. EPA, in consultation with Koch and the appropriate state agency, will determine the SO_2 concentration limits based on the level of demonstrated performance during the test period, process variability, reasonable certainty of compliance, and any other available pertinent information. For purposes of this Paragraph, the cost for further SO_2 reductions is prohibitive if it exceeds $10,000 per ton of pollutant removed.

45.(A). Koch agrees that all of its heaters and boilers and all of its fluid catalytic cracking unit catalyst

regenerators are affected facilities for each pollutant regulated under NSPS Subpart J and subject to all of the applicable requirements of NSPS Subpart J, and will be in compliance for those units (heaters, boilers, and fluid catalytic cracking unit catalyst regenerators) by January 1, 2001, except as noted below:

(i) With regard to SO2 emissions (H2S inlet concentration) from heater 02BA201 at the Corpus Christi West Refinery and heater E0310F101 at the Corpus Christi East Refinery; opacity from the Corpus Christi West FCCU catalyst regenerator; and SO2 emissions (H2S inlet concentration) from heaters 27H-1 and 37H-3, 4, 5 at the Pine Bend Refinery, Koch has already submitted, or will submit by February 28, 2001, Alternative Monitoring Plan(s) ("AMP"), as specified in 40 C.F.R. § 60.13. If EPA approves an AMP, Koch will comply with Subpart J for that heater or FCCU within 6 months of such final approval, unless an earlier date is required by EPA. If EPA denies the AMP, Koch may elect to either: (a) install an H2S analyzer within 18 months of the denial; or (b) submit a revised AMP within 6 months of the denial, unless EPA requires Koch to install an H2S analyzer.

(ii) With regard to S02 emissions (H2S inlet concentration) from heater E23H201A at the Corpus Christi East

Refinery; and boilers 17H2 and 17H4 at the Pine Bend Refinery, Koch will be in full compliance with Subpart J by December 31, 2003.

45. (B). Koch will continue to calibrate, maintain and operate SO2, NOx, CO and O2 CEMS to continuously monitor air emissions from the Corpus Christi East and West, and Pine Bend FCCUs.

45.(C) All CEMS installed and operated pursuant to this agreement will be calibrated, maintained, and operated in accordance with the applicable requirements of 40 CFR §§ 60.11 and 60.13. These CEMS will be used to demonstrate compliance with emission limits pursuant to 40 CFR § 60.13(a) and shall be subject to the requirements of 40 CFR Part 60, Appendix F, with the following exception: Koch will not be required to conduct a Relative Accuracy Test Audit (RATA) once every four quarters, as specified in Sections 5.1.1 and 5.1.4 of Appendix F. Instead, a Cylinder Gas Audit (CGA) will be conducted each quarter. In addition, a Relative Accuracy Audit (RAA), as per Section 5.1.3 of Appendix F, shall be conducted (in lieu of a CGA) one quarter every three years. Koch may elect to conduct a RATA in lieu of this RAA.

D. Credit for Emissions Reductions

46. Except as specifically provided in this Section, Koch may not use any credits resulting from the emissions reductions required by this Consent Decree in any emissions banking, trading, or netting program for PSD, major non-attainment NSR, and minor NSR. The terms defined in this Section are for purposes of this Consent Decree only, and may not be used or relied upon by Koch or any other entity, including any party to this Consent Decree, for any other purpose, in any subsequent permitting action.

47. For purposes of this Section and the provisions of this Consent Decree only, "netting units" shall mean those sources specified below that have been or will be upgraded to the following control levels for the defined pollutants:

(a.) FCCU NO_X - The Corpus Christi East and West FCCUs and Pine Bend FCCU will be considered netting units for NO_X upon Koch's demonstration that the units have achieved emissions levels less than 70 ppmvd (at 0% oxygen) as required by Part IV, Section B of this Consent Decree;

(b.) FCCU SO_2 – The Corpus Christi East and West FCCUs are considered netting units for SO_2 at the time of lodging of this Consent Decree. The Pine Bend FCCU will be considered a netting unit for SO_2 upon Koch's demonstration that it has achieved the final SO_2 emission levels required by Part IV, Section C of this Consent Decree;

(c.) Sulfur Recovery Plants ("SRPs") – All SRPs at the Corpus Christi East, West, and Pine Bend refineries are

considered netting units at the time of lodging of this Consent Decree; and

(d.) Heaters and boilers - All heaters and boilers with a capacity smaller than 40 mmBTU/hr; all heaters and boilers with a capacity greater than or equal to 40 mmBTU/hr that are or will be equipped with current or next generation ULNB as defined in Part IV, Section A of this Consent Decree; all heaters and boilers with a capacity greater than or equal to 40 mmBTU/hr which are controlled to a level less than or equal to 0.045 lb NO_X/mmBTU (HHV) maximum allowable emissions are considered netting units upon their demonstration of compliance with the terms of this Consent Decree.

Units which have not met the definition of netting units may not use any credits generated under this Consent Decree.

48. All future heaters and boilers with next generation ULNB which are firing fuel gas meeting the NSPS Subpart J H2S limit of 0.1 gr/dscf. shall be defined as netting units for purposes of this Section.

49. Heaters and boilers with a capacity of greater than or equal to 40 mmBTU/hr that Koch upgrades with current generation ULNB but do not achieve an allowable NO_X emission rate of less than or equal to 0.045 lb/mmBTU (HHV) at full rates, as determined by the initial stack test with allowance made for operational factors, will be considered as a “try and fail” modification.

50. Koch may average these “try and fail” units in with the technologically infeasible group (see Paragraph 14), but

may not consider them as part of this group for purposes of the exemptions in Paragraphs 17 and 52, or Koch may submit a written request to EPA for a specific source netting unit determination pursuant to this Section.

51. Koch's request for a netting unit determination under this Section shall contain stack test data, an explanation of why the source was not able to accept an allowable NO_X emission rate of less than or equal to 0.045 lb NO_X/mmBTU (HHV), and a discussion of other control options considered. EPA shall consider efforts made by Koch to meet the 0.045 lb NO_X/mmBTU (HHV) level and provide a determination or request additional information within 90 calendar days from the date Koch's request is received. Upon EPA's written approval or if EPA has not requested additional information within 90 days, the source will be a netting unit for purposes of this Section.

52. Koch may designate up to three (3) heaters and boilers at Pine Bend, and three (3) heaters and boilers in the combined Corpus Christi East and West refineries which fall into the "technologically infeasible" category as netting units under this Section.

E. Emission Credit Generation and Classification

Program Summary: The emissions credit and netting limitations discussed below only apply to the netting units defined in this Section, and only to NO_X and SO_2 emissions. All other emission sources of NO_X and SO_2, and any netting associated with other pollutants, are outside the scope of these netting limitations and are subject to PSD/NSR applicability as implemented by the appropriate permitting authority or EPA. Emission reductions subject to this revised netting policy are only those reductions generated by installation of controls on sources defined as netting units in Section D and those reductions discussed further in Part IX. The provisions of this Section are for purposes of this Consent Decree only, and may not be used or relied upon by Koch or any other entity, including any party to this Consent Decree, for any other purpose, in any subsequent permitting or enforcement action.

53. For purposes of this Section, "emission reductions" are defined as the difference between the previous 2-year actual emissions or another more representative 2-year period (as defined pursuant to 40 C.F.R. § 52.21) and the future allowable emissions, as determined by the state permitting authority, after installation of controls.

54. Emission reductions generated by Koch, pursuant to this Consent Decree, will be allocated into two categories for future netting credit, "actual credits" and "allowable credits." The allocation of the emission reductions will be based on the source type and emission level achieved as described below. Emissions reductions from changes made by

Koch that are not required by this Consent Decree can be used for netting as described in 40 C.F.R. § 52.21 and as otherwise allowed under any applicable state or local regulation.

55. Use of credits generated through changes to, or the shutdown of, Pine Bend heaters 11H-3, 11H-4, 11H-5, 12H-4 and 16H-1 will not be restricted under this decree.

56. Emission reductions generated by Koch at heaters and boilers firing more than 40 mmBTU/hr(HHV) by the installation of netting unit controls, by completion of certain of the pollution reduction projects discussed in Paragraph 110, by permanent shutdown, or by installation of other controls are subject to the following allocations:

(a.) For SO_2 reductions by limiting fuel oil firing at the Pine Bend refinery to 100,000 barrels per calendar year (see Paragraph 110), as reflected in accepted federally enforceable requirements, Koch shall receive 90% actual credits and 10% allowable credits;

(b.) For NO_X reductions to a level of less than or equal to 0.045 lb NO_X/mmBTU (HHV)on a 3 hour average basis at a maximum firing duty, as determined through accepted federally enforceable limits, Koch shall receive 90% actual credits and 10% allowable credits; and

(c.) For NO_X reductions to a level of less than or equal to 0.02 lb NO_X/mmBTU (HHV) on a 3 hour average basis at maximum firing duty (including permanent shutdown of sources) as determined through federally enforceable limits, Koch shall receive 80% actual credits and 20% allowable credits.

57. Emission reductions generated by Koch at FCCU's by meeting the netting unit definition in Section D above, are subject to the following allocations:

(a.) For SO_2 reductions to a level of less than or equal to 25 ppmvd (at 0% oxygen) on an annual average basis, Koch shall receive 90% actual credits and 10% allowable credits;

(b.) For NO_X reductions to a level of less than or equal to 70 ppmvd (at 0% oxygen) on an annual average basis, Koch shall receive 75% actual credits and 25% allowable credits; and

(c.) For NO_X reductions to a level of less than or equal to 20 ppmvd (at 0% oxygen) on an annual average basis, Koch shall receive 50% actual credits and 50% allowable credits.

58. Koch may use the emission reductions generated by control of sources to the netting unit levels for PSD netting purposes at sources already classified as netting units or sources eligible for netting unit classification, consistent with the netting unit definitions in Part IV, Section D. Koch must make the emissions reductions federally enforceable through then existing mechanisms. Emissions reductions are creditable for 5 years from the date of generation and shall survive the termination of the Consent Decree.

59. For purposes of this Consent Decree, "allowable credits" generated can be used for PSD netting associated with netting units or sources that will later become netting units

as defined and identified in this Consent Decree. Allowable credits can be used in netting calculations without restriction, except that credits may not be used to increase the concentration of the pollutant over agreed-upon levels, i.e., can increase FCCU throughput, air burn, tons/year of SO_2, but cannot use credits to relax the 25 ppmvd (at 0% oxygen) limit to say, 30 ppmvd (at 0% oxygen). Allowable credits can be used for netting units, including: (a) sources increasing their potential-to-emit (PTE); (b) sources with no increase in PTE but with an actual emissions increase; (c) construction of netting unit replacement sources; and (d) construction of netting unit new sources, where both replacement sources and new sources meet the criteria established in Paragraph 47.

60. For purposes of this Consent Decree, where allowable credits are used on heaters or boilers that are increasing their potential to emit SO_2 or NO_X, but have not yet been upgraded to a netting unit, those sources are required to be upgraded to ULNB or an alternate emission reduction technology providing that those units will achieve a NO_X emission rate of less than or equal to 0.045 lb NO_X/mmBTU (HHV), by the time lines specified in Part IV, Section A of this Consent Decree.

61. For purposes of this Consent Decree, “actual credits” generated by Koch can be used for PSD netting associated with netting units or sources that will later become netting units as defined and identified in Part IV, Section D of this Consent Decree. Koch may only use actual credits in netting calculations for those sources with no increase in potential to emit but with an actual emissions increase (as defined pursuant to 40 C.F.R. § 52.21). Where actual credits are used on heaters or boilers that are increasing their actual emissions but have not yet been upgraded to a netting unit, those sources are required to be upgraded to ULNB or an alternate emission reduction technology that will achieve a NO_X emission rate of less than 0.045 lb NO_X/mmBTU (HHV), by the timelines specified in Part IV, Section A of this Consent Decree.

62. Where allowable emissions or federally enforceable limits are referred to in this Consent Decree: (a) for heaters and boilers without CEMS, these limits will be determined as the average of three one-hour stack test runs; (b) for heaters and boilers with CEMS, these limits will be determined on a 3-hour rolling average basis; and (c) for FCCUs, these limits

will be determined on an annual average basis, except where otherwise specified in this Consent Decree.

V. PROGRAM ENHANCEMENTS RE: BENZENE WASTE NESHAP

Program Summary: Koch agrees to undertake the following measures to minimize or eliminate fugitive benzene waste emissions at its refineries. Unless otherwise stated, all actions will commence on January 1, 2001.

63. In addition to the provisions set forth below, the Corpus Christi West and Pine Bend refineries shall continue to comply with the compliance option set forth at 40 C.F.R. § 61.342(c), utilizing the exemptions set forth in 40 C.F.R. § 61.342(c)(2) and (c)(3)(ii) ("2Mg compliance option"), and the Corpus Christi East refinery shall continue to comply with the compliance option set forth at 40 C.F.R. § 61.342(e) ("6BQ compliance option"). Koch agrees that during the life of the Consent Decree, its Corpus Christi East refinery will not switch to the 2Mg compliance option. The Corpus Christi West and Pine Bend refineries may switch to the 6BQ compliance option by providing notice of this intent prior to the start of the calendar year.

64. Koch will conduct audits of all the laboratories that perform analysis of its benzene waste NESHAP samples to ensure that proper analytical and quality assurance procedures

are followed. By July 1, 2001, Koch will conduct the audits of the laboratories used by one of its refineries, and will complete audits for the remaining two refineries by December 31, 2001. Koch shall conduct subsequent laboratory audits every 2 years, or prior to using a new lab for benzene analysis, during the life of this Consent Decree.

65. Koch shall continue its annual program of reviewing process information, including but not limited to construction projects, to ensure that all benzene waste streams are included in each refinery's inventory.

66. Beginning January 1, 2001, Koch will conduct quarterly sampling and analysis of the following uncontrolled benzene waste streams:

(a.) For refineries complying with the 6BQ compliance option, all uncontrolled waste streams that contributed greater than 0.03 Mg to the previous year's TAB calculation shall be sampled once per calendar quarter, with at least 30 days between samples;

(b.) For refineries complying with the 2Mg compliance option, all uncontrolled waste streams that contributed greater than 0.1 Mg to the previous year's TAB calculation and that qualify for the exemption under 40 C.F.R. § 61.342(c)(2) shall be sampled once per calendar quarter, with at least 30 days between samples; and

(c.) For refineries complying with the 2Mg compliance option, all uncontrolled waste streams, other than those qualifying for the exemption found in 40 C.F.R. § 61.342(c)(2), that contributed greater than 0.03 Mg to

the previous year's TAB calculation shall be sampled once per calendar quarter, with at least 30 days between samples.

67. Beginning with the first full calendar year following lodging of this Consent Decree, Koch shall verify annually in the report required to be submitted under 40 C.F.R. § 61.357(d)(2) whether there has been a change in the control status of all of the following types of waste streams:

(a.) Slop oil;
(b.) Tank water draws;
(c.) Spent caustic;
(d.) Desalter rag layer dumps;
(e.) Desalter vessel process sampling points; and
(f.) Other sample wastes.

68. Koch shall comply with the following measures at all locations where carbon canisters are utilized as a regulated control device under the Benzene Waste NESHAP.

(a.) By December 31, 2001, Koch shall install primary and secondary carbon canisters and operate them in series;

(b.) Koch shall continue to measure breakthrough at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d);

(c.) For a single canister system, breakthrough shall be defined as a condition where the outlet of the canister is >100 ppmv VOC or >20 ppmv benzene, and the canister is providing a reduction of <98% VOC or <99% benzene. For a primary and secondary canister system, breakthrough shall be defined as a condition where the outlet of the primary canister is >100 ppmv VOC or >20 ppmv benzene, and the

primary canister is providing a reduction of <95% VOC or <98% benzene; and

(d.) Koch shall replace existing carbon with fresh carbon immediately when carbon breakthrough is detected, in accordance with 40 C.F.R. § 61.354(d). Immediately shall be considered as within 24 hours upon determination of breakthrough for a primary and secondary canister system and within 8 hours for a single canister system.

69. Koch shall continue to review all spills within the refinery to determine if benzene waste was generated. Koch shall continue to account for all benzene wastes generated through spills that are not managed solely in controlled waste management units in its annual calculation against the 6 BQ or 2 Mg compliance option as applicable.

70. Koch shall continue to manage all groundwater remediation conveyance systems in accordance with the applicable control requirements of the Benzene Waste NESHAP.

71. Beginning with the first full calendar quarter commencing January 1, 2001, Koch shall implement the following compliance measures at all refineries:

(a.) Koch shall conduct monthly visual inspections of all water traps within its individual drain systems that are subject to the Benzene Waste NESHAP;

(b.) Koch shall continue to control all slop oil recovered from its oil/water separators, sewer systems, etc., until recycled or put into a feed tank, if not already counted toward the uncontrolled total;

(c.) Koch shall develop and implement training for all technicians required to take benzene waste samples;

(d.) Koch shall continue to provide the person(s) within each refinery responsible for overseeing the benzene waste program access to real-time benzene waste process monitoring information related to control equipment;

(e.) Koch shall continue to make real-time benzene waste process monitoring information related to control equipment available electronically to the operator(s) responsible for benzene waste systems in each refinery; and

(f.) Koch shall identify/mark all area drains that are segregated stormwater drains by December 31, 2001.

72. By December 31, 2001, Koch shall evaluate each of the following projects at each refinery, including, but not limited to, each project's feasibility (including estimated costs, where appropriate):

(a.) Installation of closed loop sampling devices on all waste and process streams that are greater than 10 ppmw benzene;

(b.) Installation of new Benzene Waste NESHAP waste sample points at all locations where routine sampling points are not easily accessible; and

(c.) Implementation of the 6 BQ option, which allows for more straight forward, end of the line sampling, at the Corpus Christi West and Pine Bend refineries, for demonstrating compliance with the Benzene Waste NESHAP.

Recordkeeping and Reporting Requirements for Part V

73. As part of the overall progress reports submitted pursuant to Part XI (General Recordkeeping and Reporting), Koch shall include the following information:

(a.) with respect to the initial lab audits, Koch shall include information listing the steps it has taken to implement Paragraph 64 (initial lab audits). After completion of the initial lab audits, Koch's final progress report on this requirement shall include any corrective actions taken as a result of each audit;

(b.) With respect to carbon canister installation, Koch shall include information listing the steps it has taken to implement Paragraph 68(a) (carbon canister installation). After installation of the carbon canisters is complete, Koch's final progress report on this requirement shall include a listing of all locations within the refinery where secondary canisters were placed in service;

(c.) in its first progress report after the first quarter of 2001, Koch shall submit a certification that the training program required by Paragraph 71(c) has been developed and initiated; and

(d.) in its first progress report filed after completing each project evaluation required by Paragraph 72, Koch shall summarize the results of the evaluations, any future plans for action, including, at a minimum, the feasibility of each project, and any reasons why Koch may have elected not to proceed with the project.

74. Beginning with the first full calendar quarter commencing January 1, 2001, Koch shall submit to the appropriate state and EPA office, the following information

for each of its refineries as part of the report required by 40 C.F.R. § 61.357(d)(7):

(a.) The results of the quarterly sampling conducted pursuant to Paragraphs 66(a) through 66(c), above, if sampling results are available. If certain sampling results are not available prior to submitting the report for that quarter, such results shall be submitted with the next quarter's report;

(b.) Koch shall use the quarterly sampling results pursuant to Paragraph 66 and the previous year's annual report (for unsampled waste streams) to estimate projected quarterly and calendar year values against the 6BQ or 2Mg compliance option;

(c.) If the estimated quarterly calculation for any refinery made pursuant to Paragraph 74(b), above, exceeds 0.5 Mg for refineries complying with the 2 Mg compliance option or 1.5 Mg for refineries complying with the 6 BQ compliance option, or if the projected annual calculation for any refinery made pursuant to this Paragraph exceeds 2 Mg for refineries complying with the 2 Mg compliance option, or 6 Mg for refineries complying with the 6 BQ compliance option, Koch shall include a summary of the activities planned to minimize benzene wastes at the refinery, or a discussion of why no activity is necessary to ensure that the calendar year calculation complies with the Benzene Waste NESHAP. For purposes of this subParagraph, Koch will use best available data, but may have better information available when it submits the annual reports required by 40 C.F.R. § 61.357(d)(2); and

(d.) Koch shall identify all labs used during the quarter for analysis of benzene waste samples and identify when Koch's most recent audit of each lab occurred.

VI. PROGRAM ENHANCEMENTS RE: LEAK DETECTION AND REPAIR

Program Summary: Koch agrees to undertake the following measures regarding leak detection and repair ("LDAR") at its refineries in accordance with the following schedule. Unless

otherwise stated, the Corpus Christi East and West refineries will be considered as one LDAR program for purposes of this Agreement. Unless otherwise stated, all actions will commence on January 1, 2001.

75. By no later than December 31, 2001, Koch shall develop a written refinery-wide program for LDAR compliance for each refinery. These programs shall include, at a minimum: an overall refinery-wide leak rate goal (to be applied unit-by-unit), procedures for identifying leaking components, and procedures for identifying and including new components in the LDAR program. As set forth below, certain elements of the program will be enforceable by EPA, and Koch will implement other management-type elements on an enforceable schedule, but the elements themselves will not be enforceable against Koch under the terms of this Consent Decree. Koch will implement this program according to the schedules specified in the Paragraphs below.

76. By no later than December 31, 2002, Koch's LDAR programs shall be implemented refinery-wide, including all components within all areas that are owned and maintained by the refineries. As referenced in this Section, "components" shall mean applicable regulated equipment as defined in 40

C.F.R. Part 60, subpart VV, and 40 C.F.R. Part 63, subparts H and CC, excluding the definition of “process unit.”

77. By no later than December 31, 2001, Koch shall develop and begin implementing the following training programs at each refinery:

(a.) For new LDAR personnel, Koch shall provide and require LDAR training prior to the employee beginning work in the LDAR group;

(b.) For all LDAR personnel, Koch shall provide and require completion of annual LDAR training; and

(c.) For all other refinery operations personnel, Koch shall provide and require annual review courses for LDAR monitoring.

78. Koch shall implement the following audit programs (the Corpus Christi refineries will be audited as one LDAR program) focusing on comparative monitoring, records review and observation of the LDAR technicians’ actual calibration and monitoring techniques:

(a.) Koch shall conduct biennial internal audits of each refinery’s LDAR program. These audits will be conducted by sending representative LDAR personnel from one Koch refinery to the other. One refinery will have its first audit during the first full calendar year after the Consent Decree is lodged. The other refinery will conduct its first audit no later than the following calendar year; and

(b.) Koch agrees to have a third party audit each refinery's LDAR program at least twice during the overall life of the Consent Decree.

79. By December 31, 2002, Koch shall implement an internal leak definition of 500 ppmv for all valves, and 2000 ppmv for all pumps. Koch may continue to report leak rates against the regulatory leak definition, or may elect to use the lower leak rate definition for reporting purposes.

80. Beginning January 1, 2001, Koch shall require LDAR personnel to make a "first attempt" at repairing any valve that has a reading above 50 ppmv, excluding control valves and other components that LDAR personnel are not authorized to repair. Koch will only record, track and remonitor leaks above Koch's internal leak definition.

81. Koch shall implement a program of more frequent monitoring by December 31, 2002, for all valves by choosing one of the following options on a process unit by process unit basis:

(a.) Quarterly monitoring with no ability to skip periods. This option cannot be chosen for process units subject to the HON or the modified-HON option in the Refinery MACT;

(b.) Implementation of a Sustainable Skip Period Program as set forth in Attachment 1 to this Consent Decree;

(c.) Units that have already utilized a skip leak interval with a leak definition as listed in Paragraph 79, are not required to return to a more frequent monitoring interval upon application of the Sustainable Skip Period Program as of December 31, 2002, but shall immediately be subject to the requirements of the program on a going forward basis; and

(d.) Units that have not utilized the 500 ppmv leak definition prior to December 31, 2002, shall enter the program on a quarterly frequency, unless their current interval is shorter.

82. For process units complying with the Sustainable Skip Period Program in Attachment 1, Koch shall use the leak rate determined during an EPA or State inspection to require more frequent monitoring, if appropriate. Koch will utilize the more frequent monitoring program beginning at the start of the next calendar month, provided that if Koch is obligated under applicable regulations to complete its monitoring program for the prior monitoring period and if additional time is required to make the transition, EPA and Koch will agree on a later date to move to the more frequent period. The leak rate determination during EPA or state inspections shall be made based on the total number of leaking valves identified during the inspection divided by the total number of valves in the process unit that Koch uses

to determine the leak rates, rather than the total number of valves monitored during the inspection.

83. Beginning July 1, 2001, Koch shall use dataloggers and/or electronic data storage for LDAR monitoring. Koch can use paper logs where necessary or more feasible (i.e. small rounds, remonitoring when dataloggers are not available or broken, inclement weather, etc).

84. By December 31, 2001, Koch shall have developed standards for new equipment (i.e., pumps, relief valves, sample connections, other valves) it is installing to minimize potential leaks. Koch will also make use of improved equipment, such as “leakless” valves for chronic leakers, where available, technically feasible, and economically reasonable.

85. If, during the life of this Consent Decree, Koch completely subcontracts its LDAR program at any of its refineries, Koch shall require its LDAR contractors to conduct a QA/QC review of all data before turning it over to Koch and to provide Koch with daily reports of its monitoring activity.

86. By December 31, 2001, Koch shall have established a program that will hold LDAR personnel accountable for the

quality of monitoring and an overall refinery program to provide incentives for leak rate improvements.

87. Koch shall continue to maintain a position within the refinery (or under contract) responsible for LDAR coordination, with the authority to implement these and other recommended improvements.

88. By December 31, 2001, Koch shall have established a tracking program for maintenance records to ensure that components added to the refinery during maintenance and/or construction are added to the LDAR program.

89. Koch shall have the option of monitoring all components within a process unit within 30 days after the startup of the process unit after the turnaround without having the results of the monitoring used in the leak rate determination. Process unit t/a's are considered those activities that are planned on a typical 2-4 year cycle that require a complete unit shutdown.

90. Beginning January 1, 2001, Koch will conduct calibration drift assessments of the LDAR monitoring equipment in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21 at the end of each monitoring shift, at a minimum. Koch agrees that if any calibration drift

assessment after the initial calibration shows a negative drift of more than 10%, it will remonitor all components since the last calibration that had readings above 50 ppmv.

91. Beginning the first calendar quarter following lodging of this Consent Decree, but no sooner than January 1, 2001, for valves that meet the regulatory requirements to be put on the "delay of repair" list for repair,

(a.) Koch shall require sign-off by the PL (unit foreman) or equivalent or higher authority before the component is eligible for the "delay of repair" list;

(b.) Koch shall set a leak level of 50,000 ppmv at which it will undertake “heroic” efforts to fix the leak rather than put the valve on the “delay of repair” list, unless there is a safety or major environmental concern posed by repairing the leak in this manner. For valves, heroic efforts/repairs shall be defined as non-routine repair methods, such as the drill and tap;

(c.) Koch shall include valves that are placed on the “delay of repair” list in its regular LDAR monitoring, and make “heroic” repair efforts, unless there is a safety or major environmental concern posed by repairing the leak in this manner, if leak reaches 50,000 ppmv; and

(d.) After April 1, 2001, Koch shall undertake heroic efforts to repair valves that have been on the "delay of repair" list for a period of longer than 36 months, unless there is a safety or major environmental concern posed by repairing the leak in this manner.

Recordkeeping and Reporting Requirements For Part VI

92. As part of the progress report submitted pursuant to Part XI, Koch shall submit the following information:

(a.) As part of the first progress report required to be submitted after December 31, 2001, Koch shall include a copy of the written LDAR program for each refinery developed pursuant to Paragraph 75;

(b.) In the first progress report due after the training program required by Paragraph 77 has been implemented at each refinery, Koch shall submit a certification that the training has been implemented;

(c.) In its first progress report due under this Consent Decree, Koch shall submit a certification that the first attempt repair program as described in Paragraph 80 has been implemented;

(d.) As part of the first progress report required to be submitted after July 1, 2001, Koch shall submit a status report on the use of dataloggers and/or electronic data storage for data monitoring as required by Paragraph 83;

(e.) In the first progress report submitted after December 31, 2001, Koch shall include a description of the equipment standards developed pursuant to Paragraph 84;

(f.) As part of the first progress report submitted after December 31, 2001, Koch shall include a description of the accountability/incentive programs that are developed pursuant to Paragraph 86;

(g.) As part of the first progress report submitted after December 31, 2001, Koch shall include a description of the maintenance tracking program developed pursuant to Paragraph 88;

(h.) As part of its first progress report required by this Consent Decree, Koch shall submit a certification that it has implemented the calibration drift assessments described in Paragraph 90; and

(i.) As part of its first progress report required by this Consent Decree, Koch shall include a certification

that it has implemented the "delay of repair" requirements described in Paragraph 91.

93. Koch shall maintain the audit results from Paragraph 78 and any corrective action implemented. The audit results shall be made available to the EPA and State authorities upon request.

94. As part of the semiannual monitoring reports required by 40 C.F.R. Part 63, Subparts H or CC, Koch shall provide a listing of those units that became subject to the program described in Paragraph 81 during the reporting interval. This report shall include the projected date of the next monitoring frequency for each process unit.

VII. PROGRAM ENHANCEMENTS RE: NSPS SUBPARTS A AND J SULFUR DIOXIDE EMISSIONS FROM SULFUR RECOVERY PLANTS ("SRP") AND FLARING DEVICES

PROGRAM SUMMARY: Upon the lodging of this Consent Decree, Koch agrees to take the following measures, identified in this Section at all five of its Claus SRPs and certain flaring devices at its 3 refineries. Koch is committed to the goal of eliminating all reasonably preventable SO_2 emissions from flaring. Koch has taken a number of effective steps to reduce the frequency and duration of Flaring Incidents and to improve the refineries' sulfur recovery performance. Koch is also committed to extending the duration between SRP unscheduled and scheduled maintenance shutdowns to three years or greater.

95. DEFINITIONS: Unless otherwise expressly provided herein, terms used in this Part shall have the meaning given

to those terms in the Clean Air Act, 42 U.S.C. §§ 7401 et seq., and the regulations promulgated thereunder. In addition, the following definitions shall apply to the terms contained within Part VII of this Consent Decree:

(a.) "Acid Gas" shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine scrubber solution;

(b.) "AG Flaring" shall mean, for purposes of this Consent Decree, the combustion of Acid Gas and/or Sour Water Stripper Gas in a Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Decree of Acid Gas or Sour Water Stripper Gas;

(c.) "AG Flaring Device" shall mean any device at the Refinery that is used for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid. The combustion of Acid Gas and/or Sour Water Stripper Gas occurs at the following locations:

(i) Pine Bend - one dedicated sour water stripper gas flare and the refinery main flare system
(ii) Corpus Christi West - acid gas flare
(iii) Corpus Christi East - acid gas flare

To the extent that the refinery utilizes Flaring Devices other than those specified herein for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those Flaring Devices shall be covered under this Decree.

(d.) "AG Flaring Incident" shall mean the continuous or intermittent flaring/combustion of Acid Gas and/or Sour Water Stripper Gas that results in the emission of sulfur dioxide equal to, or greater than five-hundred (500) pounds in a twenty-four (24) hour period; provided, however, that if five-hundred (500) pounds or more of

sulfur dioxide have been emitted in a twenty-four (24) hour period and Flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five-hundred (500) pounds of sulfur dioxide, then only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the AG Flaring Incident.

(e.) "Day" shall mean a calendar day.

(f.) "Hydrocarbon Flaring" shall mean, for purposes of this Consent Decree, the combustion of refinery process gases, except for Acid Gas, Sour Water Stripper Gas, and/or Tail Gas, in a Hydrocarbon Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Decree.

(g.) "Hydrocarbon Flaring Device" shall mean a flare device used to safely control (through combustion) any excess volume of a refinery process gas other than Acid Gas, Sour Water Stripper Gas, and/or Tail Gas. The subject Hydrocarbon Flaring Devices are:

(i) Pine Bend - the refinery main flare system
(ii) Corpus Christi West - the refinery main flare system
(iii) Corpus Christi East - 36" Flare

To the extent that a refinery utilizes Flaring Devices that are functionally equivalent and are in the same service as those specified above, those Flaring Devices shall be covered under this Decree.

(h.) "Hydrocarbon Flaring Incident" shall mean the continuous or intermittent flaring of refinery process gases, except for Acid Gas, Sour Water Stripper Gas, or Tail Gas, at a Hydrocarbon Flaring Device equipped with a flare gas recovery system, that results in the emissions of sulfur dioxide equal to, or greater than five-hundred

(500) pounds in a twenty-four (24) hour period (the 500 pound sulfur dioxide trigger will be determined on the amount of sulfur dioxide emissions above the flare permitted emission limit); provided, however, that if five-hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and Flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five-hundred (500) pounds of sulfur dioxide, then only one Hydrocarbon Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the Hydrocarbon Flaring Incident.

(i.) "Malfunction" shall mean any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(j.) "Root Cause" shall mean the primary cause of an AG Flaring Incident, Hydrocarbon Flaring Incident, or a Tail Gas Incident, as determined through a process of investigation; provided, however, that if any such Incident encompasses multiple releases of sulfur dioxide, the "Root Cause" may encompass multiple primary causes.

(k.) "Scheduled Maintenance" of an SRP shall mean any shutdown of an SRP that Koch schedules at least ten (10) days in advance of the shutdown for the purpose of undertaking maintenance of that SRP.

(l.) "Shutdown" shall mean the cessation of operation of an affected facility for any purpose.

(m.) "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the process of stripping or scrubbing refinery sour water.

(n.) "Startup" shall mean the setting in operation of an affected facility for any purpose.

(o.) "Sulfur Recovery Plant" shall mean the devices at Koch's Refinery identified as:

(i). Pine Bend: "Unit 45"(SRUs-3&4) and Unit 26 (SRU-5);

(ii). Corpus Christi West: "SRU#1" and "SRU#2";

(iii). Corpus Christi East, "East SRU".

(p.) “Tail Gas” shall mean exhaust gas from the Claus trains and/or the tail gas treating unit (“TGTU”) section of the SRP;

(q.) “Tail Gas Incident” shall mean, for the purpose of this Consent Decree, combustion of Tail Gas that either:

i) is combusted in a flare and results in 500 pounds of sulfur dioxide emissions in a 24 hour period; or

ii) is combusted in a monitored incinerator and the amount of sulfur dioxide emissions in excess of the 250 ppm limit on a rolling twenty-four hour average exceeds 500 pounds.

(r.) "Upstream Process Units" shall mean all amine contactors, amine scrubbers, and sour water strippers at the refinery, as well as all process units at the refinery that produce gaseous or aqueous waste streams that are processed at amine contactors, amine scrubbers, or sour water strippers.

96. SRP NSPS SUBPART A and J APPLICABILITY:

(a.) With respect to all five of Koch's Claus Sulfur Recovery Plants at its three refineries, they are subject to and will continue to comply with the applicable provisions of NSPS Subpart A and J.

(b.) Koch agrees that all emission points (stacks) to the atmosphere for tail gas emissions from each of its Claus Sulfur Recovery Plants will continue to be monitored and

reported upon as required by 40 C.F.R. §§ 60.7(c), 60.13, and 60.105(a)(5). This requirement is not applicable to the AG Flaring Devices identified in Paragraph 95(c).

(c.) Koch will continue to route all SRP sulfur pit emissions such that they are monitored and included as part of the SRP's emissions that are compared to the NSPS Subpart J limit for SO_2, a 12-hour rolling average of 250 ppmvd SO_2 at 0% oxygen, as required by 40 C.F.R. § 60.104(a)(2).

(d.) Koch will continue to conduct SRP emissions monitoring with CEMS at all of the emission points unless a sulfur dioxide alternative monitoring procedure has been approved by EPA, per 40 C.F.R. § 60.13(i), for any or all of the emission points.

(e.) For the purpose of determining compliance with the SRP emission limits, Koch shall apply the start-up shutdown provisions set forth in NSPS Subpart A to the Claus Sulfur Recovery Plant and not to the independent start-up or shut-down of its corresponding control device(s) (e.g. TGTU). However, the malfunction exemption set forth in NSPS Subpart A does apply to both the Claus Sulfur Recovery Plant and its control device(s) (e.g., TGTU).

(f.) At Corpus Christi East, by December 31, 2003, Koch will ensure that the Sour Water Stripper Tank off-gas is either removed from the SRP incinerator or independently controlled and monitored to meet NSPS Subpart J emission limit at 40 C.F.R. §60.104(a)(1).

97. SULFUR RECOVERY PLANT OPTIMIZATION:

(a.) Koch stipulates that it has performed and will continue to perform system reliability and optimization studies, utilizing Reliability Centered Maintenance (RCM) protocols, on its SRP's at all three refineries. The RCM protocols are being used to optimize the performance of the Claus train for the actual characteristics of the feed to the SRP.

(b.) Koch has reviewed AG Flaring Incidents which occurred over the past four (4) years on a refinery by refinery basis. The information gained from these reviews was used to help ensure that the reliability studies focused on all known potential causes of AG Flaring due to the design, operation and maintenance of the SRPs, and to ensure that any historically identified corrective actions have been or will be implemented for addressing those causes.

(c.) Koch stipulates that it has performed a Root Cause Failure Analysis (RCFA) of the recent AG Flaring Incidents at all three refineries, identified causes of AG Flaring, and has implemented or is in the process of identifying and implementing corrective actions to minimize the number and duration of AG Flaring events attributable to problems within the SRP.

98. FLARING. By March 31, 2001, Koch shall, at the 3 refineries, implement procedures for evaluating whether future AG Flaring Incidents, Hydrocarbon Flaring Incidents, and Tail Gas Incidents are due to malfunctions. The procedures require root cause analysis and corrective action for all types of flaring and stipulated penalties for AG Flaring Incidents or Tail Gas Incidents if the root causes were not due to malfunctions.

99. HYDROCARBON FLARING. Koch and EPA stipulate for purposes of this Consent Decree that its main refinery flares at its 3 refineries are subject to NSPS Subpart J as fuel gas combustion devices in addition to being emergency control devices for quick and safe release of malfunction gases. Koch

and EPA also stipulate that the best way to ensure compliance with those flares' NSPS obligations is through implementation of good air pollution control practices for minimizing flaring activity, as required by 40 C.F.R. §60.11(d), and not through monitoring of compliance with 40 C.F.R. §60.104(a)(1). EPA and the Minnesota Pollution Control Agency ("MPCA") agree that Koch's operation of its refineries in conformance with Koch's Flare Policy, Attachment 2, ensures that Hydrocarbon Flaring is not subject to the emission limitation, monitoring or other requirements for refinery fuel gas found in 40 C.F.R. §§ 60.100 - 60.109. Koch shall implement the following additional mitigation measures:

(a.) For Hydrocarbon Flaring at Pine Bend and Corpus Christi West, Koch shall continue to operate and maintain the flare gas recovery systems and investigate, report and correct the cause of flaring in accordance with the procedures in Koch's Flare Policy, Attachment 2 to this Consent Decree.

(b.) For Hydrocarbon Flaring at Corpus Christi East, by December 31, 2003, Koch shall install a flare gas recovery system and then operate and maintain the flare gas recovery system. By January 7, 2004, Koch shall begin to investigate, report and correct the cause of the Hydrocarbon Flaring Incidents in accordance with the procedures in Koch's Flare Policy.

100. TAIL GAS INCIDENTS. For Tail Gas Incidents, Koch shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as outlined in Paragraph 101 for Acid Gas Flaring. Those procedures shall be applied to TGTU shutdowns, bypasses of a TGTU, unscheduled shutdowns of a SRP or other miscellaneous unscheduled SRP events which result in a Tail Gas Incident as defined in Paragraph 95 (q), with the exceptions that the provisions of Paragraph 101(c)(ii)(A) would not apply to a Tail Gas Incident and Tail Gas Incidents would not be counted in the tally of Acid Gas Flaring Incidents under Paragraph 101(c)(ii)(B).

101. REQUIREMENTS RELATED TO ACID GAS FLARING.

(a) INVESTIGATION AND REPORTING: No later than thirty (30) days following the end of an AG Flaring Incident or an event identified in Paragraph 100, Koch shall submit a report to the applicable EPA Regional Office and applicable State Agency that sets forth the following:

(i). The date and time that the AG Flaring Incident started and ended. To the extent that the AG Flaring Incident involved multiple releases either within a twenty-four (24) hour period or within subsequent, contiguous, non-overlapping twenty-four (24) hour periods, Koch shall set forth the starting and ending dates and times of each release;

(ii). An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(iii). The steps, if any, that Koch took to limit the duration and/or quantity of sulfur dioxide emissions associated with the AG Flaring Incident;

(iv). A detailed analysis that sets forth the Root Cause and all contributing causes of that AG Flaring Incident, to the extent determinable;

(v). An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of a AG Flaring Incident resulting from the same Root Cause or contributing causes in the future. The analysis shall discuss the alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operational, and maintenance changes shall be evaluated. If Koch concludes that corrective action(s) is (are) required under Paragraph 101(b), the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If Koch concludes that corrective action is not required under Paragraph 101(b), the report shall explain the basis for that conclusion;

(vi). A statement that:

(A) specifically identifies each of the grounds for stipulated penalties in Paragraphs 101(c) of this Decree and describes whether or not the AG Flaring Incident falls under any of those grounds;

(B) describes which Paragraph 101(c)(iii)(A) or (B) applies, and why, if a AG Flaring Incident falls under Paragraph 101(c)(iii) of this Decree; and

(C) states whether or not Koch asserts a defense to the AG Flaring Incident, and if so, a description of the defense if an AG Flaring Incident falls under either Paragraph 101(c)(ii) or Paragraph 101(c)(iii)(B);

(vii). To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 101(a)(iv) and (v) will be submitted; provided, however, that if Koch has not submitted a report or a series of reports containing the information required to be submitted under this Paragraph within 45 days (or such additional time as EPA may allow) after the due date for the initial report for the AG Flaring Incident, the stipulated penalty provisions of Paragraph 103(b) shall apply, but Koch shall retain the right to dispute, under Part XVI (Dispute Resolution) of this Consent Decree, any demand for stipulated penalties that was issued as a result of Koch's failure to submit the report required under this Paragraph within the time frame set forth. Nothing in this Paragraph shall be deemed to excuse Koch from its investigation, reporting, and corrective action obligations under this Part for any AG Flaring Incident which occurs after an AG Flaring Incident for which Koch has requested an extension of time under this Paragraph.

(viii). To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), Koch shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

(b.) CORRECTIVE ACTION: In response to any AG Flaring Incident, Koch, as expeditiously as practicable, shall take such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all contributing causes of that AG Flaring Incident.

(i). If EPA does not notify Koch in writing within sixty (60) days of receipt of the report(s) required by Paragraph 101(a) that it objects to one or more aspects of Koch's proposed corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s) and schedule(s) shall be deemed acceptable for purposes of Koch's compliance with Paragraph 101(b) of this Decree. EPA does not, however, by its agreement to the entry of this Consent Decree or by its failure to object to any corrective action that Koch may take in the future, warrant or aver in any manner that any of Koch's corrective actions in the future will result in compliance with the provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective measures or procedures under this Section, Koch shall remain solely responsible for compliance with the Clean Air Act and its implementing regulations.

(ii). If EPA does object, in whole or in part, to Koch's proposed corrective action(s) and/or its schedule(s) of implementation, or, where applicable, to the absence of such proposal(s) and/or schedule(s), it shall notify Koch of that fact within sixty (60) days following receipt of the report(s) required by Paragraph 101(a) above. If Koch and EPA cannot agree within thirty (30) days on the appropriate corrective action(s), if any, to be taken in response to a particular AG Flaring Incident, either Party may invoke the Dispute Resolution provisions of Part XVI of this Decree.

Nothing in this Paragraph shall be construed as a waiver of EPA's rights under the Act and its regulations for future violations of the Act or its regulations. Nothing in this Paragraph shall be construed to limit Koch's right to take such corrective actions as it deems necessary and appropriate

immediately following an AG Flaring Incident or in the period during preparation and review of any reports required under this Part.

(c). AG FLARING INCIDENTS AND STIPULATED PENALTIES:

(i) The stipulated penalty provisions of Paragraph 103(a) shall apply to any AG Flaring Incident for which the Root Cause was one or more or the following acts, omissions, or events:

(A). Error resulting from careless operation by the personnel charged with the responsibility for the SRPs, TGTUs, or Upstream Process Units;

(B). A failure of equipment that is due to a failure by Koch to operate and maintain that equipment in a manner consistent with good engineering practice.

Except for a Force Majeure event, Koch shall have no defenses to demand for stipulated penalties for a AG Flaring Incident falling under this Paragraph.

(ii) The stipulated penalty provisions of Paragraph 103(a) shall apply to any AG Flaring Incident that either:

(A). Results in emissions of sulfur dioxide at a rate of greater than twenty (20) pounds per hour continuously for three (3) consecutive hours or more; or

(B). Causes the total number of AG Flaring Incidents per refinery in a rolling twelve (12) month period to exceed five (5).

In the event that an AG Flaring Incident falls under both Paragraph 101(c)(i) and (ii), then Paragraph 101(c)(i) shall apply.

(iii) With respect to any AG Flaring Incident other than those identified in Paragraphs 101(c)(i)and 101(c)(ii), the following provisions apply:

(A). First Time: If the Root Cause of the AG Flaring Incident was not a recurrence of the same Root Cause that resulted in a previous AG Flaring Incident that occurred since the effective date of this Decree for the Corpus Christi Refinery East and West, and since May 18, 1998 for Pine Bend Refinery, then:

(1). If the Root Cause of the AG Flaring Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause shall be designated as an agreed-upon malfunction for purposes of reviewing subsequent AG Flaring Incidents;

(2). If the Root Cause of the AG Flaring Incident was not sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then Koch shall implement corrective action(s) pursuant to Paragraph 101(b).

(B) Recurrence: If the Root Cause is a recurrence of the same Root Cause that resulted in a previous AG Flaring Incident that occurred since the Effective Date of this Consent Decree, then Koch shall be liable for stipulated penalties under Paragraph 103(a) of this Decree unless:

(1) the AG Flaring Incident resulted from a Malfunction,

(2) the Root Cause previously was designated as an agreed-upon malfunction under Paragraph 101(c)(iii)(A)(1), or

(3) the AG Flaring Incident was a recurrence of an event that Koch had previously developed a corrective action plan for and for which it had not yet completed implementation.

(iv.) In response to a demand by EPA for stipulated penalties, the United States and Koch both agree that Koch shall be entitled to assert a Malfunction defense with respect to any AG Flaring Incident or Tail Gas Incident falling under this Paragraph. In the event that a dispute arising under this Paragraph is brought to the Court pursuant to the Dispute Resolution provisions of this Decree, nothing in this Paragraph is intended or shall be construed to deprive Koch of its view that Startup, Shutdown, and Malfunction upset defenses are available for AG Flaring Incidents and Tail Gas Incidents, nor to deprive the United States of its view that such defenses are not available.

(v.) Other than for a Malfunction or Force Majeure, if no AG Flaring Incident or Tail Gas Incident occurs at a refinery for a rolling 36 month period, then the stipulated penalty provisions of Paragraph 103(a) no longer apply at that refinery. EPA may elect to reinstate the stipulated penalty provision if Koch has a flaring event which would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall continue for the remaining life of this Consent Decree.

102. MISCELLANEOUS:

(a) Calculation of the Quantity of Sulfur Dioxide Emissions resulting from AG Flaring. For purposes of this Consent Decree, the quantity of sulfur dioxide

emissions resulting from AG Flaring shall be calculated by the following formula:

Tons of Sulfur Dioxide = [FR][TD][ConcH2S][8.44 x 10-5].

The quantity of Sulfur Dioxide emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of Sulfur Dioxide emitted shall be rounded to 10.1 tons.) For purposes of determining the occurrence of, or the total quantity of Sulfur Dioxide emissions resulting from, a AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of Sulfur Dioxide emitted shall be equal to the sum of the quantities of sulfur dioxide flared during each such period of intermittent AG Flaring.

(b) Calculation of the Rate of Sulfur Dioxide Emissions during AG Flaring. For purposes of Paragraph 101(c)(ii)(A) of this Consent Decree, the rate of sulfur dioxide emissions resulting from Flaring shall be expressed in terms of pounds per hour, and shall be calculated by the following formula: ER = [FR][ConcH2S][0.169]. The emission rate shall be rounded

to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of sulfur dioxide per hour, the emission rate shall be rounded to 20.0 pounds of sulfur dioxide per hour; for a calculation that results in an emission rate of 20.05 pounds of sulfur dioxide per hour, the emission rate shall be rounded to 20.1.)

(c) Meaning of Variables and Derivation of Multipliers used in the Equations in Paragraphs 102(a) and 102(b):

ER = Emission Rate in pounds of Sulfur Dioxide per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring, in standard cubic feet per hour

TD = Total Duration of Flaring in hours

ConcH2S = Average Concentration of Hydrogen Sulfide in gas during Flaring (or immediately prior to Flaring if all gas is being flared) expressed as a volume fraction (scf H2S/scf gas)

8.44 x 10-5 = [lb mole H2S/379 scf H2S][64 lbs SO_2/lb mole H2S][Ton/2000 lbs]

0.169 = [lb mole H2S/379 scf H2S][1.0 lb mole SO_2/1 lb mole H2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) - "FR" - shall be as measured by the relevant flow meter or

determined by calculation. Hydrogen sulfide concentration - "ConcH2S" - shall be determined from an SRP feed gas analyzer or by calculation. In the event that either of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment. The report required under Paragraph 101(a) shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

(d) Calculation of the Quantity of Sulfur Dioxide Emissions resulting from a Tail Gas Incident. For the purposes of this Consent Decree, the quantity of sulfur dioxide emissions resulting from a Tail Gas Incident shall be calculated by the one of the following methods, based on the point of release:

(i) If the Tail Gas Incident is an event of flaring, the sulfur dioxide emissions are calculated as follows:

$$\mathbf{ER_{TGFL}} = [FR_{TGFL}][ConcH2S][0.169][TD_{TGFL}]$$

Where:

$\mathbf{ER_{TGFL}}$ = Emission Rate in pounds of Sulfur Dioxide for Tail Gas Incident using flare

FR_{TGFL} = Average Tail Gas Flow Rate to Flaring Device(s) during Flaring, in standard cubic feet per hour

TD_{TGFL} = Total Duration for flaring of Tail Gas Incident in hours

ConcH2S = Average Concentration of Hydrogen Sulfide in tail gas during Flaring (or immediately prior to Flaring if all gas is being flared) expressed as a volume fraction (scf H2S/scf gas)

0.169 = [lb mole H2S/379 scf H2S][1.0 lb mole SO_2/1 lb mole H2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of tail gas to the Flaring Device(s) - "FR_{TGFL}" - may be measured or estimated using engineering calculations or judgement. Hydrogen sulfide concentration - "ConcH2S" - shall be determined or estimated from the TGTU or Claus process information.

(ii) If the Tail Gas Incident is released from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = [FR_{Inc.}] [Conc.\ SO2 - 250] [0.169 \times 10^{-6}] [TD_{TGI}]$$

Where:

ER_{TGI} = Emissions from Tail Gas at the SRP incinerator, SO2 lbs. over a 24 hour period

$FR_{Inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP)

Conc. SO2 = Actual SO2 concentration (CEM data) in the incinerator exhaust gas, ppmvd at 0% O_2 and average over 24 hour.

0.169×10^{-6} = [lb mole of SO2 / 379 SO2] [64 lbs SO2 / lb mole SO2] [$1x\ 10^{-6}$]

TD_{TGI} = Total duration (hours) when the Incinerator CEM was exceeding 250 ppmvd at 0% O_2 on a rolling twelve hour average, in a 24 hour period.

In the event the Conc. SO2. data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then estimates will be used based on best engineering judgement.

(e) Any disputes under the provisions of this Part shall be resolved in accordance with the Part XVI (Dispute Resolution) of this Decree.

103. STIPULATED PENALTIES UNDER THIS PART: Koch shall be liable for the following stipulated penalties for violations of the requirements of this Part. For each violation that is assessed on a “per period” basis, the

amounts identified below apply on the first day of violation and are calculated for each incremental period of violation (or portion thereof):

(a) AG Flaring Incidents for which Koch is liable under Paragraphs 101(c):

Tons Emitted in Flaring Incident	Length of Time from Commencement of Flaring within the Flaring Incident to Termination of Flaring within the Flaring Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Flaring Incident to Termination of Flaring within the Flaring Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time of Flaring within the Flaring Incident is greater than 24 hours
5 Tons or less	$500 per Ton	$750 per Ton	$1,000 per Ton
Greater than 5 Tons, but less than or equal to 15 Tons	$1,200 per Ton	$1,800 per Ton	$2,300 per Ton, up to, but not exceeding, $27,500 in any one calendar day
Greater than 15 Tons	$1,800 per Ton, up to, but not exceeding, $27,500 in any one calendar day	$2,300 per Ton, up to, but not exceeding, $27,500 in any one calendar day	$27,500 per calendar day for each calendar day over which the Flaring Incident lasts

(i) For purposes of calculating stipulated penalties pursuant to this SubParagraph, only one cell within the matrix shall apply. Thus, for example, for an AG Flaring Incident in which the AG Flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of sulfur dioxide are emitted, the penalty would be $17,400 (14.5 x $1,200); the penalty would not be $13,900 [(5 x $500) + (9.5 x $1200)].

(ii) For purposes of determining which column in the table set forth in this SubParagraph applies under circumstances in which AG Flaring occurs intermittently during an AG Flaring Incident, the AG Flaring shall be deemed to commence at the time that the AG Flaring that triggers the initiation of a AG Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of AG Flaring within the AG Flaring Incident. Thus, for example, for AG Flaring within an AG Flaring Incident that (A) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (B) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (C) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (D) no further AG Flaring occurs within the AG Flaring Incident, the AG Flaring within the AG Flaring Incident shall be deemed to last 12.5 hours -- not 1.5 hours -- and the column for AG Flaring of "greater than 3 hours but less than or equal to 24 hours" shall apply.

(b) Failure to timely submit any report required by this Part, or for submitting any report that does not conform to the requirements of this Part:

$5,000 per week, per report.

(c) For those corrective action(s) which Koch is required to undertake following Dispute Resolution, then, from the 91st day after EPA's receipt of Koch's report under Paragraph 101(b) of this Decree until the date that

either (i) a final agreement is reached between U.S. EPA and Koch regarding the corrective action or (ii) a court order regarding the corrective action is entered:

$5,000 per month

(d) Failure to complete any corrective action under Paragraph 101(b) of this Decree in accordance with the schedule for such corrective action agreed to by Koch or imposed on Koch pursuant to the Dispute Resolution provisions of this Decree (with any such extensions thereto as to which EPA and Koch may agree in writing):

$5,000 per week

104. Certification. All notices, reports or any other submissions required of Koch by this Part shall contain the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

105. The reporting requirements set forth in this Part do not relieve Koch of its obligation to any State, local authority, or EPA to submit any other reports or information required by the CAA, or by any other state, federal or local requirements.

VIII. PERMITTING

106. Construction. Koch agrees to apply for and make all reasonable efforts to obtain in a timely manner all appropriate federally enforceable permits (or construction permit waivers) for the construction of the pollution control technology required to meet the above pollution reductions.

107. Operation. As soon as practicable, but in no event later than 60 days following a final determination of concentration limits, Koch shall apply for and make all reasonable efforts to incorporate the concentration limits required by this Consent Decree into NSR and other applicable permits for these facilities. Koch shall apply to incorporate NSPS applicability, where appropriate, into the relevant permits as set forth in Paragraph 106 above.

108. The Pine Bend Project. The parties agree that Koch initiated the planning of a project involving modifications to the #2 Crude Unit at the Pine Bend refinery prior to the signing of the Agreement in Principle dated June 30, 2000. This project is reflected in an air permit application submitted to the MPCA dated September 11, 2000. Among other things, Koch has proposed to install, as part of this

project, a new heater (11H-6). While not subject to the terms of this Consent Decree, Koch has agreed to install "next generation" ultra low NO_X burners, as defined in this Consent Decree, in 11H-6 and to eliminate fuel oil firing at all heaters involved in this project. As a result, the project will result in reduced NO_X and SO_2 emissions. The parties agree that this project should be carried out in furtherance of the objectives of this Consent Decree. The parties also recognize the existence of the Findings and Order by Stipulation (Administrative Order), dated February 25, 1994, between Koch Refining Company (now Koch Petroleum Group) and MPCA. The Administrative Order was made part of the State Implementation Plan (SIP) for sulfur dioxide attainment in Minnesota. Koch is involved in a process to revise the Administrative Order and SIP to allow Koch to implement the projects set forth in this Consent Decree. The parties believe that these projects will further the goals of the Administrative Order and SIP, to reduce sulfur dioxide emissions to the ambient air. Therefore, the parties agree that so long as Koch conforms to the terms and conditions of the Consent Decree as it pertains to pollution reduction measures related to SO_2 emissions, MPCA will take no action

against Koch for the failure to obtain a modification of the Administrative Order prior to construction of the new heaters. The parties agree to work expeditiously towards the modification of the Administrative Order and SIP to address construction and operation of the new heater, as well as to facilitate issuance of the Title V permit for the Pine Bend refinery and approvals for other projects required by this Consent Decree. If Koch submits timely and appropriate documentation to support the SIP revision, then no violation of the construction schedule in this Consent Decree will result if the SIP revision is otherwise delayed.

IX. ENVIRONMENTALLY BENEFICIAL PROJECTS

109. Koch and the United States agree that measures to reduce NO_X and SO_2 emissions from the FCCUs and heaters and boilers at the Pine Bend and Corpus Christi refineries, to the extent that they are not otherwise required by law, are pollution reduction projects and shall be considered for penalty mitigation pursuant to this Consent Decree.

110. Koch shall perform the following pollution reduction projects:

(a.) Limitation of supplemental fuel oil burning at the Pine Bend refinery to 100,000 barrels per year at all process heaters and steam boilers (except where Koch can demonstrate that natural gas curtailment is an issue and fuel oil use is required as a back-up). This project will prevent approximately 400 tons of SO_2 emissions per year;

(b.) Installation of flare gas recovery system at the Corpus Christi East refinery;

(c.) Replacement, shutdown, or control of heaters and boilers to reduce NO_X emissions at the three refineries;

(d.) Reduction of NO_X emissions from the FCCUs at the three refineries; and

(e.) Continue the restriction on burning of any fuel oil in any of the heaters and boilers at the Corpus Christi East and West refineries.

111. Koch agrees that in any public statements regarding the funding of the projects identified in this Part, Koch must clearly indicate that these projects are being undertaken pursuant to this Consent Decree. Except as provided in Part IV, Section E (Emission Credit Generation and Classification), Koch shall not use or rely on the emission reductions generated as a result of its performance of these projects.

X. INCORPORATION OF RCRA CONSENT AGREEMENT AND FINAL ORDER

112. On August 31, 2000, EPA and Koch entered into a Consent Agreement and Final Order ("CAFO") resolving alleged

RCRA violations at Koch's Pine Bend, Minnesota refinery, EPA docket number RCRA-5-2000-010. The terms of the CAFO are hereby incorporated by reference and are fully enforceable by and through the relevant terms of this Consent Decree. Koch's payment of $3.5 million in civil penalties as referenced in the CAFO shall be paid pursuant to Paragraph 117 of this Consent Decree. Stipulated penalties due under the CAFO shall be paid as provided in the CAFO, and if not timely paid may be enforced under the CAFO or this Consent Decree. A copy of the CAFO is attached to this Consent Decree as Attachment 3.

XI. GENERAL RECORDKEEPING, RECORD RETENTION, AND REPORTING

113. Defendant shall retain all records required to be maintained in accordance with this Consent Decree for a period of five (5) years unless other regulations require the records to be maintained longer.

114. Beginning with the first full calendar quarter after entry of this Consent Decree, the Defendant shall submit a calendar quarterly progress report ("calendar quarterly report") to EPA within 30 days after the end of

each of the calendar quarters during the life of this Consent Decree. This report shall contain the following:

(a.) progress report on the implementation of the requirements of Parts IV-VIII (Compliance Programs) above;

(b.) a summary of all Hydrocarbon Flaring Incidents;

(c.) a summary of the emissions data as required by Parts IV-VIII, of this Consent Decree for the calendar quarter;

(d.) a description of any problems anticipated with respect to meeting the Compliance Programs of Parts IV-VIII of this Consent Decree; and

(e.) a description of all environmentally beneficial projects and implementation activity in accordance with Part IX this Consent Decree.

115. The calendar quarterly report shall be certified by a refinery manager or corporate officer responsible for environmental management and compliance at the refineries covered by the report, as follows:

> “I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.”

XII. CIVIL PENALTY

116. Within thirty (30) calendar days of entry of this Consent Decree, the Defendant shall pay to the United States a civil penalty in the amount of $4.5 million dollars ($4,500,000). Of the total, $3.5 million shall be paid in settlement of the United States' RCRA claims at the Pine Bend refinery and $75,000 shall be paid to the EPA Hazardous Substances Superfund in settlement of the United States' CERCLA claims at Pine Bend. No amount of the civil penalties assessed relate to compliance issues at the Corpus Christi East refinery. Moreover, none of the civil penalties are attributable to alleged violations of the Benzene Waste NESHAP. Penalties for the Benzene Waste NESHAP violations are being addressed exclusively by a pending criminal action entitled U.S. v. Koch Industries, et al., (S.D. TX) Docket # C-00-325.

117. The monies shall be paid by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing the USAO File Number and DOJ Case Number 90-5-2-1-07110, and the civil action case name and case number of the District of Minnesota. The costs of such EFT shall be Koch's

responsibility. Payment shall be made in accordance with instructions provided to Koch by the Financial Litigation Unit of the U.S. Attorney's Office in the District of Minnesota. Any funds received after 11:00 a.m. (EST) shall be credited on the next business day. Koch shall provide notice of payment, referencing the USAO File Number and DOJ Case Number 90-5-2-1-07110, and the civil action case name and case number, to the Department of Justice and to EPA, as provided in Paragraph 148 (Notice).

118. Upon entry of this Decree, this Decree shall constitute an enforceable judgment for purposes of post-judgment collection in accordance with Rule 69 of the Federal Rules of Civil Procedure, the Federal Debt Collection Procedure Act, 28 U.S.C. § 3001-3308, and other applicable federal authority. The United States shall be deemed a judgment creditor for purposes of collection of any unpaid amounts of the civil and stipulated penalties and interest.

119. No amount of the civil penalty to be paid by Koch shall be used to reduce its federal or state tax obligations.

XIII. STIPULATED PENALTIES

120. The Defendant shall pay stipulated penalties to the United States or the MPCA, where appropriate, for each

failure by the Defendant to comply with the terms of this Consent Decree; provided, however, that the United States or the MPCA may elect to bring an action for contempt in lieu of seeking stipulated penalties for violations of this Consent Decree. For each violation, the amounts identified below shall apply on the first day of violation, shall be calculated for each incremental period of violation (or portion thereof), and shall be doubled beginning on the fourth consecutive, continuing period of violation, except such doubling shall not apply to Paragraphs 120(f) and 120(g)(i). In the alternative, at the option of the United States or the MPCA, stipulated penalties shall equal 1.2 times the economic benefit of Koch's delayed compliance, if this amount is higher than the amount calculated under this Paragraph.

(a.) Requirements for NO_X emission reductions from heaters and boilers (Part IV, Section A):

(i) Failure to install all the required burners by the December 31, 2006 deadline:
$75,000 per quarter per unit

(ii) Failure to test for emissions or failure to establish operating parameters:
$2000 per month per unit

(iii) Failure to meet the emission limits established pursuant to Part IV, Section A:
$800 per day for each heater or boiler with capacity of 150 mmBTU/hr (HHV) or greater;

$400 per day for each heater or boiler with capacity of less than 150 mmBTU/hr (HHV);

(iv) Failure to install CEMS:
$20,000 per month per unit

(v) Failure to submit the written proposals, feasibility determinations or annual reports to EPA pursuant to this Part:
$1000 per proposal/determination/report per month

(b.) Requirements for NO_X emission reductions from FCCUs

(Part IV, Section B):

(i) Failure to conduct NO_X additive demonstrations:
$30,000 per month per refinery

(ii) Failure to install SNCR on any one FCCU, or an alternative technology:
$100,000 per quarter per refinery

(iii) Failure to meet emission limits established pursuant to Part IV, Section B:
$1500 per day per unit

(iv) Failure to prepare a final report as required by Part IV, Section B:
$1,000 per week per report

(c.) Requirements for SO_2 emission reductions from FCCUs

(Part IV, Section C):

(i) Failure to meet interim emission limits for the FCCU exhaust gas at Pine Bend:

$1500 per day

(ii) Failure to timely conduct optimization studies of the wet gas scrubbers at Corpus Christi West and East:
$5000 per month per unit

(iii) Failure to meet final emission limits for the FCCU exhaust gas at each refinery:
$3000 per day per unit

(d.) Requirements for Benzene Waste NESHAP program

enhancements (Part V):

(i) Failure to timely conduct audit under Paragraph 64:
$5,000 per month per audit

(ii) Failure to timely sample under Paragraph 66: $5,000 per week or $30,000 per quarter, per stream (whichever amount is greater, but not to exceed $150,000 per refinery per quarter)

(iii) Failure to timely install carbon canister under Paragraph 68(a):
$5,000 per week per canister

(iv) Failure to timely replace carbon canister under Paragraph 68(d):
$1,000 per day per canister

(v) Failure to perform monthly monitoring under Paragraph 71(a):
$500 per month per drain

(vi) Failure to develop and timely implement training program under Paragraph 71(c):
$10,000 per quarter per refinery

(vii) Failure to mark segregated stormwater drains under Paragraph 71(f):
$1,000 per week per drain

(viii) Failure to complete timely evaluations under Paragraph 72:
$500 per week per evaluation

(ix) Failure to timely submit reports under this Part:
$1,000 per week per report

(x) If it is discovered by an EPA or state investigator or inspector, or their agent, that Koch failed to include all benzene waste streams in its TAB, for each waste stream that is:
less than 0.03 Mg/yr - $250
between 0.03 and 0.1 Mg/yr - $1000
between 0.1 and 0.5 Mg/yr - $5000
greater than 0.5 Mg/yr - $10,000

(e) Requirements for Leak Detection and Repair program enhancements (Part VI):

(i). Failure to have a written LDAR program under Paragraph 75:
$3000 per week

(ii) Failure to timely develop training program under Paragraph 77:
$10,000 per month

(iii) Failure to timely conduct internal or external audit under Paragraph 78:
$5,000 per month per audit

(iv) Failure to timely implement internal leak definition under Paragraph 79:
$10,000 per month per process unit

(v) Failure to develop and timely implement first attempt at repair program under Paragraph 80:
$10,000 per month

(vi) Failure to implement and begin more frequent monitoring program under Paragraph 81:
$10,000 per month per process unit

(vii) Failure to timely monitor under Paragraph 81 and 82:
$5,000 per week per process unit

(viii) Failure to have dataloggers and electronic storage under Paragraph 83:
$5,000 per month per refinery

(ix) Failure to establish new equipment standards under Paragraph 84:
$1,000 per month

(x) Failure to implement subcontractor requirements (if required) under Paragraph 85:
$5,000 per month per refinery

(xi) Failure to timely establish LDAR accountability under Paragraph 86:
$5,000 per month per refinery

(xii) Failure to timely implement maintenance tracking program under Paragraph 88:
$5,000 per month per refinery

(xiii) Failure to conduct calibration drift assessment or to remonitor components (if and as required) under Paragraph 90:
$100 per day per refinery

(xiv) Failure to attempt “heroic” repairs under Paragraph 91:
$5,000 per component

(xv) Failure to timely submit reports required under this Part:

$1,000 per week per report

(xvi) If it is discovered by an EPA or state investigator or inspector, or their agent, that Koch failed to include all required components in its LDAR program:
$250 per component

(f) Requirements for NSPS Applicability to SRPs (Part VII):

(i) For those events not otherwise covered by Paragraph 100 (i.e., Tail Gas Incidents), each rolling 12-hour average of sulfur dioxide emissions from any SRP in excess of the limitation at 40 C.F.R. § 60.104(a)(2)(i) that is not attributable to Startup, Shutdown, or Malfunction of the SRP, or that is not attributable to Malfunction of the associated TGTU:

Number of rolling 12-hr average exceedances within calendar day	Penalty per rolling 12-hr average exceedance
1-12	$ 350
Over 12	$ 750

(ii) Operation of the SRP during Scheduled Maintenance of its associated TGTU (except that this Paragraph shall not apply during the period in which Koch is engaged in the Shutdown of an SRP for, or Startup of an SRP following, Scheduled Maintenance of the SRP):
$25,000 per SRP per day

(g) Requirements for SRU Optimization and Flaring (Part VII):

(i) Stipulated penalties as identified and enumerated in Paragraph 103

(ii) Failure to operate and maintain properly a flare gas recovery system pursuant to Koch's Flare Policy (Attachment 2) (this requirement does not apply to Corpus Christi East until January 7, 2004):
$1,000 per day per refinery

(iii) Failure to timely install a flare gas recovery system at the Corpus Christi East refinery:
$100,000 per quarter

(h) Requirements for Permitting (Part VIII):

Failure to timely submit a complete permit application under Paragraph 106 or 107 &:
$1,000 per week per unit

(i) Requirements for Pollution Reduction Projects (Part IX);

Oil burning in violation of Paragraph 110:
$15 per barrel

(j) Requirements for Reporting and Recordkeeping (Part XI):

Failure to timely submit a report required under Part XI:
$1,000 per week per report

(k) Requirement to pay a Civil Penalty and to Escrow Stipulated Penalties:

(i) Failure to timely pay the civil penalty specified in Part XII of this Consent Decree:

$20,000 per week, plus interest on the amount overdue at the rate specified in 31 U.S.C. § 3717.

(ii) Failure to escrow stipulated penalties as required by Paragraph 122:
$10,000 per week

121. Koch shall pay such stipulated penalties only upon written demand by the United States or the MPCA no later than thirty (30) days after Defendant receives such demand. Such demand will identify to which government agencies payment must be made. Stipulated penalties shall be paid to either the United States or the MPCA, unless the total amount of the stipulated penalty is apportioned between the United States and the MPCA. Such payment shall be made to the United States in the manner set forth in Part XII (Civil Penalty) of this Consent Decree, and to MPCA for deposit in the State Environmental Response, Compensation and Compliance Fund, and the environmental fund in the state treasury referred to in Minnesota Statutes Chapter 115.072.

122. Should Koch dispute its obligation to pay part or all of a stipulated penalty, it may avoid the imposition of the stipulated penalty for failure to pay a penalty due to the United States or the MPCA, by placing the disputed amount

demanded by the United States or the MPCA, not to exceed $50,500 for any given event or related series of events at any one refinery, in a commercial escrow account pending resolution of the matter and by invoking the Dispute Resolution provisions of Part XVI within the time provided in this Paragraph for payment of stipulated penalties. If the dispute is thereafter resolved in Defendant's favor, the escrowed amount plus accrued interest shall be returned to the Defendant, otherwise the United States or MPCA shall be entitled to the escrowed amount that was determined to be due by the Court plus the interest that has accrued on such amount, with the balance, if any, returned to the Defendant.

123. The United States and the MPCA reserve the right to pursue any other remedies to which they are entitled, including, but not limited to, additional injunctive relief for Defendant's violations of this Consent Decree. Nothing in this Consent Decree shall prevent the United States or the MPCA from pursuing a contempt action against Koch and requesting that the Court order specific performance of the terms of the Decree. Nothing in this Consent Decree authorizes MPCA to take action or make any determinations

under this Consent Decree regarding Koch refineries outside the state of Minnesota.

124. Election of Remedy. The United States and the MPCA will not seek both stipulated penalties and civil penalties for the same actions or occurrences as those constituting a violation of the Consent Decree.

XIV. RIGHT OF ENTRY

125. Any authorized representative of the EPA or an appropriate state agency, including independent contractors, upon presentation of credentials, shall have a right of entry upon the premises of Koch's plants identified herein at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including inspecting plant equipment, and inspecting and copying all records maintained by Defendant required by this Consent Decree. Nothing in this Consent Decree shall limit the authority of EPA to conduct tests and inspections under Section 114 of the Act, 42 U.S.C. § 7414, or any other statutory and regulatory provision.

XV. FORCE MAJEURE

126. If any event occurs which causes or may cause a delay or impediment to performance in complying with any

provision of this Consent Decree, Koch shall notify the United States and the MPCA, if the issue relates to the Pine Bend Refinery, in writing as soon as practicable, but in any event within twenty (20) business days of when Koch first knew of the event or should have known of the event by the exercise of due diligence. In this notice Koch shall specifically reference this Paragraph of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, and the measures taken or to be taken by Koch to prevent or minimize the delay and the schedule by which those measures will be implemented. Koch shall adopt all reasonable measures to avoid or minimize such delays.

127. Failure by Koch to comply with the notice requirements of Paragraph 126 as specified above shall render this Part XV voidable by the United States or the MPCA, if applicable to the Pine Bend refinery, as to the specific event for which Koch has failed to comply with such notice requirement, and, if voided, it shall be of no effect as to the particular event involved.

128. The United States and MPCA shall notify Koch in writing regarding Koch’s claim of a delay or impediment to

performance within twenty (20) business days of receipt of the Force Majeure notice provided under Paragraph 126. If the United States and MPCA, if applicable to the Pine Bend refinery, agree that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Koch, including any entity controlled by Koch, and that Koch could not have prevented the delay by the exercise of due diligence, the parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances, or such other period as may be appropriate in light of the circumstances. Such stipulation may be filed as a modification to this Consent Decree by agreement of the parties pursuant to the modification procedures established in this Consent Decree. Koch shall not be liable for stipulated penalties for the period of any such delay.

129. If the United States or the MPCA, if applicable to the Pine Bend refinery, do not accept Koch's claim of a delay or impediment to performance, Koch must submit the matter to this Court for resolution to avoid payment of stipulated penalties, by filing a petition for determination with this

Court. In the event that the United States and MPCA are unable to reach agreement on acceptance of Koch's claim of a delay or impediment to performance under this Part, the final decision of the United States shall be binding. Once Koch has submitted this matter to this Court, the United States and MPCA, if applicable to the Pine Bend refinery, shall have twenty (20) business days to file its response to said petition. If Koch submits the matter to this Court for resolution and the Court determines that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Koch, including any entity controlled by Koch, and that Koch could not have prevented the delay by the exercise of due diligence, Koch shall be excused as to that event(s) and delay (including stipulated penalties), for all requirements affected by the delay for a period of time equivalent to the delay caused by such circumstances or such other period as may be determined by the Court.

130. Koch shall bear the burden of proving that any delay of any requirement(s) of this Consent Decree was caused by or will be caused by circumstances beyond its control, including any entity controlled by it, and that Koch could not have

prevented the delay by the exercise of due diligence. Koch shall also bear the burden of proving the duration and extent of any delay(s) attributable to such circumstances. An extension of one compliance date based on a particular event may, but does not necessarily, result in an extension of a subsequent compliance date or dates.

131. Unanticipated or increased costs or expenses associated with the performance of Koch's obligations under this Consent Decree shall not constitute circumstances beyond the control of Koch, or serve as a basis for an extension of time under this Part. However, failure of a permitting authority to issue a necessary permit in a timely fashion is an event of Force Majeure where the failure of the permitting authority to act is beyond the control of Koch and Koch has taken all steps available to it to obtain the necessary permit including but not limited to:

(a.) submitting a complete permit application;

(b.) responding to requests for additional information by the permitting authority in a timely fashion;

(c.) accepting lawful permit terms and conditions; and

(d.) prosecuting appeals of any unlawful terms and conditions imposed by the permitting authority in an expeditious fashion.

132. Notwithstanding any other provision of this Consent Decree, this Court shall not draw any inferences nor establish any presumptions adverse to either party as a result of Koch delivering a notice of Force Majeure or the parties' inability to reach agreement.

133. As part of the resolution of any matter submitted to this Court under this Part XV, the parties by agreement, or this Court, by order, may in appropriate circumstances extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay or impediment to performance agreed to by the United States or approved by this Court. Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XVI. DISPUTE RESOLUTION

134. The dispute resolution procedure provided by this Part XVI shall be available to resolve all disputes arising under this Consent Decree, except as otherwise provided in Part XV regarding Force Majeure, provided that the party making such application has made a good faith attempt to resolve the matter with the other party. In the event that

the United States and MPCA make differing determinations or take differing actions that affect Koch’s rights or obligations under this Consent Decree, the final decision of the United States shall be binding.

135. The dispute resolution procedure required herein shall be invoked upon the giving of written notice by one of the parties to this Consent Decree to another advising of a dispute pursuant to this Part XVI. The notice shall describe the nature of the dispute, and shall state the noticing party's position with regard to such dispute. The party receiving such a notice shall acknowledge receipt of the notice and the parties shall expeditiously schedule a meeting to discuss the dispute informally not later than fourteen (14) days from the receipt of such notice.

136. Disputes submitted to dispute resolution shall, in the first instance, be the subject of informal negotiations between the parties. Such period of informal negotiations shall not extend beyond thirty (30) calendar days from the date of the first meeting between representatives of the United States or the MPCA, if applicable to the Pine Bend refinery, and the Defendant, unless the parties' representatives agree to shorten or extend this period.

137. In the event that the parties are unable to reach agreement during such informal negotiation period, the United States or the MPCA, if applicable to the Pine Bend refinery, shall provide the Defendant with a written summary of its position regarding the dispute. The position advanced by the United States or the MPCA, if applicable to the Pine Bend refinery, shall be considered binding unless, within forty-five (45) calendar days of the Defendant's receipt of the written summary of the United States' or the MPCA's position, the Defendant files with this Court a petition which describes the nature of the dispute. In the event that the position advanced by the United States differs from the position advanced by the MPCA, if applicable to the Pine Bend refinery, the position of the United States shall be considered binding unless, within forty-five (45) calendar days of the Defendant's receipt of the written summary of the United States' position, the Defendant files with this Court a petition which describes the nature of the dispute. The United States or the MPCA, if applicable to the Pine Bend refinery, shall respond to the petition within forty-five (45) calendar days of filing.

138. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set out in this Part XVI may be shortened upon motion of one of the parties to the dispute.

139. Notwithstanding any other provision of this Consent Decree, in dispute resolution, this Court shall not draw any inferences nor establish any presumptions adverse to either party as a result of invocation of this Part XVI or the parties' inability to reach agreement.

140. As part of the resolution of any dispute submitted to dispute resolution, the parties, by agreement, or this Court, by order, may, in appropriate circumstances, extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of dispute resolution. Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XVII. EFFECT OF SETTLEMENT

141. Satisfaction of all of the requirements of this Consent Decree constitutes full settlement of and shall resolve all civil liability of the Defendant to the United

States and the Plaintiff-Intervener for the violations alleged in the United States' and Plaintiff-Intervener's Complaints and all civil liability of the Defendant for any violations at its Pine Bend and Corpus Christi East and West refineries based on events that occurred during the relevant time period under the following statutory and regulatory provisions: the New Source Performance Standards ("NSPS"), 40 C.F.R. Part 60, Subpart J; Leak Detection and Repair ("LDAR"), 40 C.F.R. Part 60, Subparts VV and GGG, and 40 C.F.R. Part 63, Subparts F, H, and CC; National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Benzene, 40 C.F.R. Part 61, Subparts FF, J and V pursuant to Section 112(d) of the Act; and the Minnesota and Texas regulations which incorporate and/or implement the above-listed federal regulations. For purposes of this Consent Decree the "relevant time period" shall mean the period beginning when the United States' claims and/or Plaintiff-Intervener's claims under the above statutes and regulations accrued through the date of entry of the Consent Decree. Koch's performance of all requirements of this Consent Decree shall resolve all civil liability under the Prevention of Significant Deterioration ("PSD") requirements at Part C of

the Act, and the regulations promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD" rules), and the Minnesota and Texas regulations which incorporate and/or implement those rules, for any increase in SO_2 and NO_X emissions resulting from Koch's construction, modification, or operation of the following process units occurring prior to entry of the Consent Decree: FCCUs, SRPs, and all process heaters and boilers at the Pine Bend, Corpus Christi East and West refineries, referred to in this Consent Decree as "netting units"; and for CO and PM emissions from the FCCUs. During the life of the Consent Decree, these units shall be on a compliance schedule and any modification to these units, as defined in 40 C.F.R. § 52.21, which is not required by this Consent Decree is beyond the scope of this release.

142. This Consent Decree is not a permit; compliance with its terms does not guarantee compliance with any applicable federal, state or local laws or regulations. Nothing in this Consent Decree shall be construed to be a ruling on, or determination of, any issue related to any federal, state or local permit.

XVIII. GENERAL PROVISIONS

143. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve Defendant of its obligation to comply with all applicable federal, state and local laws and regulations. Subject to Paragraph 124 (Election of Remedy), nothing contained in this Consent Decree shall be construed to prevent, alter or limit the ability of the United States' or the MPCA's rights to seek or obtain other remedies or sanctions available under other federal, state or local statutes or regulations, by virtue of Defendant's violation of this Consent Decree or of the statutes and regulations for violations of this Consent Decree. This shall include the United States' or the MPCA's right to invoke the authority of the Court to order Koch's compliance with this Consent Decree in a subsequent contempt action.

144. Third Parties. This Consent Decree does not limit, enlarge or affect the rights of any party to this Consent Decree as against any third parties.

145. Costs. Each party to this action shall bear its own costs and attorneys' fees.

146. Public Documents. All information and documents submitted by the Defendant to the United States or the MPCA pursuant to this Consent Decree shall be subject to public inspection, unless subject to legal privileges or protection or identified and supported as business confidential by the Defendant in accordance with 40 C.F.R. Part 2, or any equivalent state statutes and regulations.

147. Public Comments. The parties agree and acknowledge that final approval by the United States and entry of this Consent Decree is subject to the requirements of 28 C.F.R. § 50.7, which provides for notice of the lodging of this Consent Decree in the Federal Register, an opportunity for public comment, and consideration of any comments.

148. Notice. Unless otherwise provided herein, notifications to or communications with the United States or the Defendant shall be deemed submitted on the date they are postmarked and sent either by overnight receipt mail service or by certified or registered mail, return receipt requested. When Koch is required to submit notices or communicate in writing under this Consent Decree to EPA relating to the Pine Bend Refinery, Koch shall also submit a copy of that notice or other writing to the Plaintiff-Intervener, State of

Minnesota. Similarly Koch shall submit such copies to the State of Texas where notices or other written communications relate to the Corpus Christi East and West refineries.

Except as otherwise provided herein, when written notification or communication is required by this Consent Decree, it shall be addressed as follows:

As to the United States:

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611

United States Attorney
District of Minnesota
234 United States Courthouse
110 South Fourth Street
Minneapolis, Minnesota 55401

As to EPA:

Director
Air Enforcement Division (2242A)
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

With copies to the appropriate EPA Regional offices:

Chief
Air Enforcement and Compliance Assurance Branch
Air and Radiation Division, AE-17J
U.S. Environmental Protection Agency

Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590
Attn: Compliance Tracker

Chief
Air, Toxics, and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202
As to Koch Petroleum Group, L.P.:

James L. Mahoney
Executive Vice President, Operations
Koch Petroleum Group, L.P.
P.O. Box 2256
Wichita, KS 67201

with copies to:

William A. Frerking
Associate General Counsel
Koch Industries, Inc.
P.O. Box 2256
Wichita, KS 67201

As to Plaintiff-Intervener the State of Minnesota:

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

As to the State of Texas:

Texas Natural Resource and Conservation Commission
Corpus Christi Regional Office
6300 Ocean Drive
Suite 1200
Corpus Christi, TX 78412-5503

149. All EPA approvals or comments required under this Decree shall come from EPA, AED at the address listed in Paragraph 148.

150. Any party may change either the notice recipient or the address for providing notices to it by serving all other parties with a notice setting forth such new notice recipient or address.

151. The information required to be maintained or submitted pursuant to this Consent Decree is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 et seq.

152. This Consent Decree shall be binding upon all Parties to this action, and their successors and assigns. The undersigned representative of each Party to this Consent Decree certifies that he or she is duly authorized by the Party whom he or she represents to enter into the terms and bind that Party to them.

153. Modification. This Consent Decree may be modified only by the written approval of the United States, Koch, and the MPCA, if applicable to Pine Bend, or by Order of the Court.

154. Continuing Jurisdiction. The Court retains jurisdiction of this case after entry of this Consent Decree to enforce compliance with the terms and conditions of this Consent Decree and to take any action necessary or appropriate for its interpretation, construction, execution, or modification. During the term of this Consent Decree, any party may apply to the Court for any relief necessary to construe or effectuate this Consent Decree.

155. This Consent Decree constitutes the entire agreement and settlement between the Parties.

XIX. TERMINATION

156. This Consent Decree shall be subject to termination upon motion by either party after the Defendant satisfies all requirements of this Consent Decree. The requirements for termination include payment of all penalties, including stipulated penalties, that may be due to the United States under this Consent Decree, installation of control technology systems as specified herein and the performance of all other Consent Decree requirements, the receipt of all permits specified herein, EPA's receipt of the first calendar quarterly progress report following the conclusion of Koch’s operation for at least one year of all

units in compliance with the emission limits established herein. At such time, if Koch believes that it is in compliance with the requirements of this Consent Decree and the permits specified herein, and has paid the civil penalty and any stipulated penalties required by this Consent Decree, then Koch shall so certify to the United States, and unless the United States objects in writing with specific reasons within 120 days of receipt of the certification, the Court shall order that this Consent Decree be terminated on Koch's motion. If the United States so objects to Koch's certification, then the matter shall be submitted to the Court for resolution under Part XVI (Dispute Resolution) of this Consent Decree. In such case, Koch shall bear the burden of proving that this Consent Decree should be terminated. Provided, however, that if Koch has incorporated all requirements set forth in Parts V and VI of this Consent Decree (Benzene Waste NESHAP and LDAR enhanced programs) in a refinery’s federally enforceable operating permit, Koch may

petition EPA to terminate those Parts of the Consent Decree as to any such refinery at any time thereafter.

So entered in accordance with the foregoing this_____day of

_____, 200__.

_____

United States District Court Judge
for the District of Minnesota

FOR PLAINTIFF, UNITED STATES OF AMERICA:

B. Todd Jones
United States Attorney

By: _____ Date: _____
Friedrich A.P. Siekert
Attorney I.D. No. 142013
Assistant United States Attorney
234 United States Courthouse
110 South Fourth Street
Minneapolis, Minnesota 55401

_____ Date_____

Lois J. Schiffer
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
10th & Pennsylvania Avenue, N.W.
Washington, DC 20530

_____ Date_____

Dianne M. Shawley
Senior Attorney
Environment and Natural Resources Division
U.S. Department of Justice
1425 New York Avenue, N.W.
Washington, DC 20005

FOR U.S. ENVIRONMENTAL PROTECTION AGENCY:

_____ Date _____

Steven A. Herman
Assistant Administrator
Office of Enforcement and Compliance
Assurance
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

FOR PLAINTIFF-INTERVENER the STATE OF MINNESOTA:

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