

1 THOMAS L. SANSONETTI
2 Assistant Attorney General
3 Environment and Natural Resources Division
4 U.S. Department of Justice
5 Washington, D.C. 20530

6 KEVIN V. RYAN
7 United States Attorney
8 CHARLES M. O'CONNOR
9 Assistant United States Attorney
10 Northern District of California
11 450 Golden Gate Ave., Box 36055
12 San Francisco, CA 94102

13 A. KENT MAYO
14 Trial Attorney
15 Environmental Enforcement Section
16 U.S. Department of Justice
17 P.O. Box 7611
18 Washington, D.C. 20044
19 (202) 616-6557
20 kent.mayo@usdoj.gov

21 Attorneys for Plaintiff United States

22 [Additional Counsel identified on signature pages.]

23 **IN THE UNITED STATES DISTRICT COURT**
24 **FOR THE NORTHERN DISTRICT OF CALIFORNIA**
25 **SAN FRANCISCO DIVISION**

26 UNITED STATES OF AMERICA,)

27 Plaintiff,)

28 and)

29 STATE OF HAWAII,)
30 MISSISSIPPI COMMISSION ON)
31 ENVIRONMENTAL QUALITY,)
32 STATE OF UTAH,)
33 BAY AREA AIR QUALITY)
34 MANAGEMENT DISTRICT,)

35 Plaintiff-Intervenors,)

36 v.)

37 CHEVRON U.S.A. INC.,)

38 Defendant.)

NO. C 03-04650 (CRB)

CONSENT DECREE

TABLE OF CONTENTS

1

2 I. Jurisdiction and Venue (Paragraphs 1-3) 6

3 II. Applicability and Binding Effect (Paragraphs 4-8) 6

4 III. Objectives (Paragraph 9) 8

5 IV. Definitions (Paragraph 10) 8

6 V. Affirmative Relief/Environmental Projects 14

7 A. NOx Emissions Reductions from FCCU 14

8 B. SO₂ Emissions Reductions from FCCU 25

9 C. PM Emissions Reductions from FCCU 37

10 D. CO Emissions Reductions from FCCU 39

11 E. NSPS Applicability of FCCU Regenerators 41

12 F. NOx Emissions Reductions from Heaters and Boilers 41

13 G. SO₂ Emissions Reductions from and NSPS Applicability to Chevron Heaters
 14 and Boilers and Other Specified Equipment 46

15 H. Sulfur Recovery Plants - NSPS Applicability 48

16 I. Flaring Devices - NSPS Applicability 55

17 J. Control of Acid Gas Flaring Incidents and Tail Gas Incidents 57

18 K. Control of Hydrocarbon Flaring Incidents 67

19 L. Benzene Waste NESHAP Program Enhancements 67

20 M. Leak Detection and Repair Program Enhancements 82

21 N. Incorporation of Consent Decree Requirements into Federally-
 22 Enforceable Permits 92

23 102. Construction Permits 93

24 O. Risk Management Plan for El Segundo Refinery 93

25 VI. Emission Credit Generation 94

26 VII. Modifications to Implementation Schedule 97

27 VIII. Supplemental Environmental Projects 99

28

1 IX. Reporting and Recordkeeping 102

2 X. Civil Penalty 103

3 XI. Stipulated Penalties 106

4 A. Non-Compliance with Requirements for NO_x Emission Reductions

5 from FCCU 106

6 B. Non-Compliance with Requirements for SO₂ Emission Reductions

7 from FCCU 107

8 C. Non-Compliance with Requirements for PM Emission Reductions

9 from FCCU 109

10 D. Non-Compliance with Requirements for CO Emission Reductions

11 from FCCU 109

12 E. Non-Compliance with Requirements for NO_x Emission Reductions

13 from Heaters/Boilers 110

14 F. Non-Compliance with Requirements for SO₂ Emission Reductions

15 from Heaters/Boilers 111

16 G. Non-Compliance with Requirements for NSPS Applicability of

17 Sulfur Recovery Plant 112

18 H. Non-Compliance with Requirements for NSPS Applicability of

19 Flaring Devices 114

20 I. Non-Compliance with Requirements for Control of AG Flaring and

21 Tail Gas Incidents 115

22 J. Non-Compliance with Requirements for Control of HC Flaring Incidents 117

23 K. Non-Compliance with Requirements for Benzene Waste

24 NESHAP Enhancements 118

25 L. Non-Compliance with Requirements for Leak Detection and

26 Repair Enhancements 120

27 M. Non-Compliance with Requirements for Risk Management Plan

28 for El Segundo Refinery 121

1 173. Non-Compliance with Requirements Related to Environmentally
2 Beneficial Projects 122
3 174. Non-Compliance with Requirements for Reporting and Recordkeeping 122
4 175. Non-Compliance with Requirements for Payment of Civil Penalties 122
5 176. Non-Compliance with Requirement to Pay Stipulated Penalties 122
6 177. Payment of Stipulated Penalties 122
7 178. Stipulated Penalties Dispute 123
8 XII. Interest 123
9 XIII. Right of Entry 124
10 XIV. Force Majeure 124
11 XV. Retention of Jurisdiction/Dispute Resolution 127
12 XVI. Effect of Settlement 128
13 XVII. General Provisions 138
14 XVIII. Termination 144
15 XIX. Signatories 147

16
17
18
19
20
21
22
23
24
25
26
27
28

TABLE OF APPENDICES

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Appendix A – Determining the Optimized Addition Rates for Catalyst Additives at the FCCUs

Appendix B – List of Heaters and Boilers Greater Than 40 mmBTU Per Hour

Appendix C – Predictive Emissions Monitoring Systems Requirements

Appendix D – NSPS Compliance Schedule for Heaters and Boilers

Appendix E – NSPS Compliance Schedule for Other Identified Equipment

Appendix F – List of Flaring Devices

Appendix G – [Omitted]

Appendix H – Logic Diagram for Paragraphs 60 to 63

Appendix I- [Omitted]

Appendix J – Carbon Canister Breakthrough Study Guidelines

Appendix K – Sustainable Skip Period Program

Appendix L – Federal Diesel Emissions Reduction SEPs

Appendix M – Facility- and Community-Specific SEPs

1 WHEREAS, plaintiff, the United States of America ("Plaintiff" or "the United States"),
2 by the authority of the Attorney General of the United States and through its undersigned
3 counsel, acting at the request and on behalf of the United States Environmental Protection
4 Agency ("EPA"), has simultaneously filed a Complaint and lodged this Consent Decree against
5 Chevron U.S.A. Inc. ("Chevron"), for alleged environmental violations at Chevron's petroleum
6 refineries in Richmond, California, El Segundo, California, Pascagoula, Mississippi, Salt Lake
7 City, Utah, and Kapolei, Hawaii (collectively, the "Chevron Refineries");

8 WHEREAS, the United States alleges that Chevron has violated and/or continues to
9 violate the following statutory and regulatory provisions:

10 1) Prevention of Significant Deterioration ("PSD") requirements found at Part C of
11 Subchapter I of the Clean Air Act (the "Act"), 42 U.S.C. § 7475, and the regulations
12 promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD Rules"); the portions of the applicable
13 state implementation plans ("SIPs") and related rules adopted as required by 40 C.F.R. §§ 51.165
14 and 51.166; and "Plan Requirements for Non-Attainment Areas" at Part D of Subchapter I of the
15 Act, 42 U.S.C. §§ 7502-7503, and the regulations promulgated thereunder at 40 C.F.R. §
16 51.165(a) and (b) and at 40 C.F.R. Part 51, Appendix S, and at 40 C.F.R. § 52.24 ("PSD/NSR
17 Regulations"), for heaters and boilers and fluid catalytic cracking unit catalyst regenerators for
18 NO_x, SO₂, CO and PM;

19 2) New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts
20 A and J, under Section 111 of the Act, 42 U.S.C. § 7411 ("Refinery NSPS Regulations"), for
21 sulfur recovery plants, fuel gas combustion devices, and fluid catalytic cracking unit catalyst
22 regenerators;

23 3) Leak Detection and Repair ("LDAR") requirements promulgated pursuant to
24 Sections 111 and 112 of the Act, and found at 40 C.F.R. Part 60 Subparts VV and GGG; 40
25 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC ("LDAR
26 Regulations"); and

27 4) National Emission Standards for Hazardous Air Pollutants ("NESHAP") for
28 Benzene Waste Operations promulgated pursuant to Section 112(e) of the Act, and found at 40

1 C.F.R. Part 61, Subpart FF (“Benzene Waste NESHAP Regulations”).

2 WHEREAS, the United States further alleges that Chevron has violated and/or
3 continues to violate the reporting requirements found at Section 103(a) of the Comprehensive
4 Environmental Response, Compensation, and Liability Act (“CERCLA”), 42 U.S.C. § 9603(a),
5 and Section 304 of the Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42
6 U.S.C. § 11004, and the regulations promulgated thereunder;

7 WHEREAS, the United States also specifically alleges that Chevron, at its El Segundo
8 Refinery, has violated the reporting requirements found at Section 103(a) of CERCLA, 42
9 U.S.C. § 9603(a), and Section 304 of EPCRA, 42 U.S.C. § 11004, and the regulations
10 promulgated thereunder, and the Chemical Accident Prevention Provisions promulgated
11 pursuant to Section 112(r) of the Clean Air Act, 42 U.S.C. § 7412(r), and found at 40 C.F.R. Part
12 68;

13 WHEREAS, the United States also specifically alleges that, upon information and
14 belief, Chevron has been and/or continues to be in violation of the SIPs and other state and local
15 rules, regulations and permits adopted or issued by the states in which the Chevron Refineries
16 are located to the extent that such plans, rules, regulations, and permits implement, adopt or
17 incorporate the above-described Federal requirements;

18 WHEREAS, the State of Hawaii, the Mississippi Commission on Environmental
19 Quality, an agency of the State of Mississippi, the State of Utah, and the Bay Area Air Quality
20 Management District (“BAAQMD”) (collectively, “Plaintiff-Intervenors”), have sought to
21 intervene in this matter alleging violations of their respective applicable SIP provisions and/or
22 other state and local rules, regulations, and permits incorporating and implementing the
23 foregoing federal requirements;

24 WHEREAS, Chevron denies that it has violated and/or continues to violate the
25 foregoing statutory, regulatory, SIP provisions and other state and local rules, regulations and
26 permits incorporating and implementing the foregoing federal requirements, and maintains that it
27 has been and remains in compliance with all applicable statutes, regulations and permits and is
28 not liable for civil penalties and injunctive relief as alleged in the Complaint;

1 WHEREAS, the United States is engaged in a federal strategy for achieving cooperative
2 agreements with U.S. petroleum refineries to achieve across-the-board reductions in emissions
3 (“Global Settlement Strategy”);

4 WHEREAS, Chevron consents to the simultaneous filing of the Complaint and lodging
5 of this Consent Decree against Chevron despite its denial of the allegations in the Complaint to
6 accomplish its objective of cooperatively reconciling the goals of the United States, Chevron and
7 the Plaintiff-Intervenors under the Clean Air Act and the corollary state statutes, and therefore
8 agrees to undertake the installation of air pollution control equipment and enhancements to its air
9 pollution management practices at the Chevron Refineries to reduce air emissions by
10 participating in the Global Settlement Strategy;

11 WHEREAS, by entering into this Consent Decree, Chevron is committed to pro-
12 actively resolving environmental concerns relating to its operations;

13 WHEREAS, the United States and the Plaintiff-Intervenors anticipate that the
14 affirmative relief and environmental projects identified in Sections V and VIII of this Consent
15 Decree will reduce annual emissions from the Chevron Refineries by the following amounts: 1)
16 nitrogen oxide by approximately 3,300 tons per year; 2) sulfur dioxide by approximately 6,300
17 tons per year.

18 WHEREAS, EPA recently issued PSD Rules and PSD/NSR Regulations, see 67 Fed.
19 Reg. 80186-80289 (2002), that identify and address “Pollution Control Projects” and “Clean
20 Units” and the applicability of PSD/NSR permitting requirements to such Projects or Units;

21 WHEREAS, EPA previously issued guidance (“Pollution Control Projects and New
22 Source Review (NSR) Applicability”, July 1, 1994) identifying and addressing “Pollution
23 Control Projects” and the applicability of PSD/NSR permitting requirements to such Projects;

24 WHEREAS, EPA agrees that under the recently issued PSD Rules and PSD/NSR
25 Regulations that identify and address “Clean Units”, see 67 Fed. Reg. 80186 et seq., units that
26 accept the following emission limits under this Consent Decree may be considered as “Clean
27 Units” with respect to the identified pollutants:

28 For FCCUS: – 20 ppmvd NO_x at 0% O₂ on a 365-day rolling average basis

- 1 - 25 ppmvd SO₂ at 0% O₂ on a 365-day rolling average basis
- 2 - 100 ppmvd CO at 0% O₂ on a 365-day rolling average basis
- 3 - 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour
- 4 average basis

5 For Heaters and Boilers: 0.020 lbs/mmBTU NO_x
6 Units with higher limits may be considered as "Clean Units" under applicable rules at the
7 discretion of the permitting agency.

8 WHEREAS, EPA agrees that under recently issued PSD Rules and PSD/NSR
9 Regulations that identify and address "Pollution Control Projects", see 67 Fed. Reg. 80186 et
10 seq., and under prior EPA guidance ("Pollution Control Projects and New Source Review (NSR)
11 Applicability," July 1, 1994), the following activities may be considered as "Pollution Control
12 Projects" under such rules, regulations, and guidance, provided that Chevron complies with the
13 requirements for "Pollution Control Projects" under applicable federal, state, and local
14 regulations and policies.

15 For FCCUs: Activities required to comply with Sections V.A. and B. of this Consent
16 Decree (reduction of NO_x and SO₂ emissions by use of hardware and/or use of catalyst
17 additives under applicable protocol).

18 For Heaters and Boilers: Activities undertaken to comply with Paragraph 33 of this
19 Consent Decree (reduction of NO_x emissions by 2777 tons through the installation of
20 Qualifying Controls (as defined in Paragraph 32)).

21 WHEREAS, Chevron's Hawaii Refinery, located on the Island of Oahu, has no access
22 to an external source or supply of natural gas and generates insufficient refinery fuel gas to
23 operate all process units at the Refinery on refinery fuel gas.

24 WHEREAS, with respect to the provisions of Section V.J. ("Control of Acid Gas
25 Flaring Incidents and Tail Gas Incidents") of this Consent Decree, EPA maintains that "[i]t is the
26 intent of the proposed standard [40 C.F.R. § 60.104] that hydrogen-sulfide-rich gases exiting the
27 amine regenerator [or sour water stripper gases] be directed to an appropriate recovery facility,
28 such as a Claus sulfur plant," see Information for Proposed New Source Performance Standards:

1 Asphalt Concrete Plants, Petroleum Refineries, Storage Vessels, Secondary Lead Smelters and
2 Refineries, Brass or Bronze Ingot Production Plants, Iron and Steel Plants, Sewage Treatment
3 Plants, Vol. 1, Main Text at 28;

4 WHEREAS, EPA further maintains that the failure to direct hydrogen-sulfide-rich gases
5 to an appropriate recovery facility -- and instead to flare such gases under circumstances that are
6 not sudden or infrequent or that are reasonably preventable -- circumvents the purposes and
7 intentions of the standards at 40 C.F.R. Part 60, Subpart J;

8 WHEREAS, EPA recognizes that "Malfunctions," as defined in Paragraph 10.BB. of
9 this Consent Decree and 40 C.F.R. § 60.2, of the "Sulfur Recovery Plants" or of "Upstream
10 Process Units" may result in flaring of "Acid Gas" or "Sour Water Stripper Gas" on occasion, as
11 those terms are defined herein, and that such flaring does not violate 40 C.F.R. § 60.11(d) if the
12 owner or operator, to the extent practicable, maintains and operates such units in a manner
13 consistent with good air pollution control practice for minimizing emissions during these
14 periods;

15 WHEREAS, discussions between the Parties have resulted in the settlement embodied
16 in the Consent Decree;

17 WHEREAS, Chevron has waived any applicable federal, state or local requirements of
18 statutory notice of the alleged violations;

19 WHEREAS, notwithstanding the foregoing reservations, the Parties agree that:
20 (a) settlement of the matters set forth in the Complaint (filed herewith) is in the best interests of
21 the Parties and the public; and (b) entry of the Consent Decree without litigation is the most
22 appropriate means of resolving this matter;

23 WHEREAS, the Parties recognize, and the Court by entering the Consent Decree finds,
24 that the Consent Decree has been negotiated at arms length and in good faith and that the
25 Consent Decree is fair, reasonable, and in the public interest;

26 NOW THEREFORE, with respect to the matters set forth in the Complaint and in
27 Section XVI of this Consent Decree ("Effect of Settlement"), and before the taking of any
28 testimony, without adjudication of any issue of fact or law, and upon the consent and agreement

1 of the Parties to the Consent Decree, it is hereby ORDERED, ADJUDGED and DECREED as
2 follows:

3 **I. JURISDICTION AND VENUE**

4 1. This Court has jurisdiction over the subject matter of this action and over the
5 Parties pursuant to 28 U.S.C. §§ 1331, 1345 and 1355. In addition, this Court has jurisdiction
6 over the subject matter of this action pursuant to Sections 113(b) and 167 of the CAA, 42 U.S.C.
7 §§ 7413(b) and 7477, Sections 325(a), (b), and (c) of EPCRA, 42 U.S.C. § 11045(a), (b), and (c),
8 and Section 109(c) of CERCLA, 42 U.S.C. § 9609(c). The United States' complaint states a
9 claim upon which relief may be granted for injunctive relief and civil penalties against Chevron
10 under the Clean Air Act, EPCRA, and CERCLA. Authority to bring this suit is vested in the
11 United States Department of Justice by 28 U.S.C. §§ 516 and 519, Section 305 of the CAA, 42
12 U.S.C. § 7605, Section 325 of EPCRA, 42 U.S.C. § 11045, and Section 109(c) of CERCLA, 42
13 U.S.C. § 9609(c).

14 2. Venue is proper in the Northern District of California pursuant to Section
15 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c), and 1395(a).
16 Chevron consents to the personal jurisdiction of this Court, waives any objections to venue in
17 this District, and does not object to the intervention of the Plaintiff-Intervenors in this action.

18 3. Notice of the commencement of this action has been given to the State of
19 Hawaii, the State of Mississippi, the State of Utah, the California Air Resources Board, the
20 BAAQMD and the South Coast Air Quality Management District in accordance with Section
21 113(a)(1) of the Clean Air Act, 42 U.S.C. § 7413(a)(1), and as required by Section 113(b) of the
22 CAA, 42 U.S.C. § 7413(b).

23
24 **II. APPLICABILITY AND BINDING EFFECT**

25 4. The provisions of the Consent Decree shall apply to the Chevron Refineries.
26 The provisions of the Consent Decree shall be binding upon the United States, the Plaintiff-
27 Intervenors, and Chevron and its agents, successors, and assigns.

28 5. Chevron agrees not to contest the validity of the Consent Decree in any

1 subsequent proceeding to implement or enforce its terms.

2 6. Effective from the Date of Entry of the Consent Decree until its termination,
3 Chevron agrees that the Chevron Refineries are covered by this Consent Decree. Effective from
4 the Date of Lodging of the Consent Decree, Chevron shall give written notice of the Consent
5 Decree to any successors in interest to any of the Chevron Refineries prior to the transfer of
6 ownership or operation of any portion of any of the Chevron Refineries and shall provide a copy
7 of the Consent Decree to any successor in interest. Chevron shall notify the United States and
8 the appropriate Plaintiff-Intervenor in accordance with the notice provisions set forth in
9 Paragraph 231 (Notice), of any successor in interest at least thirty (30) days prior to any such
10 transfer.

11 7. Chevron shall condition any transfer, in whole or in part, of ownership of,
12 operation of, or other interest (exclusive of any non-controlling non-operational shareholder
13 interest) in, any of the Chevron Refineries upon the execution by the transferee of a modification
14 to the Consent Decree, which makes the terms and conditions of the Consent Decree that apply
15 to the respective Chevron Refinery applicable to the transferee. In the event of such transfer,
16 Chevron shall notify the parties listed in Paragraph 231. By no earlier than thirty days after
17 such notice, Chevron may file a motion to modify the Consent Decree with the Court to make
18 the terms and conditions of the Consent Decree applicable to the transferee. Chevron shall be
19 released from the obligations and liabilities of this Consent Decree unless the United States
20 opposes the motion and the Court finds that the transferee does not have the financial and
21 technical ability to assume the obligations and liabilities under the Consent Decree.

22 8. Chevron shall be solely responsible for ensuring that performance of the work
23 contemplated under this Consent Decree is undertaken in accordance with the deadlines and
24 requirements contained in this Consent Decree and any attachments hereto. Chevron shall
25 provide a copy of the applicable provisions of this Consent Decree to each consulting or
26 contracting firm that is retained to perform work required under Sections V.L. or V.M. of this
27 Consent Decree, upon execution of any contract relating to such work. Copies of the relevant
28 portions of the Consent Decree do not need to be supplied to firms who are retained solely to

1 supply materials or equipment to satisfy requirements under Sections V.L. or V.M. of this
2 Consent Decree.

3 **III. OBJECTIVES**

4 9. It is the purpose of the Parties in this Consent Decree to further the objectives
5 of the federal Clean Air Act, the California Health and Safety Code Section 40000 *et seq.* and the
6 California State Implementation Plan, the Hawaii Revised Statutes (1993) (as amended), the
7 Hawaii Department of Health’s Air Pollution Control rules, Chapter 11-60.1, Hawaii
8 Administrative Rules and the Hawaii State Implementation Plan, the Mississippi Air and Water
9 Pollution Control Act codified at Miss. Code Ann. § 49-17-1 *et seq.* (Rev. 1999) and the
10 Mississippi State Implementation Plan, the Utah Code Section 19-2, Utah Administrative Code
11 R307, and the Utah State Implementation Plan.

12
13 **IV. DEFINITIONS**

14 10. Unless otherwise defined herein, terms used in the Consent Decree shall have
15 the meaning given to those terms in the Clean Air Act, and the implementing regulations
16 promulgated thereunder. The following terms used in the Consent Decree shall be defined,
17 solely for purposes of the Consent Decree and the reports and documents submitted pursuant
18 thereto, as follows:

19 A. “Acid Gas” shall mean any gas that contains hydrogen sulfide and is generated
20 at a refinery by the regeneration of an amine solution.

21 B. “Acid Gas Flaring” or “AG Flaring” shall mean the combustion of an Acid
22 Gas and/or Sour Water Stripper Gas in an AG Flaring Device.

23 C. “Acid Gas Flaring Device” or “AG Flaring Device” shall mean any device at
24 the Chevron Refineries that is used for the purpose of combusting Acid Gas and/or Sour Water
25 Stripper Gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid.
26 The AG Flaring Devices currently in service at the Chevron Refineries are identified in
27 Appendix F to the Consent Decree. To the extent that, during the duration of the Consent
28 Decree, the Chevron Refineries utilize AG Flaring Devices other than those specified in

1 Appendix F for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG
2 Flaring Devices shall be covered under this Consent Decree.

3 D. "Acid Gas Flaring Incident" or "AG Flaring Incident" shall mean the
4 continuous or intermittent combustion of Acid Gas and/or Sour Water Stripper Gas that results in
5 the emission of sulfur dioxide equal to, or in excess of, five-hundred (500) pounds in any twenty-
6 four (24) hour period; provided, however, that if five-hundred (500) pounds or more of sulfur
7 dioxide have been emitted in a twenty-four (24) hour period and flaring continues into
8 subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which
9 results in emissions equal to, or in excess of five-hundred (500) pounds of sulfur dioxide, then
10 only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping
11 periods are measured from the initial commencement of flaring within the AG Flaring Incident.

12 E. [Omitted]

13 F. "Calendar quarter" shall mean the three month period ending on March 31st,
14 June 30th, September 30th, and December 31st.

15 G. "CEMS" shall mean continuous emissions monitoring system.

16 H. "Chevron" shall mean Chevron U.S.A. Inc. and its operating division Chevron
17 Products Company, and their respective successors and assigns and their respective agents,
18 officers, directors, and employees in their capacities as such.

19 I. "Chevron Pilot Plant" shall mean Chevron's proprietary facility
20 used to conduct FCCU catalyst evaluation and performance studies.

21 J. "Chevron Refineries" shall mean the El Segundo Refinery, Richmond
22 Refinery, Pascagoula Refinery, Hawaii Refinery and the Salt Lake City Refinery.

23 K. "Consent Decree" or "Decree" shall mean this Consent Decree, including any
24 and all appendices attached to the Consent Decree.

25 L. "CO" shall mean carbon monoxide.

26 M. [Omitted]

27 N. "Current Generation Ultra-Low NOx Burners" shall mean those burners that
28 are designed to achieve a NOx emission rate of 0.020 to 0.040 lb/mmBTU HHV when firing

1 natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation
2 actual emissions exceed 0.040 lb/mmBTU HHV.

3 O. "Date of Entry of the Consent Decree" or "Date of Entry" shall mean the date
4 the Consent Decree is approved or signed by the United States District Court Judge.

5 P. "Date of Lodging of the Consent Decree" or "Date of Lodging" shall mean the
6 date the Consent Decree is filed for lodging with the Clerk of the Court for the United States
7 District Court for the Northern District of California.

8 Q. "Day" or "Days" as used herein shall mean a calendar day or days.

9 R. "El Segundo Refinery" shall mean the refinery owned and operated by
10 Chevron in El Segundo, California.

11 S. "FCCU" as used herein shall mean a fluidized catalytic cracking unit and its
12 regenerator and associated CO boiler(s) where present.

13 T. "Flaring Device" shall mean either an AG and/or an HC Flaring Device.

14 U. "Fuel Oil" shall mean any liquid fossil fuel with sulfur content of greater than
15 0.05% by weight.

16 V. "Hawaii Refinery" shall mean the refinery owned and operated by Chevron in
17 Kapolei, Hawaii.

18 W. "Hydrocarbon Flaring" or "HC Flaring" shall mean the combustion of refinery
19 -generated gases, except for Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, in a
20 Hydrocarbon Flaring Device.

21 X. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean, a flare
22 device used to safely control (through combustion) any excess volume of a refinery generated
23 gas other than Acid Gas and/or Sour Water Stripper Off Gas and/or Tail Gas. The HC Flaring
24 Devices currently in service at the Chevron Refineries are identified in Appendix F to the
25 Consent Decree. To the extent that, during the duration of the Consent Decree, the Chevron
26 Refineries utilize HC Flaring Devices other than those specified in Appendix F for the purpose
27 of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water
28 Stripper Gas, those HC Flaring Devices shall be covered under this Consent Decree.

1 Y. “Hydrocarbon Flaring Incident” or “HC Flaring Incident” shall mean the
2 continuous or intermittent Hydrocarbon Flaring, except for Acid Gas or Sour Water Stripper Gas
3 or Tail Gas, at a Hydrocarbon Flaring Device that results in the emission of sulfur dioxide equal
4 to, or greater than five hundred (500) pounds in a 24-hour period; provided, however, that if
5 five-hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24)
6 hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24)
7 hour period(s), each period of which results in emissions equal to, or in excess of five-hundred
8 (500) pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred.
9 Subsequent, contiguous, non-overlapping periods are measured from the initial commencement
10 of Flaring within the HC Flaring Incident.

11 Z. “Hydrotreater Outage” shall mean the period of time during which the FCCU
12 operation is affected as a result of catalyst change-out operations or shutdowns required by
13 ASME pressure vessel requirements or state boiler codes, or as a result of Malfunction, that
14 prevents the hydrotreater from effectively producing the quantity and quality of feed necessary
15 to achieve established FCCU emission performance.

16 AA. “Low NO_x Combustion Promoter” shall mean a catalyst that is added to a
17 FCCU consistent with Appendix A that minimizes NO_x emissions while maintaining its
18 effectiveness as a combustion promotor.

19 BB. “Malfunction” shall mean, as specified in 40 C.F.R. § 60.2, “any sudden,
20 infrequent, and not reasonably preventable failure of air pollution control equipment, process
21 equipment, or a process to operate in a normal or usual manner. Failures that are caused in part
22 by poor maintenance or careless operation are not malfunctions.”

23 CC. “Natural Gas Curtailment” shall mean a restriction imposed by a public utility
24 limiting Chevron’s ability to obtain or use natural gas.

25 DD. “Next Generation Ultra-Low NO_x Burners” or “Next Generation ULNBs”
26 shall mean those burners new to the market that are designed to achieve a NO_x emission rate of
27 less than or equal to 0.020 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full
28 design load without air preheat, even if upon installation actual emissions exceed 0.020

1 lb/mmBTU HHV.

2 EE. "NOx" shall mean nitrogen oxides.

3 FF. "NOx-Reducing Catalyst Additives" shall mean a catalyst additive that is
4 introduced to an FCCU to reduce NOx emissions through reduction or controlled oxidation of
5 intermediates consistent with Appendix A.

6 GG. "Paragraph" shall mean a portion of this Consent Decree identified by an
7 Arabic numeral.

8 HH. "PEMS" shall mean predictive emissions monitoring systems developed in
9 accordance with Appendix C to this Consent Decree.

10 II. "PM" shall mean particulate matter as measured by 40 C.F.R. Part 60,
11 Appendix A Method 5B or 5F.

12 JJ. "Parties" shall mean the United States, the Plaintiff-Intervenors, and Chevron.

13 KK. "Pascagoula Petrochemical Plant" shall mean the petrochemical plant operated
14 by Chevron in Pascagoula, Mississippi.

15 LL. "Pascagoula Refinery" shall mean the refinery owned and operated by
16 Chevron in Pascagoula, Mississippi, which shall include the Pascagoula Petrochemical Plant
17 except as otherwise specifically set forth in this Consent Decree.

18 MM. "Plaintiff-Intervenors" shall mean the State of Hawaii, the Mississippi
19 Commission on Environmental Quality, an agency of the State of Mississippi, the State of Utah,
20 and the BAAQMD.

21 NN. "Richmond Refinery" shall mean the refinery owned and operated by Chevron
22 in Richmond, California.

23 OO. "Root Cause" shall mean the primary cause(s) of an AG Flaring Incident(s),
24 Hydrocarbon Flaring Incident, or a Tail Gas Incident(s) as determined through a process of
25 investigation.

26 PP. "Salt Lake City Refinery" shall mean the refinery owned and operated by
27 Chevron in Salt Lake City, Utah.

28 QQ. "Shutdown", as specified in 40 C.F.R. § 60.2, shall mean the cessation of

1 operation of equipment for any purpose.

2 RR. "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the
3 process of stripping refinery sour water.

4 SS. "SO₂" shall mean sulfur dioxide.

5 TT. "SO₂- Reducing Catalyst Additives" shall mean a catalyst additive that is
6 introduced to an FCCU to reduce SO₂ emissions by reduction and adsorption.

7 UU. "Startup", as specified in 40 C.F.R. § 60.2, shall mean the setting in operation
8 of equipment for any purpose.

9 VV. "Sulfur Recovery Plant" or "SRP" shall mean a process unit that recovers
10 sulfur from hydrogen sulfide by a vapor phase catalytic reaction of sulfur dioxide and hydrogen
11 sulfide.

12 WW. "Sulfur Recovery Unit" or "SRU" shall mean a single component of a Sulfur
13 Recovery Plant, commonly referred to as a Claus train.

14 XX. "Tail Gas Unit" or "TGU" shall mean a control system utilizing a technology
15 for reducing emissions of sulfur compounds from a Sulfur Recovery Plant.

16 YY. "Tail Gas Incident" shall mean, for the purpose of this Consent Decree,
17 combustion of Tail Gas that either is:

18 i. Combusted in a flare and results in 500 pounds or more of SO₂ emissions in any
19 24 hour period; or

20 ii. Combusted in a thermal incinerator and results in excess emissions of 500
21 pounds or more of SO₂ emissions in any 24-hour period. Only those time
22 periods which are in excess of a SO₂ concentration of 250 ppm (rolling twelve-
23 hour average) shall be used to determine the amount of excess SO₂ emissions
24 from the incinerator, provided, however, that continued combustion of tail gas in
25 an incinerator at the Salt Lake City SRP or at Pascagoula SRU 2/3 that occurs
26 prior to Chevron's acceptance of NSPS J applicability for those units as required
27 by this Consent Decree shall not be a Tail Gas Incident.

28 Chevron shall use good engineering judgment and/or other monitoring data during

1 periods in which the SO₂ continuous emission analyzer has exceeded the range of the instrument
2 or is out of service.

3 ZZ. "Torch Oil" shall mean FCCU feedstock or cycle oils that are combusted in the
4 FCCU regenerator to assist in starting up or restarting the FCCU, hot standby of the FCCU, or to
5 maintain regenerator heat balance in the FCCU.

6 AAA. "Upstream Process Units" shall mean all amine contactors, amine scrubbers,
7 and sour water strippers at the Chevron Refineries, as well as all process units at the refineries
8 that produce gaseous or aqueous waste streams that are processed at amine contactors, amine
9 scrubbers, or sour water strippers.

10
11 **V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS**

12 **A. NOx Emissions Reductions from FCCUs:** Chevron shall implement a program to
13 reduce NOx emissions from the Fluid Catalytic Cracking Units ("FCCU") at the
14 Chevron Refineries. Chevron shall incorporate lower NOx emission limits into permits
15 and will demonstrate future compliance with the lower emission limits through the use
16 of CEMS.

17 11. **Compliance with Specific Emissions Limits (Richmond and El Segundo**
18 **FCCUs).**

19 a. **Richmond Refinery FCCU:** Beginning upon Date of Entry, Chevron shall
20 comply with a NOx emission limit of 20 ppmvd @ 0% O₂ on a 365 day rolling average basis and
21 40 ppmvd @ 0% O₂ on a 7 day rolling average basis from the FCCU at its Richmond Refinery.

22 b. **El Segundo Refinery FCCU:** No later than December 31, 2008, Chevron shall
23 comply with a NOx emission limit of 20 ppmvd @ 0% O₂ on a 365 day rolling average basis and
24 40 ppmvd @ 0% O₂ on a 7 day rolling average basis from the FCCU at its El Segundo Refinery.

25 c. NOx emissions during periods of Startup, Shutdown, or Malfunction shall not
26 be used in determining compliance with the emission limit of 40 ppmvd @ 0% O₂ on a 7 day
27 rolling average basis, provided that during such periods Chevron implements good air pollution
28 control practices to minimize NOx emissions.

1 12. **Use of NOx Reducing Catalyst Additives and Low NOx Combustion**

2 **Promoter to Reduce NOx (Pascagoula, Hawaii and Salt Lake City FCCUs):** In order to
 3 reduce NOx emissions and establish lower FCCU NOx emission limits at the Pascagoula,
 4 Hawaii, and Salt Lake City Refinery FCCUs, Chevron shall use NOx Reducing Catalyst
 5 Additive and Low NOx Combustion Promoter. The program to reduce NOx emissions at these
 6 FCCUs shall consist of the following steps: a baseline data collection period for use in
 7 developing a model of NOx emissions; a short term trial period to determine which NOx
 8 reducing catalyst additive works best in each FCCU; an optimization period to determine
 9 optimized addition rates of NOx reducing catalyst additive and low NOx Combustion promoter;
 10 and a demonstration period to establish 365-day rolling average and short term (*e.g.*, 24-hour or
 11 7-day rolling average) NOx emission limits.

12 a. **Program Schedule for Salt Lake City FCCU.** By not later than December 31,
 13 2004, Chevron shall notify EPA whether Chevron will install a FCCU feed hydrotreater at the
 14 FCCU at its Salt Lake City Refinery for purposes of complying with Clean Fuels requirements.
 15 For each required step in the NOx emissions reduction program set forth in this Paragraph 12,
 16 two alternative compliance dates are listed for the Salt Lake City FCCU. The first date will
 17 apply and be enforceable under this Consent Decree only if Chevron notifies EPA that it will not
 18 install a FCCU feed hydrotreater. The second date will apply and be enforceable under this
 19 Consent Decree only if Chevron notifies EPA that it will install a FCCU feed hydrotreater.

20 b. **NOx Baseline Data and NOx Model.** Chevron shall submit to EPA and the
 21 appropriate Plaintiff-Intervenor a report of 12 months of baseline data and a report describing a
 22 model to predict uncontrolled NOx concentration and mass emission rate by the following dates
 23 and for the following baseline time periods for each of the following FCCUs:

FCCU	Baseline Start	Baseline End	Report
Hawaii	December 31, 2005	December 31, 2006	February 28, 2007
Pascagoula	June 30, 2004	June 30, 2005	August 31, 2005

28

1	Salt Lake City	December 31, 2004	December 31, 2005	February 28, 2006
2		or	or	or
3		June 30, 2006	June 30, 2007	August 31, 2007

4 The baseline data shall include all data considered in development of the model on a daily
5 average basis, and, at a minimum, the following data on a daily average basis:

- 6 i. Regenerator flue gas temperature;
- 7 ii. Coke burn rate in pounds per hour;
- 8 iii. FCCU feed rate in barrels per day;
- 9 iv. FCCU feed API gravity;
- 10 v. FCCU feed sulfur and basic nitrogen content as a weight %, except that if,
11 after 30 days of daily monitoring of the FCCU feed nitrogen content for the
12 Salt Lake City and Hawaii FCCUs, the variability of feed nitrogen content is
13 less than one standard deviation from the mean, Chevron may commence
14 monitoring and recording the feed nitrogen content at the Salt Lake City and
15 Hawaii FCCUs through daily sampling composited on a weekly basis for the
16 remainder of the baseline period; in addition, after this 30 day period, Chevron
17 may propose, for EPA approval, alternate sulfur and nitrogen data collection
18 requirements;
- 19 vi. Estimated percentage, and where available, actual percentage of each type of
20 FCCU feed component (i.e. atmospheric gas oil, vacuum gas oil, atmospheric
21 tower bottoms, vacuum tower bottoms, etc.);
- 22 vii. Estimated percentage, and where available, actual percentage by volume of the
23 FCCU feed that is hydrotreated;
- 24 viii. CO boiler firing rate and fuel type, if applicable;
- 25 ix. CO boiler combustion temperature, if applicable;
- 26 x. Total Catalyst addition rate;
- 27 xi. NOx and SO2 Reducing Catalyst Additive and addition rates, conventional
28 combustion promoter addition rates, and/or Low NOx Combustion Promoter

1 addition rates; and

2 xii. Hourly and daily SO₂, NO_x, CO, and O₂ concentrations.

3 Upon request by EPA, Chevron shall submit any additional, available data that EPA determines
 4 it needs to evaluate the model. The report describing the model shall include a description of
 5 how the model was developed including which parameters were considered, why parameters
 6 were eliminated, efforts and results of model validation, and the statistical methods used to arrive
 7 at the equation to predict uncontrolled NO_x concentration and mass emission rate.

8 c. Use of Low-NO_x Combustion Promoter:

9 i. Chevron shall identify, for EPA approval, the Low NO_x Combustion Promoter
 10 that Chevron proposes to use by the following dates for each of the following
 11 FCCUs:

12	Hawaii	June 30, 2007
13	Pascagoula	September 30, 2004
14	Salt Lake City	March 31, 2005 or September 30, 2006

15 Chevron may conduct studies of Low NO_x Combustion Promoter performance
 16 at the Chevron Pilot Plant and rely upon these studies as appropriate for
 17 purposes of screening and selecting the promoter to be proposed by Chevron
 18 for use under this Paragraph 12. Chevron shall submit the data generated in
 19 any such studies to EPA at the time that Chevron proposes its Low NO_x
 20 Combustion Promoter.

21 ii. Chevron shall commence and complete a program of minimization of use of
 22 conventional Pt-based combustion promoter to that amount necessary to
 23 control afterburn and then complete replacement of its use with Low NO_x
 24 Combustion Promoter. Chevron shall complete this program in accordance
 25 with the protocol set forth in Appendix A by the following dates for each of
 26 the following FCCUs:

27	<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
28	Hawaii	March 31, 2008	September 30, 2008

1		Pascagoula	June 30, 2005	December 31, 2005
2		Salt Lake City	December 31, 2005	June 30, 2006
3		or		or
4			June 30, 2007	December 31, 2007

5 iii. By the following dates, Chevron shall submit a report to EPA and the
6 appropriate Plaintiff-Intervenor on the effect of minimization of use of
7 conventional Pt-based combustion promoter and the use of Low NOx
8 combustion promoter for each of the following FCCUs:

9		Hawaii	October 31, 2008	
10		Pascagoula	January 31, 2006	
11		Salt Lake City	July 31, 2006	or January 31, 2008

12 iv. Chevron may use conventional Pt-based combustion promoter on an
13 intermittent basis during the optimization and demonstration periods, as
14 needed to avoid unsafe operation of the FCCU regenerator and to comply with
15 CO emission limits. Chevron shall undertake appropriate measures and/or
16 adjust operating parameters with a goal of eliminating such use.

17 Notwithstanding the foregoing, Chevron shall not be required to adjust
18 operating parameters in a way that would limit conversion or processing rates.

19 v. Chevron may, upon EPA approval, discontinue use of Low NOx combustion
20 promoter if Chevron demonstrates that it has adjusted other parameters and
21 that such promoter does not adequately control afterburn and/or causes CO
22 emissions to approach or exceed applicable limits. Notwithstanding the
23 foregoing, Chevron shall not be required to adjust operating parameters in a
24 way that would limit conversion or processing rates.

25 d. NOx Reducing Catalyst Additives - Short Term Trials

26 i. By the following dates, Chevron shall identify for EPA approval at least two
27 commercially available NOx Reducing Catalyst Additives that Chevron
28 proposes to use for short term trials and submit a protocol to EPA and the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

appropriate Plaintiff-Intervenor for conducting the trials at each of the following FCCUs:

- Hawaii June 30, 2007
- Pascagoula March 31, 2005
- Salt Lake City March 31, 2005 or September 30, 2006

Chevron may conduct studies of NOx reducing additive performance at the Chevron Pilot Plant and rely upon these studies as appropriate for purposes of screening and selecting the additives to be proposed by Chevron for use in the short term trials under this Paragraph 12. Chevron shall submit the data generated in any such studies to EPA at the time that Chevron proposes its trial additives.

ii. Chevron shall propose use of at least two NOx reducing additives that are likely to perform the best in each FCCU. EPA will base its approval or disapproval on its assessment of the performance of the proposed additives in other FCCUs and the similarity of those FCCUs to Chevron’s FCCUs, with the objective of trialing NOx reducing additives likely to have the best performance in reducing NOx emissions. In the event that Chevron submits less than two approved additives, EPA shall identify other approvable additives to Chevron.

iii. Chevron shall trial at least two additives. Chevron shall commence and complete the trials of the NOx reducing additives by the following dates for each of the following FCCUs:

<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
Hawaii	September 30, 2008	March 31, 2009
Pascagoula	December 31, 2005	June 30, 2006
Salt Lake City	June 30, 2006	December 31, 2006
	December 31, 2007	June 30, 2008

1 iv. Chevron shall submit a report to EPA and the appropriate Plaintiff-Intervenor
2 that describes the performance of each NOx reducing catalyst additive that was
3 trialed by the following dates for each of the following FCCUs:

- 4 Hawaii April 30, 2009
- 5 Pascagoula July 31, 2006
- 6 Salt Lake City January 31, 2007 or July 31, 2008

7 v. Chevron shall propose to use the best performing additive as measured by
8 percentage of NOx emissions reduced and the concentration to which NOx
9 emissions were reduced in the trials. EPA will either approve the proposed
10 additive or approve another additive that was trialed for use in the optimization
11 study. Upon request by EPA, Chevron shall submit any additional available
12 data that EPA determines it needs to evaluate the trials.

13 e. NOx Reducing Catalyst Additives - Optimization Study:

14 i. By the following dates, Chevron shall submit, for EPA approval, a proposed
15 protocol consistent with the requirements of Appendix A for optimization
16 studies to establish the optimized NOx reducing additive and Low NOx
17 combustion promoter addition rates for each of the following FCCUs:

- 18 Hawaii April 30, 2009
- 19 Pascagoula July 31, 2006
- 20 Salt Lake City January 31, 2007 or July 31, 2008

21 The protocol shall include identification of the additive, methods to calculate
22 effectiveness, cost effectiveness, methods for baseloading, and percent additive
23 to be used at each increment tested.

24 ii. Chevron shall commence and complete the optimization study of the NOx
25 reducing additive and low NOx Combustion promoter in accordance with the
26 approved protocol and Appendix A by the following dates for each of the
27 following FCCUs:

28

	<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
1			
2	Hawaii	June 30, 2009	December 31, 2009
3	Pascagoula	September 30, 2006	March 31, 2007
4	Salt Lake City	March 31, 2007	September 30, 2007
5		September 30, 2008	March 31, 2009

6 iii. Notwithstanding the foregoing, Chevron will not be required to add increasing
 7 increments of catalyst additive beyond an additive rate that results in any of the
 8 following:

- 9 (a) The FCCU meets 20 ppmvd NOx @ 0% O2 on a 365-day rolling
 10 average, in which case Chevron shall agree to accept a limit of 20
 11 ppmvd NOx @ 0% O2 on a 365-day rolling average basis at the
 12 conclusion of the Demonstration Period ;
 - 13 (b) Incremental pickup factor <1.8 lb NOx/lb additive
 - 14 (c) Total cost of the additive > \$10,000/ton NOx removed
 - 15 (d) FCCU is operating at 2.0% Weight % NOx reducing catalyst additive
- 16 If an additive limits the FCCU’s ability to control CO emissions to below 500
 17 ppmvd CO corrected to 0% O2 on a 1-hour basis and cannot be reasonably
 18 compensated for by adjusting other parameters, then the additive rate shall be
 19 reduced to a level at which the additive no longer causes such effects.

20 iv. By the following dates, Chevron shall report to EPA and the appropriate
 21 Plaintiff-Intervenor the results of the optimization study and propose optimized
 22 addition rates of all catalysts and promoters to be used for the demonstration
 23 period for EPA approval for each of the following FCCUs:

24	Hawaii	January 31, 2010
25	Pascagoula	April 30, 2007
26	Salt Lake City	October 31, 2007 or April 30, 2009

27 Upon request by EPA, Chevron shall submit any additional available data that
 28 EPA determines it needs to evaluate the optimization study.

1 v. At any time prior to 180 days after commencement of the demonstration
 2 period, Chevron may agree to accept FCCU emission limits of 20 ppmvd NOx
 3 @ 0% O2 (365-day rolling average) and 40 ppmvd NOx @ 0% O2 (7-day
 4 rolling average) in lieu of completing any remaining obligations of Paragraph
 5 12 and 13.

6 f. NOx Reducing Catalyst Additives - Demonstration:

7 i. Chevron shall commence and complete demonstration of the EPA approved
 8 NOx reducing additive and low NOx Combustion promoter at the EPA
 9 approved optimized addition rates by the following dates for each of the
 10 following FCCUs:

FCCU	Commence Date	Complete Date
Hawaii	December 31, 2009	June 30, 2011
Pascagoula	March 31, 2007	September 30, 2008
Salt Lake City	September 30, 2007	March 31, 2009
	March 31, 2009	September 30, 2010

16 ii. During the demonstration period, Chevron shall add NOx reducing catalyst
 17 and operate the FCCUs, CO Boilers (where applicable) and FCCU feed
 18 hydrotreaters (where applicable) in a manner that minimizes NOx emissions to
 19 the extent practicable and without interfering with conversion or processing
 20 rates.

21 iii. Chevron has made efforts to improve operation of the Hawaii FCCU to run at
 22 lower excess O2 during the 2003 turnaround. If the NOx emissions
 23 established during the baseline period for the Hawaii FCCU are >100 ppmvd
 24 @ 0% O2 on a 365-day rolling average at the conclusion of the baseline
 25 period, then Chevron shall evaluate further modifications that can be made to
 26 the FCCU to reduce NOx emissions, including potential improvement in air
 27 distribution, during the turnaround planned for 2008.

28

1 g. NOx Additive Performance Demonstration Report (“NOx Additive
 2 Demonstration Report”). Chevron will report the results of the demonstration (“NOx Additive
 3 Demonstration Report”) to EPA and the appropriate Plaintiff-Intervenor by the following dates
 4 for each of the following FCCUs.

5 Hawaii August 31, 2011

6 Pascagoula November 30, 2008

7 Salt Lake City May 31, 2009 or November 30, 2010

8 The NOx Additive Demonstration Report shall include, at a minimum, the NOx and O₂ CEMS
 9 data recorded during the Demonstration Period and all applicable baseline data on a daily
 10 average basis for the Demonstration Period.

11 **13. Establishing NOx Emissions Limits (Hawaii, Pascagoula and Salt Lake**
 12 **City FCCUs):**

13 a. In each NOx Additive Demonstration Report, Chevron shall propose a short
 14 term (*i.e.*, 24-hour or 7-day rolling average) and a long term (365-day rolling average)
 15 concentration-based (ppmvd) NOx emission limit as measured at 0% O₂. Chevron may propose
 16 alternative emissions limits to be applicable during Hydrotreater Outages or other alternative
 17 operating scenarios. Chevron shall comply with the emission limits it proposes for each FCCU
 18 beginning immediately upon submission of the NOx Additive Demonstration Report for that
 19 FCCU. Chevron shall continue to comply with these limits unless and until Chevron is required
 20 to comply with the emissions limits set by EPA pursuant to Paragraph 13.b., below. Upon
 21 request by EPA, Chevron shall submit any additional, available data that EPA determines it
 22 needs to evaluate the demonstration.

23 b. EPA will use the data collected about the FCCU during the baseline period, the
 24 Optimization Period, and the Demonstration Period, as well as all other available and relevant
 25 information, to establish limits for NOx emissions from the Hawaii, Pascagoula, and Salt Lake
 26 City FCCUs. EPA will establish a short term (*e.g.*, 24-hour or 7-day rolling average) and a 365-
 27 day rolling average concentration-based (ppmvd) NOx emission limits corrected to 0% oxygen.
 28 EPA will determine the limits based on: (i) the level of performance during the baseline,

1 Optimization and Demonstration periods; (ii) a reasonable certainty of compliance; and (iii) any
 2 other available and relevant information. EPA will notify Chevron of its determination of the
 3 concentration-based NOx emissions limit and averaging times for each FCCU, including how
 4 and whether emissions during Hydrotreater Outages are included in the 365-day rolling average.
 5 EPA may establish alternative emissions limits to be applicable during Hydrotreater Outages or
 6 other alternative operating scenarios. Chevron shall immediately (or within ninety (90) days, if
 7 EPA's limit is more stringent than the limit proposed by Chevron) operate the FCCU so as to
 8 comply with the EPA-established emission limits.

9 c. NOx emissions during periods of Startup, Shutdown, or Malfunction shall not
 10 be used in determining compliance with the short-term NOx emission limits established pursuant
 11 to this Paragraph 13, provided that during such periods Chevron implements good air pollution
 12 control practices to minimize NOx emissions.

13 14. [Omitted]

14 15. **Demonstrating Compliance with FCCU NOx Emission Limits.** Beginning
 15 no later than the dates set forth below for each FCCU, Chevron shall use NOx and O2 CEMS to
 16 monitor performance of the FCCU and to report compliance with the terms and conditions of this
 17 Consent Decree.

18	El Segundo	Date of Entry
19	Richmond	June 30, 2004
20	Hawaii	April 10, 2005
21	Pascagoula	June 30, 2004
22	Salt Lake City	June 30, 2004

23 The CEMS will be used to demonstrate compliance with the respective NOx emission limits
 24 established pursuant to Paragraphs 11 and 13. Chevron shall make CEMS data available to EPA
 25 and the appropriate Plaintiff-Intervenor upon demand as soon as practicable. Chevron shall
 26 install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in
 27 accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMs (excluding
 28 those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60

1 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B.
 2 With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix
 3 F §§ 5.1.1, 5.1.3 and 5.1.4, Chevron must conduct either a Relative Accuracy Audit (“RAA”) or a Relative
 4 Accuracy Test Audit (“RATA”) on each CEMS at least once every three (3) years. Chevron must also
 5 conduct Cylinder Gas Audits (“CGA”) each calendar quarter during which a RAA or a RATA is not
 6 performed. With respect to its Richmond Refinery, Chevron may conduct a Field Accuracy Test (“FAT”) as defined in BAAQMD regulations or procedures in lieu of the required RAA or CGA. With respect to
 7 the O₂ CEMS required by this Paragraph, in lieu of the audit points specified in 40 C.F.R. Part 60,
 8 Appendix F § 5.1.2., Chevron may audit the O₂ CEMS at 20-30% and 50-60% of the actual O₂ CEMS
 9 span value.
 10

11 **B. SO₂ Emissions Reductions from FCCUs.** Chevron shall implement a program to reduce SO₂
 12 emissions from the Fluid Catalytic Cracking Units (“FCCU”) at the Chevron Refineries.
 13 Chevron shall incorporate lower SO₂ emission limits into permits and will demonstrate future
 14 compliance with the lower emission limits through the use of CEMS.

15 16. **Compliance with Specific SO₂ Emission Limits (El Segundo, Hawaii, Pascagoula,**
 16 **and Salt Lake City FCCUs).**

17 a. El Segundo FCCU:

18 i. Interim SO₂ Emission Limit: By no later than Date of Entry, Chevron shall comply
 19 with an interim SO₂ emission limit of 35 ppmvd at 0% O₂ on a 365-day rolling
 20 average basis from the FCCU at its El Segundo Refinery.

21 ii. Final SO₂ Emission Limit: By no later than December 31, 2005, Chevron shall comply
 22 with a final SO₂ emission limit of 25 ppmvd @ 0% O₂ on a 365 day rolling average
 23 basis and 50 ppmvd @ 0% O₂ on a 7 day rolling average basis from the FCCU at its El
 24 Segundo Refinery. In addition, if Chevron discontinues use of the CO Boiler then
 25 Chevron shall seek further emissions reductions as set forth in Paragraph 19.

26 b. Hawaii FCCU: No later than June 30, 2007, Chevron shall comply with an interim
 27 SO₂ emission limit of 75 ppmvd at 0% O₂ on a 365-day rolling average basis from the FCCU at its Hawaii
 28 Refinery.

- 1 c. Pascagoula FCCU:
- 2 i. Interim SO2 Emission Limit: By no later than June 30, 2005, Chevron shall
- 3 comply with an interim SO2 emission limit of 100 ppmvd at 0% O2 on a 365-
- 4 day rolling average basis from the FCCU at its Pascagoula Refinery.
- 5 ii. Final SO2 Emission Limit: By no later than September 30, 2007, Chevron
- 6 shall comply with a final SO2 emission limit of 25 ppmvd @ 0% O2 on a 365
- 7 day rolling average basis and 50 ppmvd @ 0% O2 on a 7 day rolling average
- 8 basis from the FCCU at its Pascagoula Refinery.
- 9 d. Salt Lake City FCCU: With respect to the FCCU at its Salt Lake City
- 10 Refinery, Chevron shall either:
- 11 i. by no later than December 31, 2008, comply with a final SO2 emission limit of
- 12 25 ppmvd @ 0% O2 on a 365 day rolling average basis and 50 ppmvd @ 0%
- 13 O2 on a 7 day rolling average basis through feed hydrotreating and SO2
- 14 reducing catalyst additives; or
- 15 ii. in the event that feed hydrotreating and SO2 reducing catalyst additives are
- 16 insufficient to achieve the emissions limits set forth above, then by no later
- 17 than December 31, 2010, comply with a final SO2 emission limit of 25 ppmvd
- 18 @ 0% O2 on a 365 day rolling average basis and 50 ppmvd @ 0% O2 on a 7
- 19 day rolling average basis through installation and operation of a wet gas
- 20 scrubber or an EPA-approved SO2 reducing technology other than feed
- 21 hydrotreating or catalyst additives.
- 22 e. SO2 emissions during periods of Startup, Shutdown, or Malfunction shall not
- 23 be used in determining compliance with the emission limit of 50 ppmvd SO2 @ 0% O2 on a 7
- 24 day rolling average basis, provided that during such periods Chevron implements good air
- 25 pollution control practices to minimize SO2 emissions.

26 17. Use of SO2 Reducing Catalyst Additives to Reduce SO2 (Richmond and

27 Hawaii FCCUs): In order to reduce SO2 emissions and establish lower FCCU SO2 emission

28 limits at the Richmond and Hawaii Refinery FCCUs, Chevron shall use SO2 reducing catalyst

1 additive. The program to reduce SO₂ emissions at these FCCUs shall consist of the following
 2 steps: a baseline data collection period for use in developing a model of SO₂ emissions; a short
 3 term trial period to determine which SO₂ reducing catalyst additive works best in each FCCU;
 4 an optimization period to determine optimized addition rates of SO₂ reducing catalyst additive;
 5 and a demonstration period to establish 365-day rolling average and 7-day rolling average SO₂
 6 emission limits.

7 a. SO₂ Baseline Data and SO₂ Model. Chevron shall submit to EPA and the
 8 appropriate Plaintiff-Intervenor a report of baseline data and a report describing a model to
 9 predict SO₂ concentration and mass emission rate by the following dates and for the following
 10 baseline time periods for each of the following FCCUs:

<u>FCCU</u>	<u>Baseline Start</u>	<u>Baseline End</u>	<u>Report</u>
Hawaii	December 31, 2005	December 31, 2006	February 28, 2007
Richmond	June 30, 2004	June 1, 2005	August 31, 2005

14 The baseline data shall include all data considered in development of the model on a daily
 15 average basis, and, at a minimum, the following data on a daily average basis:

- 16 i. Regenerator flue gas temperature;
- 17 ii. Coke burn rate in pounds per hour;
- 18 iii. FCCU feed rate in barrels per day;
- 19 iv. FCCU feed API gravity;
- 20 v. FCCU feed sulfur content as a weight %, except that if, after 30 days of daily
 21 monitoring of the FCCU feed sulfur content for the Hawaii FCCU, the
 22 variability of feed sulfur content is less than one standard deviation from the
 23 mean, Chevron may commence monitoring and recording the feed sulfur
 24 content at the Hawaii FCCU through daily sampling composited on a weekly
 25 basis for the remainder of the baseline period; in addition, after this 30 day
 26 period, Chevron may propose, for EPA approval, alternate sulfur data
 27 collection requirements;

- 1 vi. Estimated percentage, and where available, actual percentage of each type of
2 FCCU feed component (i.e. atmospheric gas oil, vacuum gas oil, atmospheric
3 tower bottoms, vacuum tower bottoms, etc.);
- 4 vii. Estimated percentage, and where available, actual percentage by volume of the
5 FCCU feed that is hydrotreated;
- 6 viii. CO boiler firing rate and fuel type, if applicable;
- 7 ix. CO boiler combustion temperature, if applicable;
- 8 x. Total Catalyst addition rate;
- 9 xi. NOx and SO2 Reducing Catalyst Additive and addition rates, conventional
10 combustion promoter addition rates, and/or Low NOx Combustion Promoter
11 addition rates; and
- 12 xii. Hourly and daily SO₂, NO_x, CO, and O₂ concentrations.

13 Upon request by EPA, Chevron shall submit any additional, available data that EPA determines
14 is needed to evaluate the model. The report describing the model shall include a description of
15 how the model was developed including which parameters were considered, why parameters
16 were eliminated, efforts and results of model validation, and the statistical methods used to arrive
17 at the equation to predict uncontrolled SO₂ concentration and mass emission rate.

18 b. SO₂ Reducing Catalyst Additives - Short Term Trials

- 19 i. By the following dates, Chevron shall identify, for EPA approval, at least two
20 commercially available SO₂ Reducing Catalyst Additives that Chevron
21 proposes to use for short term trials with a protocol for conducting the trials for
22 each of the following FCCUs:

23 Hawaii March 31, 2006

24 Richmond September 30, 2004

25 Chevron may conduct studies of SO₂ reducing additive performance
26 at the Chevron Pilot Plant and rely upon these studies as appropriate for
27 purposes of screening and selecting the additives to be proposed by Chevron
28 for use in the short term trials under this Paragraph 17. Chevron shall submit

- 1 the data generated in any such studies to EPA and the appropriate Plaintiff-
 2 Intervenor at the time that Chevron proposes its additives to be trialed.
- 3 ii. Chevron shall propose use of at least two SO2 reducing additives that are
 4 likely to perform the best in each FCCU. EPA will base its approval or
 5 disapproval on its assessment of the performance of the proposed additives in
 6 other FCCUs and the similarity of those FCCUs to Chevron’s FCCUs, with the
 7 objective of trialing SO2 additives likely to have the best performance in
 8 reducing SO2 emissions. In the event that Chevron submits less than two
 9 approved additives, EPA shall identify other approvable additives to Chevron.
- 10 iii. Chevron shall trial at least two additives. Chevron shall commence and
 11 complete the trials of the SO2 reducing additives by the following dates for
 12 each of the following FCCUs:

<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
Hawaii	December 31, 2006	June 30, 2007
Richmond	June 1, 2005	December 31, 2005

- 16 iv. By the following dates, Chevron shall submit a report to EPA and the
 17 appropriate Plaintiff-Intervenor that describes the performance of each SO2
 18 reducing catalyst additive that was trialed for each of the following FCCUs:
- | | |
|----------|------------------|
| Hawaii | July 31, 2007 |
| Richmond | January 31, 2006 |
- 21 v. Chevron shall propose to use the best performing additive as measured by
 22 percentage of SO2 emissions reduced and the concentration to which SO2
 23 emissions were reduced in the trials. EPA will either approve the proposed
 24 additive or approve another additive that was trialed for use in the optimization
 25 study. Upon request by EPA, Chevron shall submit any additional available
 26 data that EPA determines is needed to evaluate the trials.
- 27 c. SO2 Reducing Catalyst Additives - Optimization Study:
- 28 i. By the following dates, Chevron shall submit, for EPA approval, a proposed

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

protocol consistent with the requirements of Appendix A for optimization studies to establish the optimized SO₂ reducing additive for each of the following FCCUs:

- Hawaii July 31, 2007
- Richmond January 31, 2006

The protocol shall include identification of the additive, methods for baseloading, and percent additive to be used at each increment tested.

ii. Chevron shall commence and complete the optimization study of the SO₂ reducing additive in accordance with the approved protocol and Appendix A by the following dates for each of the following FCCUs:

<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
Hawaii	September 30, 2007	March 31, 2008
Richmond	March 31, 2006	September 30, 2006

iii. Notwithstanding the foregoing, Chevron will not be required to add increasing increments of catalyst additive beyond an additive rate that results in any of the following:

- (a) The FCCU meets 25 ppmvd SO₂ @ 0% O₂ on a 365-day rolling average, in which case Chevron shall agree to accept limits of 25 ppmvd SO₂ @ 0% O₂ on a 365-day rolling average basis at the conclusion of the Demonstration Period;
- (b) Incremental pickup factor < 2.0 lb SO₂/lb additive;
- (c) FCCU is operating at 10.0 Weight % SO₂ reducing catalyst additive.

If an additive limits the processing rate or the conversion capability in a manner that cannot be reasonably compensated for by adjustment of other parameters, the additive level shall be reduced to a level at which the additive no longer causes such limits or effects.

1 iv. By the following dates, Chevron shall report to EPA and the appropriate
 2 Plaintiff-Intervenor the results of the optimization study and propose optimized
 3 addition rates of all catalysts to be used for the demonstration period for EPA
 4 approval for each of the following FCCUs:

Hawaii	April 30, 2008
Richmond	October 31, 2006

7 Upon request by EPA, Chevron shall submit any additional available data that
 8 EPA determines is needed to evaluate the optimization study.

9 v. At any time prior to 180 days after commencement of the demonstration
 10 period, Chevron may agree to accept FCCU emission limits of 25 ppmvd SO2
 11 @ 0% O2 (365-day rolling average) and 50 ppmvd SO2 @ 0% O2 (7-day
 12 rolling average) in lieu of completing any remaining obligations of Paragraphs
 13 17 and 18.

14 d. SO2 Reducing Catalyst Additives - Demonstration:

15 i. Chevron shall commence and complete demonstration of the EPA approved
 16 SO2 reducing additive at the EPA approved optimized addition rates by the
 17 following dates for each of the following FCCUs:

<u>FCCU</u>	<u>Commence Date</u>	<u>Complete Date</u>
Hawaii	March 31, 2008	June 30, 2011
Richmond	September 30, 2006	March 31, 2008

21 ii. During the demonstration period, Chevron shall add SO2 reducing catalyst and
 22 operate the FCCUs, CO Boilers (where applicable) and FCCU feed
 23 hydrotreaters (where applicable) in a manner that minimizes SO2 emissions to
 24 the extent practicable and without interfering with conversion or processing
 25 rates.

26 e. SO2 Additive Performance Demonstration Report (“SO2 Additive
 27 Demonstration Report”). Chevron will report the results of the demonstration (“SO2 Additive
 28 Demonstration Report”) to EPA and the appropriate Plaintiff-Intervenor by the following dates

1 SO₂ emission limits corrected to 0% oxygen. EPA will determine the limits based on: (i) the
2 level of performance during the baseline, Optimization and Demonstration periods; (ii) a
3 reasonable certainty of compliance; and (iii) any other available and relevant information. EPA
4 will notify Chevron of its determination of the concentration-based SO₂ emissions limit and
5 averaging times for each FCCU, including how and whether emissions during Hydrotreater
6 Outages are included in the 365-day rolling average. EPA may establish alternative emissions
7 limits to be applicable during Hydrotreater Outages or other alternative operating scenarios.
8 Chevron shall immediately (or within ninety (90) days, if EPA's limit is more stringent than the
9 limit proposed by Chevron) operate the FCCU so as to comply with the EPA-established
10 emission limits.

11 19. **Further SO₂ Emission Reductions from El Segundo FCCU.** If at any time
12 prior to June 30, 2009, Chevron determines that it will discontinue operation of the CO Boiler at
13 the El Segundo Refinery, Chevron will conduct a SO₂ Reducing Catalyst Evaluation Program
14 and, if necessary, a SO₂ Reducing Catalyst Demonstration Assessment, to further reduce SO₂
15 emissions from the El Segundo FCCU.

16 a. **Notice of Decision.** At least 60 days prior to discontinuing operation of the
17 CO Boiler at the El Segundo Refinery, Chevron will notify EPA in writing of its decision.
18 Within 60 days after discontinuing operation of the CO Boiler, Chevron shall identify for EPA
19 approval the SO₂ reducing additive it proposes to use during the Demonstration Assessment, if
20 conducted.

21 b. **SO₂ Reducing Catalyst Evaluation Program.** Within 180 days of the
22 discontinuation of use of the CO Boiler, Chevron shall complete a SO₂ Reducing Catalyst
23 Evaluation Program with the objective of accepting a final emission limit of 25 ppmvd @ 0% O₂
24 on a 365 day rolling average basis and 50 ppmvd @ 0% O₂ on a 7 day rolling average basis for
25 the El Segundo FCCU without operation of the CO Boiler.

26 c. **SO₂ Reducing Catalyst Demonstration Assessment:** Within 210 days after
27 discontinuing operation of the CO Boiler, Chevron shall either:

28 i. accept an SO₂ limit for the El Segundo FCCU of 25 ppmvd @ 0% O₂ on a

- 1 365 day rolling average basis and 50 ppmvd @ 0% O₂ on a 7 day rolling
2 average basis;
- 3 ii. initiate an SO₂ Reducing Catalyst Demonstration Assessment using an EPA-
4 approved SO₂ reducing additive at 10% by weight of total catalyst added for a
5 period of 18 months; or
- 6 iii. apply for EPA approval to add SO₂ reducing catalyst additive during the
7 Demonstration Assessment at less than 10% by weight of total catalyst added,
8 but no less than 5% by weight of total catalyst added, under the following
9 conditions:
- 10 (a) If Chevron demonstrates that addition of 10% by weight of SO₂
11 reducing catalyst additive results in a measurable reduction in
12 conversion or processing rate that cannot be compensated for by
13 adjustment of other operating parameters, then Chevron may request
14 that the addition rate be reduced to the higher of that level where such
15 reduction can be compensated for by adjustment of other operating
16 parameters or the level where such reduction is no longer measurable;
17 or
- 18 (b) If Chevron demonstrates that the incremental pickup factor is less
19 than 1.0 lb SO₂/lb SO₂ reducing catalyst additive when reducing
20 addition rate from 10% to 5% at 1.0% increments, then Chevron may
21 request that the addition rate be reduced to that rate at which the
22 incremental pickup factor falls below 1.0 lb SO₂/lb SO₂ reducing
23 catalyst additive.

24 As part of any application pursuant to this subparagraph, Chevron shall submit
25 a baseline model and baseline data as specified by Paragraph 17.a. using data
26 from the SO₂ Reducing Catalyst Evaluation Program as the baseline to
27 demonstrate the impact on processing rate or conversion and the incremental
28 pick-up factor.

1
2 iv. During the Demonstration Assessment, Chevron shall add SO₂ reducing
3 catalyst and operate the FCCU and FCCU feed hydrotreater in a manner that minimizes SO₂
4 emissions to the extent practicable and without interfering with conversion or processing rates.

5 v. If at any time during the Evaluation Program or Demonstration Assessment,
6 Chevron accepts a SO₂ limit for the El Segundo FCCU of 25 ppmvd @ 0% O₂
7 on a 365 day rolling average basis and 50 ppmvd @ 0% O₂ on a 7 day rolling
8 average basis, then Chevron may cease performance of the procedures set forth
9 above.

10 d. Demonstration Assessment Report. Within 30 days of completing the
11 Demonstration Assessment, Chevron will submit a report summarizing the results of the
12 Demonstration Assessment. The report shall include, at a minimum, the SO₂ and O₂ CEMS data
13 recorded during the Demonstration Assessment and all applicable baseline data as listed in
14 Paragraph 17.a. on a daily average basis for the Demonstration Assessment.

15 e. Finalizing Additional SO₂ Emissions Reductions for the El Segundo FCCU.

16 i. In its Demonstration Assessment Report, Chevron shall propose 7-day rolling
17 average and 365-day rolling average concentration-based (ppmvd) SO₂
18 emission limits as measured at 0% O₂. Chevron shall comply with the
19 emission limits it proposes beginning immediately upon submission of the
20 Demonstration Assessment Report. Chevron shall continue to comply with
21 this limit unless and until it is required to comply with the emission limits set
22 by EPA pursuant to this Paragraph. Upon request by EPA, Chevron shall
23 submit any additional, available data that EPA determines it needs to evaluate
24 the demonstration.

25 ii. EPA will use the data collected during the Demonstration Assessment, as well
26 as all other available and relevant information, to establish limits for SO₂
27 emissions from the El Segundo FCCU. EPA will establish 7-day rolling
28 average and 365-day rolling average concentration-based (ppmvd) SO₂

1 emission limits corrected to 0% oxygen. EPA will determine the limits based
 2 on: (a) the level of performance during the Evaluation Program and
 3 Demonstration Assessment periods; (b) a reasonable certainty of compliance;
 4 and (c) any other available and relevant information. EPA will notify Chevron
 5 of its determination of the concentration-based SO₂ emissions limit and
 6 averaging times for the El Segundo FCCU. Chevron shall immediately (or
 7 within ninety (90) days, if EPA's limit is more stringent than the limit
 8 proposed by Chevron) operate the FCCU so as to comply with the EPA-
 9 established emission limits.

10 f. During the time period from discontinuation of use of the CO Boiler to the
 11 establishment of a final SO₂ emission limit for the El Segundo FCCU in the absence of a CO
 12 Boiler, Chevron shall not be subject to stipulated penalties for exceeding the SO₂ emission limit
 13 for the El Segundo FCCU set forth in Paragraph 16.a.ii. of this Consent Decree, provided that
 14 Chevron's removal of the CO Boiler and subsequent activities under the Evaluation Program and
 15 Demonstration Assessment do not cause any increase in the SO₂ mass emission rate from the El
 16 Segundo FCCU and Chevron utilizes good air pollution control practices during this period.

17 20. **Demonstrating Compliance with FCCU SO₂ Emission Limits.** Beginning
 18 no later than the dates set forth below for each FCCU, Chevron shall use SO₂ and O₂ CEMS to
 19 monitor performance of the FCCU and to report compliance with the terms and conditions of this
 20 Consent Decree.

21	El Segundo	Date of Entry
22	Richmond	June 30, 2004
23	Hawaii	April 10, 2005
24	Pascagoula	June 30, 2004
25	Salt Lake City	June 30, 2004

26 The CEMS will be used to demonstrate compliance with the respective SO₂ emission limits
 27 established pursuant to Paragraph 16, 18, or 19. Chevron shall make CEMS data available to
 28 EPA and the appropriate Plaintiff-Intervenor upon demand as soon as practicable.

1 Chevron shall install, certify, calibrate, maintain, and operate all CEMS required by this
2 Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS
3 (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60
4 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60
5 Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R.
6 Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Chevron must conduct either a Relative Accuracy
7 Audit (“RAA”) or a Relative Accuracy Test Audit (“RATA”) on each CEMS at least once every
8 three (3) years. Chevron must also conduct Cylinder Gas Audits (“CGA”) each calendar quarter
9 during which a RAA or a RATA is not performed. With respect to its Richmond Refinery, Chevron
10 may conduct a Field Accuracy Test (“FAT”) as defined in BAAQMD regulations or procedures in
11 lieu of the required RAA or CGA. With respect to the O2 CEMS required by this Paragraph, in lieu
12 of the audit points specified in 40 C.F.R. Part 60, Appendix F § 5.1.2., Chevron may audit the O2
13 CEMS at 20-30% and 50-60% of the actual O2 CEMS span value.

14 21. **Hydrotreater Outages:** No later than December 31, 2004, Chevron shall submit
15 to EPA and the appropriate Plaintiff-Intervenor, for approval by EPA, a plan for the operation of the
16 FCCUs (including associated air pollution control equipment) at El Segundo, Richmond, Pascagoula
17 and, if a hydrotreater is installed, Salt Lake City, during Hydrotreater Outages in a way that
18 minimizes emissions as much as practicable. The plan shall, at a minimum, consider the use of low
19 sulfur feed, storage of hydrotreated feed, and an increase in additive addition rate. The short term
20 SO2 and NOx emission limits established pursuant to this Consent Decree shall not apply during
21 periods of FCCU feed Hydrotreater Outages provided that Chevron is in compliance with the plan
22 and is maintaining and operating its FCCUs in a manner consistent with good air pollution control
23 practices. Chevron shall comply with the approved plan at all times, including periods of Startup,
24 Shutdown, and Malfunction of the hydrotreater. In addition, in the event that Chevron asserts that
25 the basis for a specific Hydrotreater Outage is a shutdown (where no catalyst changeout occurs)
26 required by ASME pressure vessel requirements or applicable state boiler requirements, Chevron
27 shall submit a report to EPA that identifies the relevant requirements and justifies Chevron’s decision
28 to implement the shutdown during the selected time period.

28 **C. PM Emissions Reductions from FCCUs:** Chevron shall continue to control and may

1 further reduce particulate matter (“PM”) emissions from its Refineries by the operation
 2 and optimization of electrostatic precipitators (“ESPs”).

3 22. **Final PM Emission Limits for El Segundo FCCU.** By no later than March
 4 31, 2004, Chevron shall comply with an emission limit of 0.5 pounds of PM per 1000 pounds of
 5 coke burned on a 3-hour average basis for the El Segundo FCCU.

6 23. **PM Emission Limits for Hawaii, Pascagoula, Richmond, and Salt Lake**
 7 **City FCCUs.** In accordance with NSPS Subpart J, Chevron shall comply with an emission
 8 limit of 1.0 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis for the
 9 Hawaii, Pascagoula, Richmond, and Salt Lake City FCCUs, by no later than the dates set forth
 10 below for each refinery. Chevron shall also comply with all applicable Bay Area Air Quality
 11 Management requirements, including, but not limited to, Permit Condition 11066 and Regulation
 12 6, at the Richmond FCCU and use such results to demonstrate compliance with the above-
 13 identified emission limit.

	Richmond	Date of Entry
	Hawaii	April 10, 2005
	Pascagoula	April 10, 2005
	Salt Lake City	April 10, 2005

18 23A. **PM Testing for FCCUs.** Chevron shall follow the stack test protocol
 19 specified in 40 C.F.R. § 60.106(b)(2) to measure PM emissions on the FCCUs at its Refineries.
 20 Chevron shall propose and submit the stack test protocol to EPA and the appropriate Plaintiff-
 21 Intervenor, for approval by EPA, no later than three (3) months after the PM limit becomes
 22 effective at the relevant Refinery. Chevron shall conduct the first stack test no later than six (6)
 23 months after the PM limit becomes effective at the relevant Refinery. Chevron shall conduct
 24 annual stack tests at each FCCU. Upon demonstrating through at least three (3) annual tests that
 25 the PM limits are not being exceeded at a particular FCCU, Chevron may request EPA approval,
 26 to conduct tests less frequently than annually at that FCCU.

27 24. PM emissions during periods of Startup, Shutdown, or Malfunction shall not
 28 be used in determining compliance with the emission limits of 0.5 pounds of PM per 1000

1 pounds of coke burned on a 3-hour average basis or 1.0 pounds of PM per 1000 pounds of coke
 2 burned on a 3-hour average basis, provided that during such periods Chevron implements good
 3 air pollution control practices to minimize PM emissions.

4 25. **Opacity Monitoring at FCCUs.** By the dates set forth below, Chevron shall
 5 install and operate a Continuous Opacity Monitoring System (“COMS”) to monitor opacity at
 6 each of its Refinery FCCUs.

7	Pascagoula	Date of Entry
8	Hawaii	April 10, 2005
9	Salt Lake City	April 10, 2005
10	El Segundo	April 10, 2005
11	Richmond	Date of Entry

12 Chevron shall install, certify, calibrate, maintain, and operate all COMS required by this Consent
 13 Decree in accordance with 40 C.F.R §§ 60.11, 60.13 and Part 60 Appendix A, and the applicable
 14 performance specification test of 40 C.F.R. Part 60 Appendix B.

15 **D. CO Emissions Reductions from FCCUs:** Chevron shall continue to operate its
 16 FCCUs in a manner that minimizes CO emissions.

17 26. **CO Emission Limit for Richmond FCCU.** By no later than the Date of
 18 Entry of this Consent Decree, the Richmond FCCU shall meet an emission limit of 500 ppmvd
 19 CO corrected to 0% O2 on a 1-hour average basis and 100 ppmvd CO corrected to 0% O2 on a
 20 365-day rolling average basis. The Richmond FCCU shall also comply with all applicable Bay
 21 Area Air Quality Management District requirements, including, but not limited to, Permit
 22 Condition 11066 (67 ppmvd CO averaged over any rolling 30 day period or 50 ppmvd CO
 23 averaged over any calendar year, corrected to 3% O2).

24 27. **CO Emission Limits for El Segundo, Hawaii, Pascagoula, and Salt Lake**
 25 **City FCCUs.** By no later than the dates set forth below, the El Segundo, Hawaii, Pascagoula,
 26 and Salt Lake City FCCUs shall meet an emission limit of 500 ppmvd CO corrected to 0% O2 on
 27 a 1-hour average basis.

28	El Segundo	April 10, 2005
----	------------	----------------

1 BAAQMD regulations or procedures in lieu of the required RAA or CGA. With respect to the O₂
 2 CEMS required by this Paragraph, in lieu of the audit points specified in 40 C.F.R. Part 60, Appendix
 3 F § 5.1.2., Chevron may audit the O₂ CEMS at 20-30% and 50-60% of the actual O₂ CEMS span
 4 value.

5 **E. NSPS Applicability to FCCU Regenerators.**

6 30. **Richmond FCCU Catalyst Regenerator.** The Richmond FCCU Catalyst
 7 Regenerator shall be an affected facility under NSPS Subpart J, and shall continue to be subject to and
 8 comply with the applicable requirements of NSPS Subparts A and J for SO₂, PM, CO and Opacity.

9 31. **Other FCCU Catalyst Regenerators.** Chevron's FCCU Catalyst Regenerators at
 10 its El Segundo, Hawaii, Pascagoula, and Salt Lake City Refineries shall be affected facilities under
 11 NSPS Subpart J for each pollutant, and Chevron shall comply with the applicable requirements of
 12 NSPS Subparts A and J for each pollutant, by the dates set forth below:

	<u>SO₂</u>	<u>PM</u>	<u>CO</u>	<u>Opacity</u>
13				
14	Pascagoula	4/10/05	4/10/05	4/10/05
15	Hawaii	12/31/05	4/10/05	4/10/05
16	Salt Lake			
17	w/HT	6/30/06	4/10/05	4/10/05
18	wo/HT	4/10/05	4/10/05	4/10/05
19	El Segundo	6/30/04	6/30/04	4/10/05

20 31A. For FCCU Catalyst Regenerators that become affected facilities under NSPS Subpart J
 21 pursuant to Paragraph 31, entry of this Consent Decree and compliance with the relevant monitoring
 22 requirements of this Consent Decree for FCCUs shall satisfy the notice requirements of 40 C.F.R. §
 23 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

24 **F. NO_x Emissions Reductions from Heaters and Boilers.** Chevron shall implement a
 25 program to reduce NO_x emissions from refinery heaters and boilers through the installation
 26 of NO_x controls or the shut down of certain units and the acceptance of permit emission
 27 limits on the units controlled to meet the requirements of Paragraph 33. Chevron will
 28 monitor compliance with the emission limits through source testing, use

1 of CEMS, and/or the use of PEMS.

2 32. **Installation of NOx Control Technology.** Chevron shall select one or any
 3 combination of the following “Qualifying Controls” to satisfy the requirements of Paragraphs 33
 4 and 37:

- 5 a. SCR or SNCR;
- 6 b. Current Generation or Next Generation Ultra-Low NOx Burners;
- 7 c. other technologies which Chevron demonstrates to EPA’s satisfaction will
 8 reduce NOx emissions to 0.040 lbs. per mmBTU or lower; or
- 9 d. permanent shutdown of a heater or boiler with revocation of its operating
 10 permit.

11 33. On or before June 30, 2011, Chevron shall use Qualifying Controls to reduce
 12 NOx emissions from the heaters and boilers listed in Appendix B by at least 2777 tons per year,
 13 so as to satisfy the following inequality:

14
$$\sum_{i=1}^n [(E_{\text{actual}})_i - (E_{\text{allowable}})_i] \geq 2777 \text{ tons of NOx per year}$$

15
 16
$$i = 1$$

17 Where:

18 $(E_{\text{allowable}})_i =$ [(The permitted allowable pounds of NO_x per million BTU for heater or
 19 boiler i, or, the requested portion of the permitted reduction pursuant to
 20 Paragraph 106)/(2000 pounds per ton)] x [(the lower of permitted or
 21 maximum heat input rate capacity in million BTU per hour for heater or
 22 boiler i) x (the lower of 8760 or permitted hours per year)];

23 $(E_{\text{Actual}})_i =$ The tons of NO_x per year prior actual emissions during calendar years
 24 2000 and 2001 (unless prior actual emissions exceed allowable emissions,
 25 then use allowable) as shown in Appendix B for heater or boiler i; and

26 $n =$ The number of heaters and boilers with Qualifying Controls from those
 27 listed in Appendix B that are selected by Chevron to satisfy the
 28 requirements of the equation set forth in this Paragraph 33 of this Consent

1 Decree.

2 Permit limits established to implement this paragraph may use a 365-day rolling average for
3 heaters and boilers that use a CEMS or PEMS to monitor compliance.

4 34. Appendix B to this Consent Decree provides the following information for
5 heaters or boilers larger than 40 mmBTU/hr that operated during calendar years 2000 or 2001 at
6 each of the five Chevron refineries:

7 a. the maximum heat input capacity or, if less, the allowable heat input capacity
8 in mmBTU/hr (HHV);

9 b. the actual NOx emission rate for both calendar years 2000 and 2001 in
10 lbs/mmBTU (HHV) and tons per year;

11 c. the type of data used to derive the emission estimate (*i.e.*, emission factor,
12 stack test, or CEMS data); and,

13 d. the utilization rate in annual average mmBTU/hr (HHV) for calendar years
14 2000 and 2001.

15 35. Chevron shall submit a detailed NOx control plan (“Control Plan”) to EPA and
16 Plaintiff-Intervenors for review and comment by no later than June 30, 2004, with annual
17 updates (covering the prior calendar year) on June 30 of each year thereafter until termination of
18 the Consent Decree. The Control Plan and its updates shall describe the achieved and
19 anticipated progress of the NOx emissions reductions program for heaters and boilers and shall
20 contain the following information for each heater and boiler greater than 40 mmBTU/hr that
21 Chevron plans to use to satisfy the requirements of Paragraphs 33, 36, or 37:

22 a. All of the information in Appendix B;

23 b. Identification of the type of Qualifying Controls installed or planned with date
24 installed or planned (including identification of the heaters and boilers to be permanently shut
25 down);

26 c. To the extent limits exist or are planned, the allowable NOx emission rates (in
27 lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr
28 (HHV)) obtained or planned with dates obtained or planned;

1 d. The results of emissions tests and annual average CEMS or PEMS data (in
2 ppmvd at 3% O₂, lbs/mmBTU) conducted pursuant to Paragraph 38 and tons per year; and

3 e. The amount in tons per year applied or to be applied toward satisfying
4 Paragraph 33.

5 Appendix B and the Control Plan and updates required by this Paragraph shall be for
6 informational purposes only and may contain estimates. They shall not be used to develop
7 permit requirements or other operating restrictions. Chevron may change any projections, plans,
8 or information that is included in the Control Plan or updates. Nothing in this Paragraph 35 shall
9 affect any requirements for the development or submittal of a NO_x control plan pursuant to
10 otherwise applicable state or local law (e.g., BAAQMD Regulation 9, Rule 10).

11 36. By June 30, 2007, Chevron shall install sufficient Qualifying Controls and
12 have applied for emission limits from the appropriate permitting authority sufficient to achieve
13 two-thirds of the NO_x emissions reductions required by Paragraph 33. No later than September
14 30, 2007, Chevron shall provide EPA and the Plaintiff-Intervenors with a report showing how it
15 satisfied the requirement of this Paragraph.

16 37. By no later than June 30, 2011, heaters and boilers with Qualifying Controls
17 shall represent at least 30% of the total maximum heat input capacity or, if less, the allowable
18 heat input capacity, as shown in Appendix B, of all heaters and boilers greater than 40
19 mmBTU/hr at the El Segundo, Richmond, Pascagoula and Salt Lake City Refineries. Any
20 Qualifying Controls can be used to satisfy this requirement, regardless of when the Qualifying
21 Controls were installed.

22 37A. By no later than December 31, 2008, Chevron shall install Qualifying Controls
23 on the FCCU heater at the Hawaii Refinery.

24 38. Beginning no later than 180 days after installing Qualifying Controls on and
25 commencing operation of a heater and boiler that will be used to satisfy the requirements of
26 Paragraph 33, Chevron shall monitor the heaters or boilers as follows:

27 a. For heaters and boilers with a capacity greater than 150 mmBTU/hr (HHV),
28 install or continue to operate a NO_x CEMS;

1 b. For heaters and boilers with a capacity greater than 100 mmBTU/hr (HHV) but
2 less than or equal to 150 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS, or
3 monitor NO_x emissions with a predictive emissions monitoring system (“PEMS”) developed and
4 operated pursuant to the requirements of Appendix C of this Consent Decree.

5 c. For heaters and boilers with a capacity of less than or equal to 100 mmBTU/hr
6 (HHV), conduct an initial performance test and any periodic tests that may be required by EPA
7 or by the applicable State or local permitting authority under other applicable regulatory
8 authority. The results of the initial performance testing shall be reported to EPA and the
9 appropriate Plaintiff-Intervenor.

10 Chevron shall use Method 7E or an EPA-approved alternative test method to conduct
11 initial performance testing for NO_x emissions required by subparagraph 38.c. Monitoring with a
12 PEMS that is required by this paragraph shall be conducted in accordance with the requirements
13 of Appendix C. Units with Qualifying Controls installed before the Date of Entry that are
14 subject to this Paragraph shall comply with this Paragraph by June 30, 2004, except that for units
15 at the Richmond Refinery with a capacity greater than 100 mmBTU/hr (HHV) but less than or
16 equal to 150 mmBTU (HHV) on which Qualifying Controls were installed before the Date of
17 Entry Chevron shall comply with this Paragraph by December 31, 2005.

18 39. Beginning no later than 180 days after installing Qualifying Controls and
19 commencing operation of a heater or boiler that will be monitored by use of a NO_x CEMS that is
20 required by Paragraph 38, Chevron shall install, certify, calibrate, maintain, and operate all
21 CEMS in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS
22 (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and
23 Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part
24 60 Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40
25 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Chevron must conduct either a Relative
26 Accuracy Audit (“RAA”) or a Relative Accuracy Test Audit (“RATA”) on each CEMS at least
27 once every three (3) years. Chevron must also conduct Cylinder Gas Audits (“CGA”) each
28 calendar quarter during which a RAA or a RATA is not performed. With respect to its

1 Richmond Refinery, Chevron may conduct a Field Accuracy Test (“FAT”) as defined in
2 BAAQMD regulations or procedures in lieu of the required RAA or CGA. Units with
3 Qualifying Controls installed before the Date of Entry that are subject to this Paragraph shall
4 comply with this Paragraph by June 30, 2004.

5 40. The requirements of this Section V.F. do not exempt Chevron from complying
6 with any and all Federal, state, regional, and local requirements that may require technology,
7 equipment, monitoring, or other upgrades based on actions or activities occurring after the Date
8 of Lodging of this Consent Decree, or based upon new or modified regulatory, statutory, or
9 permit requirements.

10 41. Chevron shall retain all records required to support its reporting requirements
11 under this Section V.F. until termination of the Consent Decree. Chevron shall submit such
12 records to EPA or the appropriate Plaintiff-Intervenor upon request.

13 42. If Chevron transfers ownership of any refinery before achieving all of the NO_x
14 reductions required by Paragraph 33, Chevron shall notify EPA and the appropriate Plaintiff-
15 Intervenor of that transfer and shall submit an allocation to EPA and the appropriate Plaintiff-
16 Intervenor for that refinery’s share of NO_x reduction requirements of Paragraph 33 that will
17 apply individually to the transferred refinery after such transfer. If Chevron chooses, such
18 allocation may be zero.

19 **G. SO₂ Emissions Reductions from and NSPS Applicability to Chevron Heaters and**
20 **Boilers and Other Specified Equipment.** Chevron shall undertake measures to reduce
21 SO₂ emissions from refinery heaters and boilers and other specified equipment by
22 restricting H₂S in refinery fuel gas and by agreeing not to burn Fuel Oil except as
23 specifically permitted under the provisions set forth herein.

24 43. **NSPS Applicability to Heaters and Boilers and Other Specified Equipment.**
25 a. Upon the Date of Entry, all heaters and boilers at the Chevron Refineries shall be
26 affected facilities, under NSPS Subpart J, and shall comply with the applicable requirements of
27 NSPS Subparts A and J for fuel gas combustion devices, except for those heaters and boilers
28 listed in Appendix D, which shall be affected facilities and shall be subject to and comply with

1 the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices by the
2 dates listed in Appendix D.

3 b. By the date listed in Appendix E, all equipment listed in Appendix E shall be
4 affected facilities, under NSPS Subpart J, and shall be subject to and comply with the applicable
5 requirements of NSPS Subparts A and J for fuel gas combustion devices.

6 c. Where Appendix D or E specifies an AMP submittal date (rather than a final
7 NSPS Subpart J compliance date), Chevron shall submit to EPA and the appropriate Plaintiff-
8 Intervenor a timely and complete alternative monitoring plan ("AMP") application. Such an
9 AMP may be based on alternative monitoring for H₂S or SO₂. If an AMP is not approved,
10 Chevron shall within ninety (90) days of Chevron receiving notice of such disapproval submit to
11 EPA for approval, with a copy to the appropriate Plaintiff-Intervenor, a plan and schedule that
12 provide for compliance with the monitoring requirements of NSPS Subpart J as soon as
13 practicable. Such plan may include a revised AMP application, physical or operational changes
14 to the equipment, or additional or different monitoring.

15 d. For some heaters and boilers that combust low-flow VOC streams from vents,
16 pumpseals, and other sources, it is anticipated that some of the AMP applications will rely in part
17 on calculating a weighted average H₂S concentration of all VOC and fuel gas streams that are
18 burned in a single heater or boiler and demonstrating with alternative monitoring that either the
19 SO₂ emissions from the heater or boiler will not exceed 20 ppm or that the weighted average
20 H₂S concentration is not likely to exceed 162 ppm H₂S. EPA shall not reject an AMP solely
21 due to the AMP's use of one of these approaches to demonstrating compliance with NSPS
22 Subpart J.

23 e. For heaters, boilers and other equipment used as fuel gas combustion devices that
24 become affected facilities under NSPS Subpart J pursuant to this Paragraph 43 and/or
25 Appendices D or E, entry of this Consent Decree and compliance with the relevant monitoring
26 requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a)
27 and the initial performance test requirement of 40 C.F.R. § 60.8(a).

28 44. **Elimination/Reduction of Fuel Oil Burning.** Effective on the Date of Entry,

1 Chevron shall not burn Fuel Oil in any combustion unit at its Refineries except that:

2 a. Due to the unavailability of natural gas, Chevron may burn Fuel Oil at its Hawaii
3 Refinery;

4 b. Chevron may burn HF polymer at the HF Alkylation Plant at the Salt Lake City
5 Refinery;

6 c. Chevron may burn Fuel Oil at the Salt Lake City Refinery during periods of
7 Natural Gas Curtailment, test runs, and operator training.

8 d. Chevron may burn Torch Oil in FCCU regenerators to assist in starting,
9 restarting, hot standby, or to maintain regenerator heat balance.

10 45. [omitted]

11 **H. Sulfur Recovery Plants NSPS Applicability:** The Sulfur Recovery Plants (“SRPs”) at
12 El Segundo, Richmond and Pascagoula are or will be affected facilities under NSPS
13 Subpart J, effective on the dates described in Paragraphs 47.a and 49.a, and shall
14 comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and J by such
15 dates. Furthermore, in the event that its sulfur input at the Salt Lake City Refinery SRP
16 exceeds 20 long tons in any calendar day, it shall become an affected facility under
17 NSPS Subpart J, and come into compliance with NSPS Subpart J in accordance with the
18 requirements specified in Paragraph 48.f.

19 46. **Sulfur Pit Emissions:** Chevron shall continue to route or re-route all sulfur
20 pit emissions at all Chevron Refineries so that they are eliminated, controlled, or included and
21 monitored as part of the SRP’s emissions subject to the NSPS Subpart J limit for SO₂, 40 C.F.R.
22 § 60.104(a)(2) or to applicable emission limits at the Salt Lake City SRP under Paragraph 48, by
23 no later than the first turnaround of the applicable Claus train that occurs on or after June 30,
24 2004 or by December 31, 2006 (whichever first occurs).

25 47. **Compliance with NSPS Emissions Limits at the Richmond and El**
26 **Segundo SRPs and at Pascagoula SRU 4/5/6.**

27 a. Effective on the Date of Entry, Pascagoula SRU 4/5/6 shall be affected facilities
28 under NSPS Subpart J and shall comply with all applicable provisions of NSPS Subparts A and

1 J. Effective no later than June 30, 2004, the Richmond and El Segundo SRPs shall be affected
2 facilities under NSPS Subpart J and shall comply with all applicable provisions of NSPS
3 Subparts A and J. Such SRPs and SRUs shall comply with 40 C.F.R. § 60.104(a)(2) at all times
4 except during periods of startup, shutdown or Malfunction of the SRP or SRU, or during a
5 Malfunction of the TGU. For purposes of determining compliance with the emission limits of 40
6 C.F.R. § 60.104(a)(2), the “start-up/shutdown” provisions set forth in NSPS Subpart A shall
7 apply.

8 b. Effective on the respective dates on which the Richmond and El Segundo
9 SRPs and Pascagoula SRU 4/5/6 become affected facilities pursuant to Paragraph 47.a, Chevron
10 shall monitor all emissions and shall report excess emissions from the Richmond and El Segundo
11 SRPs and Pascagoula SRU 4/5/6 under and as required by NSPS Subpart J.

12 c. At all times, including periods of startup, shutdown and Malfunction, Chevron
13 shall, to the extent practicable, operate and maintain its SRPs, SRUs and TGUs and any
14 supplemental control devices, in accordance with good air pollution control practices as required
15 in 40 C.F.R. § 60.11(d).

16 48. **Compliance with Emissions Limits at the Salt Lake City SRP.**

17 a. With respect to the Salt Lake City SRP, Chevron shall comply with a 95%
18 sulfur recovery efficiency requirement for all periods of operation except during periods of
19 startup, shutdown or Malfunction of the SRP. In addition, Chevron shall not emit more than
20 2.128 tons/day of SO₂ from the SRP except during periods of startup, shutdown or Malfunction
21 of the SRP. The actual recovery efficiency will be determined on a daily basis; however,
22 compliance with the 95% recovery requirement will be determined on a rolling 30-day average
23 basis. Chevron shall determine the percent recovery by measuring the flow rate and
24 concentration of hydrogen sulfide in the feed streams going to the SRP and by measuring the
25 sulfur dioxide emissions with the CEMS at the SRP incinerator and calculate the sulfur in the
26 feed and sulfur in the emissions. The flow rate will be determined continuously; the hydrogen
27 sulfide concentration will be determined quarterly for the first 6 quarters from the Date of Entry
28 and at least semiannually thereafter (samples may be collected as manual grabs or through remote

1 monitoring). The measured flow rate and periodic hydrogen sulfide concentrations will be used
2 to determine the daily sulfur feed rate.

3 b. Chevron shall complete an SRP optimization study at Salt Lake City SRP by
4 no later than March 31, 2004. (For purposes of Paragraphs 48 and 49 only, the "SRP" includes
5 the amine unit, the sour water stripper, the SRU and the SRU tail gas incinerator.) The
6 optimization study shall meet the requirements set forth in Paragraph 50. Chevron shall
7 promptly submit a copy of the optimization study report and a schedule for implementing the
8 recommendations in that report to EPA and the State of Utah. Chevron shall implement the
9 physical improvements and operating parameters recommended in the study to optimize
10 performance of the SRP as soon as practicable but by no later than December 31, 2004.

11 c. Chevron shall operate the Salt Lake City SRP at all times in accordance with
12 the good engineering management practices recommended in the optimization study to ensure
13 compliance with the 95% efficiency requirement and the emission limit. In addition, Chevron
14 shall, to the extent practicable, operate and maintain its SRP and any supplemental control
15 devices through implementation of good air pollution control practices consistent with 40 C.F.R.
16 § 60.11(d).

17 d. Within 60 days of the completion of the recommendations contained in the
18 SRU Optimization Study Report and no later than December 31, 2004, Chevron shall conduct a
19 test to demonstrate compliance with the 95% recovery efficiency and emission limit
20 requirements. Chevron shall submit a copy of the test protocol to EPA and the State of Utah for
21 review and comment not less than 30 days before the scheduled test date.

22 e. In each periodic report required under this Consent Decree, Chevron shall
23 include data showing all daily percent sulfur recovery percentages, the rolling 30-day average
24 sulfur recovery percentages, all daily emissions of SO₂ (tons/day) as recorded by a CEMS, the
25 operating parameters established in the optimization study, and the daily sulfur feed (calculated
26 from daily flow rate and periodic hydrogen sulfide concentrations) to the SRP.

27 f. No later than one hundred and twenty (120) days from the date the sulfur input
28 to the Salt Lake City SRP exceeds twenty (20) long tons in any calendar day, Chevron shall

1 submit to EPA and the State of Utah a proposed schedule to comply with all applicable NSPS
2 provisions, including the installation of a Tail Gas Unit. Any schedule proposed by Chevron
3 shall require Chevron to be in compliance with all applicable NSPS regulatory requirements no
4 later than thirty (30) months from the date the sulfur input exceeded twenty (20) long tons in any
5 calendar day; provided, however, that Chevron and the United States agree that if there is a
6 dispute as to the accuracy or reliability of the data indicating that the sulfur input to the SRP
7 exceeded the twenty (20) long tons per day, then the deadlines for submission of the compliance
8 schedule and achieving compliance with the NSPS shall be extended by the period needed to
9 resolve such dispute pursuant to the dispute resolution provisions in Section XV. Chevron shall
10 immediately notify EPA and the State of Utah in writing if monitoring during any calendar day
11 indicates that the sulfur input to the SRP exceeded twenty (20) long tons for that calendar day.
12 The notice required by the preceding sentence shall include such monitoring data. To the extent
13 that Chevron believes that such monitoring data is neither accurate nor reliable, Chevron shall so
14 notify EPA and the State of Utah and provide the basis(es) for such an assertion.

15 g. If Chevron installs a Tail Gas Unit and accepts NSPS Subpart J applicability at
16 the Salt Lake City SRP, it shall no longer be subject to the requirements of this Paragraph 48 but,
17 instead, shall be subject to the requirements of NSPS Subpart J and Paragraph 47 of this Consent
18 Decree (as of the date it accepts such applicability).

19 49. **Compliance with NSPS Emissions Limits at Pascagoula SRU 2/3.**

20 a. By no later than July 31, 2007, and except during periods of startup, shutdown
21 or Malfunction of SRU 2/3 or a Malfunction of the TGU, Pascagoula SRU 2/3 shall comply
22 with 40 C.F.R. § 60.104(a)(2) and the Pascagoula SRP shall comply with all applicable NSPS
23 Subpart A and J requirements, including monitoring, record keeping, reporting and operating
24 requirements, and with Paragraph 47 of this Consent Decree (as of the date Chevron completes
25 implementation of its approved compliance plan and schedule under Paragraph 49.b.i).

26 b. Chevron shall implement the following interim measures at Pascagoula SRU
27 2/3:

28 i. By no later than June 30, 2005, Chevron shall submit a compliance plan and

- 1 schedule for SRU 2/3 that will ensure compliance with SRP NSPS
2 requirements at the earliest practicable date but not later than July 31, 2007.
- 3 ii. By no later than September 30, 2004, Chevron shall install, operate and
4 maintain an SO2 CEMS at SRU 2/3 in accordance with NSPS Subpart J (Part
5 60 Appendix B - Performance Specification 2).
- 6 iii. By no later than March 31, 2004, Chevron shall complete an optimization
7 study to minimize emissions and maximize sulfur recovery efficiencies at SRU
8 2/3. This study shall meet the requirements set forth in Paragraph 50.
9 Chevron shall submit a copy of the optimization study report and a schedule
10 for implementing the report's recommendations to EPA and the State of
11 Mississippi. Chevron shall implement the physical improvements and
12 operating parameters recommended in the study to optimize performance of
13 SRU 2/3 in accordance with the proposed schedule.
- 14 iv. At all times, including periods of startup, shutdown and Malfunction, Chevron
15 shall, to the extent practicable, operate and maintain SRU 2/3 and any
16 supplemental control devices in a manner consistent with good air pollution
17 control practices for minimizing emissions as required in 40 C.F.R. § 60.11(d).
- 18 v. By no later than December 31, 2004, Chevron shall complete the
19 implementation of the recommendations in the optimization study. Chevron
20 shall submit a report to EPA and the State of Mississippi and propose an
21 appropriate performance standard (percent recovery rate or other performance
22 standard) based upon demonstrated performance at the optimized units.
23 Chevron shall comply with the performance standard from and after the
24 submission of such report. If EPA determines that, based on the results of the
25 study and other available and relevant information, a more stringent
26 performance standard is appropriate, EPA shall notify Chevron, and Chevron
27 shall comply within 90 days.

28 Chevron's obligations under this Paragraph 49.b shall end when Chevron completes

1 implementation of its approved compliance plan and schedule under Paragraph 49.b.i and
2 accepts NSPS Subpart J applicability for SRU 2/3 and the Pascagoula SRP.

3 49A. For Chevron's SRPs and SRUs that become affected facilities under NSPS
4 Subpart J pursuant to Section V.H. of this Consent Decree, entry of this Consent Decree and
5 compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the
6 notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40
7 C.F.R. § 60.8(a).

8 50. **Optimization:**

9 a. The optimization studies required for the Salt Lake City SRP and Pascagoula
10 SRU 2/3 shall meet the following requirements:

- 11 i. Detailed evaluation of plant design and capacity, operating parameters and
12 efficiencies - including catalytic activity, and material balances;
- 13 ii. An analysis of the composition of the acid gas and sour water stripper gas
14 resulting from the processing of crude slate actually used, or expected to be
15 used, in the SRP;
- 16 iii. A thorough review of each critical piece of process equipment and
17 instrumentation within the Claus train that is designed to correct deficiencies
18 or problems that prevent the Claus train from achieving its optimal sulfur
19 recovery efficiency and expanded periods of operation;
- 20 iv. Establishment of baseline data through testing and measurement of key
21 parameters throughout the Claus train;
- 22 v. Establishment of a thermodynamic process model of the Claus train;
- 23 vi. For any key parameters that have been determined to be at less than optimal
24 levels, initiation of logical, sequential, or stepwise changes designed to move
25 such parameters toward their optimal values;
- 26 vii. Verification through testing, analysis of continuous emission monitoring data
27 or other means, of incremental and cumulative improvements in sulfur
28 recovery efficiency, if any;

1 viii. Establishment of new operating procedures for long term efficient operation;
2 and

3 ix. Each study shall be conducted to optimize the performance of the Claus trains
4 in light of the actual characteristics of the feeds to the SRUs.

5 Chevron shall incorporate the results of its optimization studies into the PMO Plans
6 required under Paragraph 51.

7 b. Chevron shall continue to maintain its Best Practices Team as a means to
8 optimize Sulfur Recovery Plant operations. At a minimum, this team will review:

9 i. operator and engineer training for SRP and amine treating operations;

10 ii. operating parameters, material balances and efficiencies;

11 iii. acid gas and SWS gas composition;

12 iv. operating problems and corrective actions;

13 v. incremental improvements achieved;

14 vi. new or modified operating procedures; and

15 vii. root cause and corrective action performed as a result of any incident
16 investigation performed as a result of an Acid Gas Flaring Incident or Tail Gas
17 Flaring Incident.

18 51. **Good Operation and Maintenance.**

19 a. By no later than March 31, 2004, Chevron shall submit to EPA and the
20 appropriate Plaintiff-Intervenor, a summary of each Refinery’s plan for enhanced maintenance
21 and operation of its SRP, including Pascagoula SRU 2/3, the sulfuric acid plant at the Hawaii
22 Refinery, any supplemental control devices, and the appropriate Upstream Process Units that has
23 been or will be implemented. This plan shall be termed a Preventive Maintenance and Operation
24 Plan (“PMO Plan”). The PMO Plan shall be a compilation of Chevron’s approaches for
25 exercising good air pollution control practices and for minimizing SO₂ emissions at its
26 Refineries. The PMO Plan shall provide for continuous operation of its SRPs between scheduled
27 maintenance turnarounds with minimization of emissions, including the continued use of
28 supplemental control devices (e.g., amine/caustic scrubbers at El Segundo, Richmond,

1 Pascagoula, and Hawaii). The PMO Plan shall include, but not be limited to, sulfur shedding
2 procedures, startup and shutdown procedures, hot standby procedures, emergency procedures
3 and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any
4 supplemental control device to coincide with scheduled turnarounds of major Upstream Process
5 Units. The PMO Plan shall have as a goal the elimination of Acid Gas Flaring. Chevron shall
6 comply with the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction
7 of its SRPs. Chevron's changes to a PMO Plan related to minimizing Acid Gas Flaring and/or
8 SO₂ emissions shall be summarized and reported to EPA and the appropriate Plaintiff-Intervenor
9 on an annual basis.

10 b. EPA and the appropriate Plaintiff-Intervenor do not, by their review of a PMO
11 Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any
12 of the actions that Chevron may take pursuant to such PMO Plan will result in compliance with
13 the provisions of the Clean Air Act or any other applicable federal, state, or local law or
14 regulation. Notwithstanding EPA's or appropriate Plaintiff-Intervenor's review of a PMO Plan,
15 Chevron shall remain solely responsible for compliance with the Clean Air Act and such other
16 laws and regulations.

17 52. By no later than December 31, 2003, Chevron shall install and operate a
18 caustic scrubber at the Hawaii Refinery to eliminate Acid Gas Flaring during periods of sulfuric
19 acid plant startup, shutdown and Malfunction.

20 **I. Flaring Devices - NSPS Applicability:** All Flaring Devices at the Refineries are
21 identified in Appendix F to this Consent Decree. These Flaring Devices are or will be
22 affected facilities (as that term is used in NSPS, 40 C.F.R. Part 60) by the dates
23 Chevron certifies compliance with applicable NSPS Subpart J requirements and accepts
24 NSPS Subpart J applicability for such Flaring Device under Paragraph 54.a. Such
25 Flaring Devices will then be subject to and required to comply with the fuel gas
26 combustion device requirements of 40 C.F.R. Part 60, Subparts A and J; they may also
27 be used as emergency control devices for the quick and safe release of gases generated
28 as a result of startup, shutdown, upset or Malfunction.

1 53. **Good Air Pollution Control Practices.** On and after the Date of Entry,
2 Chevron shall at all times and to the extent practicable, including during periods of Startup,
3 Shutdown, and/or Malfunction, implement good air pollution control practices for minimizing
4 emissions consistent with 40 C.F.R. § 60.11(d).

5 54. **Refinery Fuel Gases**

6 a. **Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases.**

7 Chevron shall identify all continuous or intermittent, routinely-generated refinery fuel gases that
8 are combusted in any of the Flaring Devices identified in Appendix F and determine whether all
9 such gases are monitored and comply with applicable NSPS Subpart J requirements. By no later
10 than December 31, 2006, Chevron shall:

- 11 i. certify compliance with applicable NSPS requirements and accept NSPS
12 Subpart J applicability for at least 50% of the Flaring Devices identified in
13 Appendix F; and
- 14 ii. submit a schedule of activities that Chevron will undertake to ensure
15 continuous compliance with applicable NSPS requirements as soon as
16 practicable at all other Flaring Devices. The schedule for each such other
17 Flaring Device shall identify whether Chevron will: (a) eliminate gas streams;
18 (b) monitor continuous or intermittent routinely-generated refinery fuel gas
19 streams and comply with the emission limit at 40 C.F.R. § 60.104(a)(1); or
20 (c) take other identified actions to ensure that only Non-Routinely Generated
21 Gases are combusted in such other Flaring Device (*e.g.*, design, install,
22 maintain and operate a flare gas recovery system). Except for a maximum of
23 three flares, Chevron shall certify compliance with applicable NSPS Subpart J
24 requirements and accept NSPS Subpart J applicability for all those Flaring
25 Devices not previously addressed under Paragraph 54.a.i. by December 31,
26 2008. For any remaining flares, Chevron shall certify compliance with
27 applicable NSPS Subpart J requirements and accept NSPS Subpart J
28 applicability for those Flaring Devices by December 31, 2010.

1 b. Non-Routinely Generated Gases. The combustion of gases generated as a
2 result of startup, shutdown, upset or Malfunction of a refinery process unit or released to a
3 Flaring Device as a result of relief valve leakage or other emergency malfunction are exempt
4 from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

5 55. For Chevron's Flaring Devices identified in Appendix F that become affected
6 facilities under NSPS Subpart J pursuant to Section V.I. of this Consent Decree, entry of this
7 Consent Decree and compliance with the relevant monitoring requirements of this Consent
8 Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance
9 test requirement of 40 C.F.R. § 60.8(a).

10 56. [omitted]

11 **J. Control of Acid Gas Flaring Incidents and Tail Gas Incidents.** Chevron has
12 implemented (or is in the process of identifying and implementing) corrective actions to
13 minimize the number and duration of Acid Gas Flaring Incidents identified under
14 Paragraph 59. Chevron agrees to implement a program to investigate the cause of
15 future Acid Gas Flaring Incidents, to take reasonable steps to correct the conditions that
16 have caused or contributed to such Acid Gas Flaring Incidents, and to minimize the
17 flaring of acid gas and sour water stripper gases at each Refinery. Chevron shall follow
18 the procedures in this Section V.J to evaluate whether acid gas/sour water stripper gas
19 flaring incidents occurring after the Date of Entry are due to Malfunctions or are subject
20 to stipulated penalties. The investigative and evaluative procedures in this Section V.J
21 will also be used to assess whether Tail Gas Incidents, as described in Paragraph 66, are
22 due to Malfunctions or are subject to stipulated penalties. The procedures set forth in
23 this Section V.J require root cause analysis and corrective action for all types of flaring
24 and stipulated penalties for acid/sour water stripper gas flaring incidents and/or tail gas
25 incidents if the root causes were not due to malfunctions.

26 57. Investigation and Reporting. By no later than forty-five (45) days
27 following the end of an Acid Gas Flaring Incident occurring after the Date of Entry, Chevron
28 shall submit to EPA and the appropriate Plaintiff-Intervenor a report that sets forth the following:

- 1 i. The date and time that the Acid Gas Flaring Incident started and ended. To the
2 extent that the Acid Gas Flaring Incident involved multiple releases either within
3 a twenty-four (24) hour period or within subsequent, contiguous, non-overlapping
4 twenty-four (24) hour periods, Chevron shall set forth the starting and ending
5 dates and times of each release;
- 6 ii. An estimate of the quantity of sulfur dioxide that was emitted and the calculations
7 that were used to determine that quantity;
- 8 iii. The steps, if any, that Chevron took to limit the duration and/or quantity of sulfur
9 dioxide emissions associated with the Acid Gas Flaring Incident;
- 10 iv. A detailed analysis that sets forth the Root Cause and all contributing causes of
11 that Acid Gas Flaring Incident, to the extent determinable;
- 12 v. An analysis of the measures, if any, that are available to reduce the likelihood of a
13 recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or
14 contributing causes in the future. The analysis shall discuss the alternatives, if
15 any, that are available, the probable effectiveness and cost of the alternatives, and
16 whether or not an outside consultant should be retained to assist in the analysis.
17 Possible design, operation and maintenance changes shall be evaluated. If
18 Chevron concludes that corrective action(s) is (are) required under Paragraph 58,
19 the report shall include a description of the action(s) and, if not already
20 completed, a schedule for its (their) implementation, including proposed
21 commencement and completion dates. If Chevron concludes that corrective
22 action is not required under Paragraph 58, the report shall explain the basis for
23 that conclusion;
- 24 vi. A statement that: (a) specifically identifies each of the grounds for stipulated
25 penalties in Paragraphs 60 and 61 of this Decree and describes whether or not the
26 Acid Gas Flaring Incident falls under any of those grounds; (b) if an Acid Gas
27 Flaring Incident falls under Paragraph 61 of this Decree, describes which
28 Paragraph (61.a or b) applies and why; and (c) if an Acid Gas Flaring Incident

1 falls under either Paragraph 60 or 61.b, states whether or not Chevron asserts a
2 defense to the Flaring Incident, and if so, a description of the defense;

3 vii. To the extent that investigations of the causes and/or possible corrective actions
4 still are underway on the due date of the report, a statement of the anticipated date
5 by which a follow-up report fully conforming to the requirements of this
6 Paragraph 57.iv and 57.v shall be submitted; provided, however, that if Chevron
7 has not submitted a report or a series of reports containing the information
8 required to be submitted under this Paragraph within the 45 day time period set
9 forth in Paragraph 57 (or such additional time as EPA may allow) after the due
10 date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty
11 provisions of Paragraph 144 shall apply, but Chevron shall retain the right to
12 dispute, under the dispute resolution provision of this Consent Decree, any
13 demand for stipulated penalties that was issued as a result of Chevron's failure to
14 submit the report required under this Paragraph within the time frame set forth.
15 Nothing in this Paragraph shall be deemed to excuse Chevron from its
16 investigation, reporting, and corrective action obligations under this Section for
17 any Acid Gas Flaring Incident which occurs after an Acid Gas Flaring Incident
18 for which Chevron has requested an extension of time under Paragraph 58; and

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

25 58. **Corrective Action.**

26 a. In response to an AG Flaring Incident occurring after the Date of Entry,
27 Chevron shall take, as expeditiously as practicable, such interim and/or long-term corrective
28 actions, if any, as are consistent with good engineering practice to minimize the likelihood of a

1 recurrence of the Root Cause and all contributing causes of that AG Flaring Incident.

2 b. If EPA does not notify Chevron in writing within thirty (30) days of receipt of
3 the report(s) required by Paragraph 57 that it objects to one or more aspects of the proposed
4 corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s)
5 and schedule(s) shall be deemed acceptable for purposes of compliance with Paragraph 58.a of
6 this Decree. EPA does not, however, by its consent to the entry of this Consent Decree or by its
7 failure to object to any corrective action that Chevron may take in the future, warrant or aver in
8 any manner that any corrective actions in the future shall result in compliance with the
9 provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review
10 of any plans, reports, corrective actions or procedures under this Section V.J, Chevron shall
11 remain solely responsible for non-compliance with the Clean Air Act and its implementing
12 regulations. Nothing in this Section shall be construed as a waiver of EPA's rights under the
13 Clean Air Act and its regulations for future violations of the Act or its regulations.

14 c. If EPA objects, in whole or in part, to the proposed corrective action(s) and/or
15 the schedule(s) of implementation or, where applicable, to the absence of such proposal(s) and/or
16 schedule(s), it shall notify Chevron of that fact within thirty (30) days following receipt of the
17 report(s) required by Paragraph 57, above. If EPA and Chevron cannot agree on the appropriate
18 corrective action(s), if any, to be taken in response to a particular Acid Gas Flaring Incident,
19 either Party may invoke the Dispute Resolution provisions of Section XV of the Consent Decree.

20 d. Nothing in this Section V.J shall be construed to limit the right of Chevron to
21 take such corrective actions as it deems necessary and appropriate immediately following an
22 Acid Gas Flaring Incident or in the period during preparation and review of any reports required
23 under this Paragraph.

24 59. **Flaring History**. Chevron has provided to EPA a report identifying AG
25 Flaring Incidents that occurred in recent years, their probable causes and estimated emissions,
26 and the corrective measures taken by Chevron to avoid future AG Flaring Incidents.

27 59A. **CERCLA/EPCRA Compliance Review**. In conjunction with or in addition
28 to the review of flaring incidents required by Paragraph 59, Chevron may elect to conduct a

1 review of past flaring events occurring between July 1, 1998 and the Date of Lodging to
2 determine its compliance with applicable requirements of Section 103(a) of CERCLA, 42 U.S.C.
3 § 9603(a), and Section 304 of EPCRA, 42 U.S.C. § 11004, with respect to those flaring events.
4 Upon completion of this review, Chevron may resolve its liability, pursuant to Paragraph 217 of
5 this Consent Decree, for violations of Section 103(a) of CERCLA and Section 304 of EPCRA
6 with respect to the flaring events identified in its compliance review by completing the following
7 activities no later than 120 days from the Date of Entry:

8 a. submit a CERCLA/EPCRA Compliance Review Report to EPA and Plaintiff-
9 Intervenors that identifies all flaring events and associated violations of Section 103(a) of
10 CERCLA and Section 304 of EPCRA for which Chevron seeks a resolution of liability, and
11 attach to that report copies of any corrective reports filed by Chevron pursuant to subparagraph
12 b., below; and

13 b. correct any identified violations by submitting reports to the appropriate
14 agencies consistent with the requirements of Section 103(a) of CERCLA and Section 304 of
15 EPCRA.

16 59B. **Stipulated Penalties.** The provisions of Paragraphs 60 through 62 are
17 intended to implement the process outlined in the logic diagram attached hereto as Appendix H
18 to this Consent Decree. These provisions shall be interpreted and construed, to the maximum
19 extent feasible, to be consistent with that Appendix. However, in the event of a conflict between
20 the language of those Paragraphs and Appendix H, the language of those Paragraphs shall
21 control.

22 60. The stipulated penalty provisions of Paragraph 143 shall apply to any Acid
23 Gas Flaring Incident for which the Root Cause was one or more of the following acts, omissions,
24 or events:

- 25 a. Error resulting from careless operation by the personnel charged with the
26 responsibility for the Sulfur Recovery Plant, TGU, or Upstream Process Units;
- 27 b. Failure to follow written procedures;
- 28 c. A failure of a part, equipment or system that is due to a failure by Chevron to

1 operate and maintain that part, equipment or system in a manner consistent with good
2 engineering practice; and

3 d. Fire eye at the Salt Lake City Refinery.

4 61. If the Acid Gas Flaring Incident is not a result of one of the root causes
5 identified in Paragraph 60, then the stipulated penalty provisions of Paragraph 143 shall apply if
6 the Acid Gas Flaring Incident:

7 a. Results in emissions of sulfur dioxide at a rate greater than twenty (20.0)
8 pounds per hour continuously for three (3) consecutive hours or more and Chevron failed to act
9 consistent with the PMO Plan and/or to take any action during the Acid Gas Flaring Incident to
10 limit the duration and/or quantity of SO₂ emissions associated with such incident; or

11 b. Causes the total number of Acid Gas Flaring Incidents in a rolling twelve (12)
12 month period to exceed five (5).

13 In the event that a Flaring Incident falls under both Paragraphs 60 and 61, then
14 Paragraph 60 shall apply.

15 62. With respect to any Acid Gas Flaring Incident not identified in Paragraph 60 or
16 61, the following provisions shall apply:

17 a. Agreed Upon Malfunction: If the Root Cause of the Acid Gas Flaring Incident
18 was sudden, infrequent, and not reasonably preventable through the exercise of good engineering
19 practice, then that cause shall be designated as an agreed-upon malfunction for purposes of
20 reviewing subsequent Acid Gas Flaring Incidents, and the stipulated penalty provisions of
21 Paragraph 143 shall not apply.

22 b. First Time: If the Root Cause of the Acid Gas Flaring Incident was sudden and
23 infrequent but reasonably preventable through the exercise of good engineering practices then
24 Chevron shall implement corrective action(s) pursuant to Paragraph 59.a, and the stipulated
25 penalty provisions of Paragraph 143 shall not apply.

26 c. Recurrence: If the Root Cause of the Acid Gas Flaring Incident is a recurrence
27 of the same Root Cause that caused a previous Acid Gas Flaring Incident occurring after the
28 Date of Entry, then the stipulated penalty provisions of Paragraph 143 shall apply unless either

1 the Root Cause of the previous Acid Gas Flaring Incident was designated as an Agreed Upon
2 Malfunction under Paragraph 62.a. or Chevron was in the process of timely developing or
3 implementing a corrective action plan under Paragraph 58.a for such previous Acid Gas Flaring
4 Incident

5 63. **Defenses:** Chevron may raise the following affirmative defenses in response to
6 a demand by the United States for stipulated penalties:

7 a. Force majeure.

8 b. As to Paragraphs 60, the Acid Gas Flaring Incident does not meet the
9 identified criteria.

10 c. As to Paragraphs 61, the Acid Gas Flaring Incident does not meet the
11 identified criteria and/or was due to a Malfunction.

12 d. As to Paragraph 62, the Acid Gas Flaring Incident does not meet the identified
13 criteria, was due to a Malfunction and/or Chevron was in the process of timely developing or
14 implementing a corrective action plan under Paragraph 58.a for the previous Acid Gas Flaring
15 Incident.

16 In the event a dispute under Paragraph 61 or 62 is brought to the Court pursuant to the
17 Dispute Resolution provisions of this Consent Decree, Chevron may also assert a start up,
18 shutdown and/or upset defense, but the United States shall be entitled to assert that such defenses
19 are not available. If Chevron prevails in persuading the Court that the defenses of startup,
20 shutdown and/or upset are available for AG Flaring Incidents under 40 C.F.R. § 60.104(a)(1),
21 Chevron shall not be liable for stipulated penalties for emissions resulting from such startup,
22 shutdown and/or upset. If the United States prevails in persuading the Court that the defenses or
23 startup, shutdown and/or upset are not available, Chevron shall be liable for such stipulated
24 penalties.

25 64. Other than for a Malfunction or force majeure, if no Acid Gas Flaring Incident
26 and no violation of the emission limit under Paragraph 54 occurs at a Refinery for a rolling 36
27 month period, then the stipulated penalty provisions of Paragraph 143 shall no longer apply to
28 that Refinery. EPA may elect to prospectively reinstate the stipulated penalty provision if

1 Chevron has an Acid Gas Flaring Incident which would otherwise be subject to stipulated
 2 penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the
 3 stipulated penalty provision shall continue for the remaining life of this Consent Decree for that
 4 Refinery.

5 65. **Emission Calculations.**

6 a. **Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG**
 7 **Flaring.** For purposes of this Consent Decree, the quantity of SO₂ emissions resulting from AG
 8 Flaring shall be calculated by the following formula:

$$9 \quad \text{Tons of SO}_2 = [\text{FR}][\text{TD}][\text{ConcH}_2\text{S}][8.44 \times 10^{-5}].$$

10 The quantity of SO₂ emitted shall be rounded to one decimal point. (Thus, for example,
 11 for a calculation that results in a number equal to 10.050 tons, the quantity of SO₂ emitted shall
 12 be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of
 13 determining the occurrence of, or the total quantity of SO₂ emissions resulting from, a AG
 14 Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO₂ emitted shall
 15 be equal to the sum of the quantities of SO₂ flared during each such period of intermittent AG
 16 Flaring.

17 b. **Calculation of the Rate of SO₂ Emissions During AG Flaring.** For purposes of
 18 this Consent Decree, the rate of SO₂ emissions resulting from AG Flaring shall be expressed in
 19 terms of pounds per hour and shall be calculated by the following formula:

$$20 \quad \text{ER} = [\text{FR}][\text{ConcH}_2\text{S}][0.169].$$

21 The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation
 22 that results in an emission rate of 19.95 pounds of SO₂ per hour, the emission rate shall be
 23 rounded to 20.0 pounds of SO₂ per hour; for a calculation that results in an emission rate of 20.05
 24 pounds of SO₂ per hour, the emission rate shall be rounded to 20.1.)

25 c. **Meaning of Variables and Derivation of Multipliers Used in the Equations in**
 26 **this Paragraph 65:**

27 ER = Emission Rate in pounds of SO₂ per hour

28 FR = Average Flow Rate to Flaring Device(s) during Flaring, in

1 standard cubic feet per hour
 2 TD = Total Duration of Flaring in hours
 3 ConcH₂S = Average Concentration of Hydrogen Sulfide in gas during Flaring
 4 (or immediately prior to Flaring if all gas is being flared)
 5 expressed as a volume fraction (scf H₂S/scf gas)
 6 $8.44 \times 10^{-5} =$ [lb mole H₂S/379 scf H₂S][64 lbs SO₂/lb mole H₂S][Ton/2000 lbs]
 7 $0.169 =$ [lb mole H₂S/379 scf H₂S][1.0 lb mole SO₂/1 lb mole H₂S][64 lb
 8 SO₂/1.0 lb mole SO₂]
 9

10 The flow of gas to the AG Flaring Device(s) (“FR”) shall be as measured by the relevant flow
 11 meter or reliable flow estimation parameters. Hydrogen sulfide concentration (“ConcH₂S”) shall
 12 be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur
 13 content of the process gas being flared, by direct measurement by tutwiler or draeger tube
 14 analysis or by any other method approved by EPA or the Plaintiff-Intervenors. In the event that
 15 any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated
 16 according to best engineering judgment. The report required under Paragraph 57 shall include
 17 the data used in the calculation and an explanation of the basis for any estimates of missing data
 18 points.

19 **66. Tail Gas Incidents.**

20 a. Investigation, Reporting, Corrective Action and Stipulated Penalties. For Tail
 21 Gas Incidents, Chevron shall follow the same investigative, reporting, corrective action and
 22 assessment of stipulated penalty procedures as those outlined in Paragraphs 57 through 64 for
 23 Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a
 24 TGU, unscheduled shutdowns of a Sulfur Recovery Plant or other miscellaneous unscheduled
 25 Sulfur Recovery Plant events which result in a Tail Gas Incident. This Paragraph 66 shall apply
 26 to the Salt Lake City SRP and Pascagoula SRU 2/3 on and after the date Chevron is required to
 27 be in compliance with NSPS Subpart J under Paragraph 48 and 49, as applicable.
 28

b. Calculation of the Quantity of SO₂ Emissions Resulting from a Tail Gas

Incident: For the purposes of this Consent Decree, the quantity of SO₂ emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

- i. If the Tail Gas Incident is combusted in a flare the SO₂ emissions are calculated using the methods outlined in Paragraph 65; or
- ii. If the Tail Gas Incident is a event exceeding the 250 ppmvd (NSPS J limit), from a monitored Sulfur Recovery Plant incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{inc.}]_i [Conc. SO_2 - 250]_i [0.169 \times 10^{-6}] \left[\frac{20.9 - \% O_2}{20.9} \right]_i$$

Where:

ER_{TGI} = Emissions from Tail Gas at the Sulfur Recovery Plant incinerator, SO₂ lb over a 24 hour period

TD_{TGI} = Total Duration (number of hours) when the incinerator CEMS exceeded 250 ppmvd SO₂ corrected to 0% O₂ on a rolling twelve hour average, in each 24 hour period of the Incident

i = Each hourly average

$FR_{inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

$Conc. SO_2$ = Each actual 12 hour rolling average SO₂ concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O₂, for each hour of the Incident

$\% O_2$ = O₂ concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident

$$0.169 \times 10^{-6} = [lb \text{ mole of } SO_2 / 379 SO_2] [64 \text{ lbs } SO_2 / lb \text{ mole } SO_2] [1 \times 10^{-6}]$$

1 Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

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

5 **K. Control of Hydrocarbon Flaring Incidents.**

6 67. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, Chevron
7 shall follow the same investigative, reporting, and corrective action procedures as those outlined
8 in Paragraphs 57 and 58 for Acid Gas Flaring Incidents; provided however, that in lieu of
9 analyzing possible corrective actions under Paragraph 57.v and taking interim and/or long-term
10 corrective action under Paragraph 58.a for a Hydrocarbon Flaring Incident attributable to the
11 Startup or Shutdown of a unit that Chevron has previously analyzed under this Paragraph,
12 Chevron may identify such prior analysis when submitting the report required under this
13 Paragraph. Stipulated penalties under Paragraphs 60 through 62 and 143 shall not apply to
14 Hydrocarbon Flaring Incident(s). The formulas at Paragraph 65, used for calculating the
15 quantity and rate of sulfur dioxide emissions during AG Flaring Incidents, shall be used to
16 calculate the quantity and rate of sulfur dioxide emissions during HC Flaring Incidents.

17 If Chevron determines that the Hydrocarbon Flaring Incident is attributable solely to the
18 combustion of refinery fuel gas that contains less than 160 ppm of H₂S, it shall so demonstrate
19 in its report under this Paragraph 67, and no further action shall be required for such incidents
20 under this Paragraph 67. In addition or in the alternative, if Chevron determines that the
21 Hydrocarbon Flaring Incident is attributable to the combustion of a stream or streams of
22 Continuous or Intermittent Routinely-Generated Fuel Gases prior to Chevron's implementing
23 actions to address such stream(s) when and as required by Paragraph 54.a.ii., it shall so
24 demonstrate in its report under this Paragraph 67, and no further action shall be required for such
25 incidents under this Paragraph 67.

26 **L. Benzene Waste NESHAP Program Enhancements.** In addition to continuing to
27 comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene
28 Waste NESHAP" or "Subpart FF"), Chevron agrees to undertake the measures set forth

1 in this Section V.L to ensure continuing compliance with Subpart FF and to minimize or
2 eliminate fugitive benzene waste emissions at each Refinery that is subject to this Consent
3 Decree.

4 68. **Current Compliance Status.** Chevron shall comply with the compliance
5 options specified below:

6 a. On the Date of Entry, the El Segundo, Hawaii and Pascagoula Refineries shall
7 comply with the compliance option set forth at 40 C.F.R. § 61.342(c), utilizing the exemptions set
8 forth in 40 C.F.R. § 61.342(c)(2) and (c)(3)(ii) (hereinafter referred to as the “2 Mg compliance
9 option”);

10 b. On the Date of Entry, the Richmond Refinery shall comply with the compliance
11 option set forth at 40 C.F.R. § 61.342(e) (herein referred to as the “6BQ compliance option”);

12 c. By no later than December 31, 2005, the Salt Lake City Refinery shall comply
13 with the 6BQ compliance option, consistent with the provisions of Paragraph 71.c.

14 69. **Refinery Compliance Status Changes.** Commencing on the Date of Entry and
15 continuing through termination, Chevron shall not change the compliance status of any Refinery
16 from the 6BQ compliance option to the 2 Mg compliance option. Chevron shall consult with EPA
17 and the appropriate Plaintiff-Intervenor before making any change in compliance strategy not
18 expressly prohibited by this Paragraph. All changes must be undertaken in accordance with the
19 regulatory provisions of the Benzene Waste NESHAP.

20 70. **One-Time Review and Verification of Each Refinery’s TAB and**
21 **Compliance with the Benzene Waste NESHAP, including the 2 Mg or 6 BQ Compliance**
22 **Options.**

23 a **Phase One of the Review and Verification Process.** By no later than 150 days
24 from the Date of Entry of this Consent Decree, Chevron shall complete a review and verification of
25 each Refinery’s most recent TAB submittal and, except for Salt Lake City, each Refinery’s
26 compliance with the Benzene Waste NESHAP, including the 2 Mg or 6 BQ compliance option, as
27 applicable. For each Refinery, Chevron’s review and verification process shall include, but not be
28 limited to:

- 1 i. an identification of each waste stream that is required to be included in the
2 Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag
3 layer dumps, desalter vessel process sampling points, other sample wastes,
4 maintenance wastes, and turnaround wastes);
- 5 ii. a review and identification of the calculations and/or measurements used to
6 determine the flows of each waste stream for the purpose of ensuring the
7 accuracy of the annual waste quantity for each waste stream;
- 8 iii. an identification of the benzene concentration in each waste stream, including
9 sampling for benzene concentration at no less than 10 waste streams per
10 Refinery consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3);
11 provided however, that previous analytical data or documented knowledge of
12 waste streams may be used, 40 C.F.R. § 61.355(c)(2), for streams not sampled;
- 13 iv. an identification of whether or not the stream is controlled consistent with the
14 requirements of Subpart FF; and
15 an identification of any existing noncompliance with the requirements of
16 Subpart FF.

17 By no later than thirty (30) days following the completion of Phase One of the review
18 and verification process, Chevron shall submit a Benzene Waste NESHAP Compliance Review
19 and Verification report ("BWON Compliance Review and Verification Report") to EPA and the
20 appropriate Plaintiff-Intervenor(s) that sets forth the results of Phase One, including but not
21 limited to the items identified in (i) through (v) of this Paragraph 70.a. At its option, Chevron
22 may submit one BWON Compliance Review and Verification Report that includes the results of
23 all Refineries or may submit separate BWON Compliance Review and Verification Reports.

24 b. Phase Two of the Review and Verification Process. Based on EPA's review of
25 the BWON Compliance Review and Verification Report(s), EPA may select up to 20 additional
26 waste streams at each Refinery for sampling for benzene concentration. Chevron will conduct
27 the required sampling and submit the results to EPA within sixty (60) days of receipt of EPA's
28 request. Chevron will use the results of this additional sampling to reevaluate the TAB and the

1 uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification
2 Report, as needed. To the extent that EPA requires Chevron to re-sample any waste stream
3 sampled by Chevron on or after January 1, 2002, Chevron may average the results of such
4 sampling events. Chevron shall submit an amended BWON Compliance Review and
5 Verification Report within ninety (90) days following the date of the completion of the required
6 Phase Two sampling, if Phase Two sampling is required by EPA.

7 71. **Implementation of Actions Necessary to Correct Non-Compliance or to**
8 **Come Into Compliance.**

9 a. Amended TAB Reports. If the results of the BWON Compliance Review and
10 Verification Report(s) indicate(s) that the Refinery's most recently-filed TAB report does not
11 satisfy the requirements of Subpart FF, Chevron shall submit, by no later than sixty (60) days
12 after completion of the BWON Compliance Review and Verification Report(s), an amended
13 TAB report to the appropriate Plaintiff-Intervenor. Chevron's BWON Compliance Review and
14 Verification Report(s) shall be deemed a TAB report for purposes of Subpart FF reporting to
15 EPA.

16 b. All Refineries (except Salt Lake City). If the results of the BWON
17 Compliance Review and Verification Report(s) indicate that Chevron is not in compliance with
18 the Benzene Waste NESHAP, including the 6BQ compliance option at the Richmond Refinery
19 and the 2 Mg compliance option at the El Segundo, Hawaii and Pascagoula Refineries, Chevron
20 shall submit to EPA and the appropriate Plaintiff-Intervenor, by no later than sixty (60) days
21 after completion of the BWON Compliance Review and Verification Report(s), a plan that
22 identifies with specificity the compliance strategy and schedule that Chevron will implement to
23 ensure that the subject Refinery complies with its applicable compliance option as soon as
24 practicable.

25 c. Salt Lake City Refinery By March 31, 2004, Chevron shall submit to EPA and
26 to the State of Utah a plan that identifies with specificity the compliance strategy and activities
27 that Chevron will implement and undertake to ensure that the Refinery complies with the 6BQ
28 Compliance Option and with all other provisions of this Section V.L applicable to the Richmond

1 Refinery under this Consent Decree, as soon as practicable but by no later than December 31,
2 2005.

3 If Chevron intends to seek an alternative means of emission limitation under 40 C.F.R.
4 § 61.353 based on its biodisc system being equivalent to an enhanced biodegradation unit under
5 40 C.F.R. § 61.348(b)(2)(ii)(B), this plan must also identify the activities Chevron will undertake
6 to ensure compliance by December 31, 2005, if its request is denied within 90 days of its receipt
7 by EPA. If Chevron's request has not been approved or denied within 90 days after its receipt
8 by EPA, the parties understand and agree that the December 31, 2005 compliance date shall then
9 be extended by an identical period (e.g., if the request is denied on the 100th day after EPA
10 receipt, then the compliance date would then be January 10, 2006).

11 d. Review and Approval of Plans. Any plans submitted pursuant to Paragraphs
12 71.b and 71.c shall be subject to the approval of, disapproval of, or modification by EPA, which
13 shall act after an opportunity for consultation with the appropriate Plaintiff-Intervenor. Within
14 sixty (60) days after receiving any notification of disapproval or request for modification from
15 EPA, Chevron shall submit to EPA and the appropriate Plaintiff-Intervenor a revised plan that
16 responds to all identified deficiencies. Upon receipt of approval or approval with conditions,
17 Chevron shall implement the plan. Disputes arising under this Paragraph 71.d shall be resolved
18 in accordance with the dispute resolution provisions of this Consent Decree.

19 e. Certification of Compliance with the 2 Mg or 6 BQ Compliance Option, as
20 Applicable. By no later than thirty (30) days after completion of all actions required pursuant to
21 Paragraphs 71.b and 71.c to come into compliance with the applicable compliance option,
22 Chevron shall submit its certification and a report to EPA and the appropriate Plaintiff-
23 Intervenor that each such Refinery is in compliance with the Benzene Waste NESHAP.

24 72. Carbon Canisters: Chevron shall comply with the requirements of this
25 Paragraph 72 at all locations at Chevron's Refineries where a carbon canister(s) is utilized as a
26 control device under the Benzene Waste NESHAP.

27 a. By not later than June 30, 2004, Chevron shall complete installation of primary
28 and secondary carbon canisters at locations currently utilizing single canisters and operate them

1 in series at all Refineries (except Salt Lake City). For the Salt Lake City Refinery, Chevron shall
2 complete installation of primary and secondary carbon canisters and operate them in series by no
3 later than such time as Chevron completes installation and start-up of the equipment necessary to
4 ensure compliance under its approved plan and schedule under Paragraph 71. By no later than
5 thirty (30) days following completion of the installation of the dual canisters, Chevron shall
6 submit a report certifying the completion of the installation, except that the Salt Lake City
7 Refinery certification and report shall be a made a part of its certification and report under
8 Paragraph 71.e. The report shall include a list of all locations within each Refinery where
9 secondary carbon canisters were installed, the installation date of each secondary canister, the
10 date that each secondary canister was put into operation and whether VOC or benzene will be
11 used to monitor for breakthrough at each such canister under and as required by Paragraph 72.c.

12 b. Except as expressly permitted under Paragraph 72.f., Chevron shall not use
13 single carbon canisters for any new units or installations that require vapor control pursuant to
14 the Benzene Waste NESHAP at any of its Refineries.

15 c. For dual carbon canister systems, "breakthrough" between the primary and
16 secondary canister is defined as any reading equal to or greater than 50 ppm volatile organic
17 compounds excluding ethane and methane (hereinafter "VOC") or 5 ppm benzene. If, however,
18 EPA determines, in consultation with Chevron, that the results of the study in Paragraph 81.b
19 demonstrate that a concentration greater than 50 ppm VOCs or 5 ppm benzene is a more
20 appropriate measure of breakthrough, then breakthrough under this Paragraph 72.c shall be re-
21 defined consistent with EPA's determination.

22 d. By no later than seven (7) days after the installation of each secondary carbon
23 canister (and by June 30, 2004 for in-series dual canister systems already used or installed prior
24 to the Date of Entry), Chevron shall start to monitor for breakthrough between the primary and
25 secondary carbon canisters at times when there is actual flow to the carbon canister, in
26 accordance with the frequency specified in 40 C.F.R. § 61.354(d), and shall monitor the outlet of
27 the secondary canister on a monthly basis or at its design replacement interval (whichever is
28 less) to verify the proper functioning of the system .

1 e. Chevron shall replace the original primary carbon canisters (or route flow to an
2 appropriate alternative control device) immediately when breakthrough is detected between the
3 primary and secondary canister. The original secondary carbon canister (or a fresh carbon
4 canister) will become the new primary carbon canister and a fresh carbon canister will become
5 the secondary canister. For purposes of this Paragraph 72.e, “immediately” shall mean eight (8)
6 hours for canisters of 55 gallons or less, twenty-four (24) hours for canisters greater than 55
7 gallons but less than 10,000 pounds, and 48 hours for canisters of 10,000 pounds or larger. If
8 breakthrough is detected at a canister of 10,000 pounds or larger, Chevron shall make every
9 effort practicable to shut off the flow to the canister system until the replacement canister is in
10 place.

11 In lieu of replacing the primary canister immediately, Chevron may elect to monitor the
12 secondary canister the day breakthrough between the primary and secondary canister is
13 identified and each calendar day thereafter. This daily monitoring shall continue until the
14 primary canister is replaced. If either benzene or VOC is detected at the outlet of the secondary
15 canister during this period of daily monitoring, both canisters must be replaced within 8 hours.

16 f. Chevron may utilize properly sized single canisters for short-term operations
17 such as with temporary storage tanks or as temporary control devices. For canisters operated as
18 part of a single canister system, breakthrough is defined for purposes of this Decree as any
19 reading of VOC or benzene above background. Beginning no later than January 1, 2004,
20 Chevron shall monitor for breakthrough from single carbon canisters each business day (Monday
21 through Friday, excluding legal holidays) there is actual flow to the carbon canister. Chevron
22 shall replace the single carbon canister with a fresh carbon canister, discontinue flow or route the
23 stream to an alternate, appropriate device immediately when breakthrough is detected. For this
24 Paragraph 72.f., “immediately” shall mean eight (8) hours for canisters of 55 gallons or less and
25 twenty-four (24) hours for canisters greater than 55 gallons. If a single canister has been found
26 to exceed the applicable breakthrough concentration, flow must be discontinued to that canister
27 immediately. Such a spent canister may not be placed back into BWON vapor control service
28 until it has been appropriately regenerated.

1 g. Chevron shall maintain a supply of fresh carbon canisters at each Refinery at
2 all times.

3 h. Records for the requirements of Paragraph 72 shall be maintained in
4 accordance with 40 C.F.R. § 61.356(j)(10).

5 73. **Annual Program.** By not later than June 30, 2004, Chevron shall establish an
6 annual program of reviewing process information for each Refinery, including but not limited to
7 construction projects, to ensure that all new benzene waste streams are included in each
8 Refinery's waste stream inventory.

9 74. **Laboratory Audits.** Chevron shall conduct audits of all laboratories that perform
10 analyses of Chevron's Benzene Waste NESHAP samples to ensure that proper analytical and
11 quality assurance/quality control procedures are followed.

12 a. By no later than June 30, 2004, Chevron shall complete at least three audits of
13 laboratories used by it. By December 31, 2004, Chevron shall complete audits of all other
14 laboratories used by it. In addition, Chevron shall audit any laboratory to be used for analyses of
15 benzene samples prior to such use.

16 b. If Chevron has completed an audit of any laboratory on or after June 30, 2002,
17 Chevron shall not be required to perform additional audits of those laboratories pursuant to
18 Paragraph 74.a., above.

19 c. During the life of this Consent Decree, Chevron shall conduct subsequent
20 laboratory audits, such that each laboratory is audited every two (2) years.

21 d. Chevron may retain third parties to conduct these audits or use audits
22 conducted by others as its own, but the responsibility and obligation to ensure compliance with
23 this Consent Decree and Subpart FF are solely Chevron's.

24 75. **Benzene Spills.** Beginning on the Date of Entry, for each spill at each
25 Refinery, Chevron shall review such spills to determine if more than 10 pounds of benzene waste
26 was generated in any 24 hour period. Chevron shall include the benzene generated by such spills
27 in the TAB and in the uncontrolled benzene quantity calculations for each Refinery, as and to the
28 extent required by Subpart FF.

1 76. **Training.**

2 a. By no later than January 1, 2004, Chevron shall develop and begin
3 implementation of annual (i.e., once each calendar year) training for all employees asked to draw
4 benzene waste samples.

5 b. By no later than March 31, 2004, (June 30, 2005 at Salt Lake City Refinery),
6 Chevron shall complete the development of standard operating procedures for all control
7 devices used to comply with the Benzene Waste NESHAP. By no later than December 31, 2004
8 (December 31, 2005 at Salt Lake City Refinery), Chevron shall complete an initial training
9 program regarding these procedures for all operators assigned to this equipment. Comparable
10 training shall also be provided to any persons who subsequently become operators, prior to their
11 assumption of this duty. “Refresher” training in these procedures shall be performed on a three
12 year cycle.

13 c. As part of Chevron’s training program, Chevron must ensure that the
14 employees of any contractors hired to perform the requirements of this Paragraph are properly
15 trained to implement all applicable provisions of this Consent Decree.

16 77. **Waste Slop/Off-Spec Oil Management.**

17 a. By no later than March 31, 2004, Chevron shall submit to EPA and the
18 appropriate Plaintiff-Intervenor schematics for each Refinery that: (a) depict the waste
19 management units (including sewers) that handle, store, and transfer waste slop/off-spec oil
20 streams; (b) identify the control status of each waste management unit; and (c) show how such
21 oil is transferred within the Refinery. Representatives from Chevron and EPA thereafter may
22 confer about the appropriate characterization of each Refinery’s waste/slop/off-spec oil streams
23 and the necessary controls, if any, for the waste management units handling such oil streams for
24 purposes of each Refinery’s TAB calculation and compliance option. At a mutually agreed upon
25 time, Chevron shall submit revised schematics that reflect the Parties’ agreements regarding the
26 characterization of these oil streams and the appropriate control standards, if necessary.

27 b. **Non-Aqueous Benzene Waste Streams.** All waste management units handling
28 non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, shall meet the applicable

1 control standards of Subpart FF.

2 c. Aqueous Benzene Waste Streams. For purposes of calculating each Refinery's
3 TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), Chevron shall include all
4 waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a
5 process or put into a process feed tank (unless the tank is used primarily for the storage of
6 wastes). Appropriate adjustments shall be made to such calculations to avoid the double-
7 counting of benzene. For purposes of complying with the 2 megagram or 6BQ compliance
8 option, all waste management units handling benzene waste streams shall either meet the
9 applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity
10 count toward the applicable 2 megagram or 6BQ limit. Wastes with a flow weighted annual
11 average benzene concentration of less than 10 ppmw shall not be counted against the 2
12 megagram limit. 40 C.F.R. § 61.342(c)(2).

13 d. Plan to Quantify Uncontrolled Waste Slop/Off-Spec Oil Streams. By no later
14 than June 30, 2004 (December 31, 2005 for Salt Lake City Refinery), Chevron shall submit
15 plan(s) to EPA and the appropriate Plaintiff-Intervenor to quantify waste slop/off-spec oil
16 movements for all benzene waste streams which are not controlled at each of its Refineries. EPA
17 will review the plan and may recommend revisions consistent with the Benzene Waste
18 NESHAP.

19 e. Disputes under this Paragraph 77 shall be resolved in accordance with the
20 dispute resolution provisions of this Consent Decree.

21 78. End of Line Sampling (6 BQ Compliance Option). Chevron shall conduct a
22 quarterly "end of the line" benzene determination at the Richmond and Salt Lake City Refineries
23 under the terms of this Paragraph 78.

24 a. By no later than March 30, 2004, for the Richmond Refinery and by no later
25 than December 31, 2005, for the Salt Lake City Refinery (or such other period as may be
26 identified in its approved compliance schedule and plan under Paragraph 71.c), Chevron shall
27 submit to EPA and the appropriate Plaintiff-Intervenor for approval by EPA a plan designed to
28 determine the benzene quantity in uncontrolled waste streams that includes, but need not be

1 limited to, sampling locations and methods for flow calculations to be used in the quarterly “end
2 of line” benzene determination (“EOL Plan”). Each such plan shall also require quarterly
3 sampling of all uncontrolled waste streams that count toward the 6 Mg/yr calculation and that
4 contain greater than 0.05 Mg/yr of benzene to the Refinery’s Total Annual Benzene quantity
5 (BQ). Such EOL Plans may identify commingled, exempt waste streams for sampling, provided
6 Chevron demonstrates that the benzene quantity of these commingled streams will not be
7 underestimated. Additionally, waste streams that are non-aqueous at their point of generation
8 and do not become aqueous thereafter shall not be included in the EOL Plan.

9 b. If changes in processes, operations, or other factors lead Chevron to conclude
10 that its approved EOL Plan may no longer provide an accurate measure of the Refinery’s
11 quarterly “end of line” benzene determination and/or its uncontrolled aqueous waste streams,
12 Chevron shall submit to EPA and the appropriate Plaintiff-Intervenor a revised EOL Plan for
13 EPA approval.

14 c. Chevron shall commence sampling under its EOL Plan during the third
15 calendar quarter of 2004 at the Richmond Refinery and not later than the second calendar quarter
16 of 2006 at the Salt Lake City Refinery. Chevron shall take, and have analyzed, at least three
17 representative samples from each approved sampling location. Chevron shall use the average of
18 all samples taken and the approved flow calculations to make its quarterly “end of the line”
19 benzene determination and in estimating a calendar year value for each Refinery.

20 d. If the quarterly benzene determination exceeds 1.5 Mg/yr or if the estimated
21 calendar year value exceeds 6 Mg/yr, Chevron shall prepare and provide to EPA and the
22 appropriate Plaintiff-Intervenor a written summary and schedule of activities necessary to
23 minimize benzene wastes at such Refinery so as to ensure that it complies with the 6 BQ
24 compliance option for that calendar year. This summary and schedule are due no later than sixty
25 (60) days after the close of such quarter.

26 e. After at least 8 quarters of sampling under an approved EOL Plan, Chevron
27 may submit to EPA and the appropriate Plaintiff-Intervenor a report that places uncontrolled
28 aqueous waste streams at a Refinery into three categories: (a) consistently <0.05 Mg/yr benzene

1 that may not warrant continued sampling; (ii) consistently ≥ 0.05 Mg/yr benzene but with low
2 variability that may warrant less frequent sampling; and (iii) all others that are consistently ≥ 0.05
3 Mg/yr benzene. If EPA determines, after an opportunity for consultation with Chevron and the
4 affected Plaintiff-Intervenor, that such report warrants a change in monitoring required at that
5 Refinery under Paragraph 78.a, that requirement will be modified under and as provided for in
6 Paragraph 234 (Modification).

7 79. **End of Line Sampling (2 Mg Compliance Option)**. Chevron shall conduct a
8 quarterly “end of the line” benzene determination at the El Segundo, Hawaii and Pascagoula
9 Refineries under the terms of this Paragraph 79.

10 a. By no later than March 30, 2004, Chevron shall submit to EPA and the
11 appropriate Plaintiff-Intervenor for approval a by EPA plan designed to determine the benzene
12 quantity in uncontrolled waste streams that includes sampling locations and methods for flow
13 calculations to be used in the quarterly “end of line” benzene determination (“EOL Plan”). Each
14 such plan shall also require: (i) quarterly sampling of all uncontrolled waste streams that count
15 toward the 2 Mg/yr calculation and that contain greater than 0.05 Mg/yr of benzene; and (ii)
16 monthly sampling of all uncontrolled waste streams that qualify for the 10 ppmw exemption (40
17 C.F.R. § 61.342(c)(2)) and that contain greater than 0.1 Mg/yr of benzene. Such EOL Plans may
18 identify commingled, exempt waste streams for sampling, provided Chevron demonstrates that
19 the benzene quantity of these commingled streams will not be underestimated.

20 b. If changes in processes, operations, or other factors lead Chevron to conclude
21 that its approved EOL Plan may no longer provide an accurate measure of the Refinery’s
22 quarterly “end of line” benzene determination and/or its uncontrolled waste streams, Chevron
23 shall submit a revised EOL Plan to EPA and the appropriate Plaintiff-Intervenor for EPA
24 approval.

25 c. Chevron shall commence sampling under its EOL Plan during the third
26 calendar quarter of 2004. Chevron shall take, and have analyzed, at least three representative
27 samples from each approved sampling location. Chevron shall use the average of all samples
28 and approved flow calculations to make its quarterly “end of the line” benzene determination and

1 in estimating a calendar year value for each Refinery.

2 d. If the quarterly benzene determination exceeds 0.5 Mg/yr or if the estimated
3 calendar year value exceeds 2 Mg/yr, Chevron shall prepare and provide to EPA and the
4 appropriate Plaintiff-Intervenor a written summary and schedule of activities necessary to
5 minimize benzene wastes at such Refinery so as to ensure that it complies with the 2 Mg
6 compliance option for that calendar year. This summary and schedule are due no later than sixty
7 (60) days after the close of such quarter.

8 e. After at least 8 quarters of sampling under an approved EOL Plan, Chevron
9 may submit a report to EPA and the appropriate Plaintiff-Intervenor that places uncontrolled
10 aqueous waste streams at a Refinery into three categories: (a) consistently <0.05 Mg/yr benzene
11 that may not warrant continued sampling; (ii) consistently ≥ 0.05 Mg/yr benzene but with low
12 variability that may warrant less frequent sampling; and (iii) all others that are consistently ≥ 0.05
13 Mg/yr benzene. If EPA determines, after an opportunity for consultation with Chevron and the
14 affected Plaintiff-Intervenor, that such report warrants a change in monitoring required at that
15 Refinery under Paragraph 79.a, this requirement will be modified under and as provided for in
16 Paragraph 234 (Modification).

17 80. **Miscellaneous Measures.** By June 30, 2004 (or for Salt Lake City Refinery,
18 December 31, 2005), Chevron shall:

19 a. Manage all groundwater remediation wastes at each of its Refineries in
20 appropriate waste management units under and as required by the Benzene Waste NESHAP;

21 b. Conduct monthly visual inspections of all Subpart FF water traps within the
22 Refinery's individual drain systems;

23 c. Identify and mark all area drains that are segregated stormwater drains;

24 d. On a weekly basis, visually inspect all Subpart FF conservation vents on
25 process sewers for detectable leaks; reset any vents where leaks are detected; and record the
26 results of the inspections. After two (2) years of weekly inspections, and based upon an
27 evaluation of the recorded results, Chevron may submit a request to the appropriate EPA Region
28 to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent.

1 Nothing in this Paragraph 80.d. shall require Chevron to monitor conservation vents on fixed
2 roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has
3 occurred, Chevron may elect to visually inspect such indicators on a monthly basis and, if flow is
4 then detected, Chevron shall then visually inspect that indicator on a weekly basis for four
5 weeks. If flow is detected during any two of those four weeks, Chevron shall install a carbon
6 canister on that vent until appropriate corrective action(s) can be implemented to prevent such
7 flow.; and

8 e. Conduct quarterly monitoring of the oil-water separators in accordance with
9 the “no detectable emissions” provision in 40 C.F.R. § 61.347.

10 81. **Projects/Investigations.**

11 a. By no later than January 1, 2004, Chevron will report to EPA and the
12 appropriate Plaintiff-Intervenor that, for waste and process stream sampling points that are
13 subject to the closed purge sampling device requirements of 40 C.F.R., Part 63, Subpart CC,
14 compliance with those requirements has been achieved.

15 b. Chevron may conduct a study of the effectiveness of the benzene and VOC
16 limits under Paragraph 72.c. This study shall last no less than two (2) years and must be
17 performed in accordance with the guidelines established in Appendix J. Chevron shall submit a
18 schedule and statement of work to EPA at least 90 days prior to beginning such work. Chevron
19 shall submit a report to EPA and the appropriate Plaintiff-Intervenor summarizing the results of
20 the study within ninety (90) days of completion and may request a revision of the limits under
21 Paragraph 72.c based upon the results of that study and any other relevant information, including
22 similar studies that may be performed by or for others.

23 82. **Recordkeeping and Reporting Requirements for Section V.L.** Chevron
24 shall submit, as and to the extent required, the following materials in the progress report(s) for
25 the quarter in which the following identified activities occurred or are required:

26 a. BWON Compliance Review and Verification Report (¶ 70.a), as amended, if
27 necessary (¶ 70.b);

28 b. Amended TAB Report, if necessary (¶ 71.a);

1 c. Schedule and plan to come into compliance with the applicable compliance
2 option, if the BWON Compliance Review and Verification Reports indicate non-compliance (§
3 71.b);

4 d. Schedule and plan for the Salt Lake City Refinery to come into compliance
5 with the 6 BQ compliance option and the applicable provisions of this Consent Decree (§ 71.c),

6 e. Compliance certification, if and as necessary (§ 71.e);

7 f. Report certifying the completion of the installation of dual carbon canisters
8 (§ 72.a);

9 g. Schematics of waste/slop/off-spec oil movements (§ 77.a), as revised, if
10 necessary (§ 77.a);

11 h. Plan to quantify uncontrolled waste/slop/off-spec oil movements (§ 77.d)

12 i. EOL Plans and revised EOL Sampling Plans, if necessary (§§ 78.a and 78.b);

13 j. Plan to ensure that uncontrolled benzene does not equal or exceed, as
14 applicable, 2 or 6 Mg/yr -- or is minimized -- based on projected calendar year uncontrolled
15 benzene quantities as determined through EOL sampling (§§ 78.d and 79.d)

16 k. Results of the study of “breakthrough” in carbon canisters (§ 81.b).

17 l. Identify all laboratory audits completed during the preceding calendar year
18 under Paragraph 74.a, including the laboratory audited during that quarter, a description of the
19 methods used in the audit and the results of the audit, in the progress report for the 4th quarter of
20 that year.

21 m. Describe the measures taken that calendar quarter to comply with the training
22 provisions of Paragraph 76;

23 n. Provide all quarterly “end of line” benzene determinations and a summary of
24 supporting sampling results for the preceding calendar year under Paragraphs 78 and 79 in the
25 progress report for the 4th quarter of that year. The report shall include a list of all waste streams
26 sampled and the results of the benzene analysis for each sample; and

27 o. Describe the actions that Chevron is taking to identify and correct the source of
28 the potentially elevated benzene quantities and/or to ensure continuing compliance with the

1 Benzene Waste NESHAP under and as provided in Paragraphs 78 and 79.

2 **M. Leak Detection and Repair (“LDAR”) Program Enhancements.** In order to minimize or
3 eliminate fugitive emissions of volatile organic compounds (“VOCs”), benzene, volatile hazardous
4 air pollutants (“VHAPs”), and organic hazardous air pollutants (“HAPs”) from equipment in light
5 liquid and/or in gas/vapor service, Chevron shall undertake the enhancements in this Section V.M.
6 to its LDAR programs under Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and
7 GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC; and applicable state or local
8 LDAR requirements at each Refinery that is subject to this Consent Decree. The terms
9 “equipment,” “in light liquid service” and “in gas/vapor service” shall have the definitions set forth
10 in the applicable provisions of Title 40 of the Code of Federal Regulations, Part 60, Subparts VV
11 and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC; and applicable state and/or
12 local LDAR regulations. Chevron is not required to include in the enhanced program described
13 herein any equipment or units not in light liquid or gas/vapor service and not otherwise subject to
14 any applicable federal, state, or local LDAR regulation that is enforceable by the United States or a
15 Plaintiff-Intervenor.

16 83. **Written Refinery-Wide LDAR Program.** By no later than June 30, 2004, Chevron shall
17 develop and maintain a written LDAR program for compliance with all applicable federal, state, and local
18 LDAR regulations applicable to equipment in light liquid or gas/vapor service at each of its Refineries.
19 Chevron shall update each such program as may be necessary to ensure continuing compliance. Each
20 Refinery’s program shall include at a minimum:

21 a. An overall, Refinery leak rate goal that will be a target for achievement on a process-unit-
22 by-process-unit basis;

23 b. An identification of all equipment in light liquid and/or in gas/vapor service that has the
24 potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained by
25 the Refinery. Chevron is not required to identify any equipment or units not otherwise subject to any
26 applicable federal, state, or local LDAR regulation that is enforceable by the United States or a Plaintiff-
27 Intervenor;

28 c. Procedures for identifying leaking equipment within process units that are

1 owned and maintained by the Refinery;

2 d. Procedures for repairing and keeping track of leaking equipment;

3 e. Procedures for identifying and including in the LDAR program new
4 equipment;

5 f. A process for evaluating new and replacement equipment to promote
6 consideration and installation of equipment that will minimize leaks and/or eliminate chronic
7 leakers; and

8 g. A description of the Refinery's LDAR monitoring organization and a
9 designation of the person or position that is responsible for LDAR management and that has the
10 authority to implement LDAR improvements at the Refinery, as required by Paragraph 93.

11 84. **Training.** By no later than June 30, 2004, Chevron shall implement the
12 following training programs at each Refinery:

13 a. For personnel newly-assigned to LDAR responsibilities, Chevron shall require
14 LDAR training prior to each employee beginning such work;

15 b. For all personnel assigned LDAR responsibilities, Chevron shall provide and
16 require completion of annual LDAR training or require its LDAR contractor to provide such
17 training (initial annual LDAR training for all such personnel will be completed not later than
18 December 31, 2004); and

19 c. For all other Refinery operations and maintenance personnel (including
20 contract personnel), Chevron shall provide and require completion of an initial training program
21 that includes instruction on aspects of LDAR that are relevant to the person's duties (initial
22 LDAR training for all such personnel will be completed not later than December 31, 2004).

23 "Refresher" training in LDAR shall be performed on a three year cycle.

24 85. **LDAR Audits.** Chevron shall implement Refinery audits according to the
25 schedule and requirements set forth in this Paragraph 85 to ensure each Refinery's compliance
26 with all applicable LDAR requirements. The LDAR audits shall include but not be limited to,
27 comparative monitoring, records review, tagging, data management, and observation of the
28 LDAR technicians' calibration and monitoring techniques.

1 a. Initial Audits. By no later than 210 days from the Date of Entry of this Consent
2 Decree, Chevron shall complete a Third-Party Audit at each Refinery, submit all such audit reports to
3 EPA and the appropriate Plaintiff-Intervenor, including an identification of any noncompliance issues,
4 and certify that such Refinery is then in compliance with applicable LDAR requirements. For
5 noncompliance that cannot reasonably be remedied by 210 days from the Date of Entry of this Consent
6 Decree, Chevron shall submit and adhere to an EPA approved compliance schedule to remedy such
7 noncompliance.

8 b. Third-Party Audits. Chevron shall retain a contractor(s) to perform a third-party
9 audit of the Refinery's LDAR program at least once every four years. The first third-party audit for each
10 Refinery shall be completed no later than 210 days from the Entry of the Consent Decree.

11 c. Internal Audits. Chevron shall conduct internal audits of each Refinery's LDAR
12 program by sending personnel familiar with the LDAR program and its requirements from one or more
13 of Chevron's other Refineries or locations to audit another Chevron Refinery. Chevron shall complete
14 an internal LDAR audit by no later than two years from the date of the completion of the third-party
15 audits required in Paragraphs 85.a and 85.b. Chevron shall perform an internal audit of the each
16 Refinery's LDAR program at least once every four years. Chevron may elect to retain third-parties to
17 undertake the internal audit, provided that an LDAR audit at each Refinery occurs every two (2) years.

18 d. To ensure that an audit occurs every two years at each Refinery, third-party and
19 internal audits shall be separated by not more than two years.

20 86. **Implementation of Actions Necessary to Correct Non-Compliance.** If the results
21 of any of the audits conducted pursuant to Paragraph 85 identify any areas of non-compliance, Chevron
22 shall implement, as soon as practicable, all steps necessary to correct the area(s) of non-compliance and
23 to prevent, to the extent practicable, a recurrence of the cause of such non-compliance. Chevron shall
24 retain the audit reports generated pursuant to Paragraph 85 and shall maintain a written record of the
25 corrective actions that Chevron takes in response to deficiencies identified in any audits. In the quarterly
26 report submitted pursuant to the provisions of Section IX of this Consent Decree (Recordkeeping and
27 Reporting) for the first calendar quarter of each year, Chevron shall submit to EPA and the appropriate
28 Plaintiff-Intervenor the

1 audit reports and corrective action records for audits performed and actions taken during the
2 previous year.

3 87. **Internal Leak Definition for Valves and Pumps.** Chevron shall utilize the
4 following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service,
5 unless other permit(s), regulations, or laws require the use of lower leak definitions.

6 a. **Leak Definition for Valves.** By no later than June 30, 2005, Chevron shall
7 utilize an internal leak definition of no greater than 500 ppm VOCs for each Refinery's valves,
8 excluding pressure relief devices.

9 b. **Leak Definition for Pumps.** By no later than June 30, 2005, Chevron shall
10 utilize an internal leak definition of no greater than 2000 ppm for each Refinery's pumps.

11 88. **Reporting, Recording, Tracking, Repairing and Remonitoring Leaks of**
12 **Valves and Pumps Based on the Internal Leak Definitions.**

13 a. **Reporting.** For regulatory reporting purposes, Chevron may continue to report
14 leak rates in valves and pumps against the applicable regulatory leak definition, or may use the
15 lower, internal leak definitions specified in Paragraph 87.

16 b. **Recording, Tracking, Repairing and Remonitoring Leaks.** Chevron shall
17 record, track, repair and re-monitor all leaks in excess of the internal leak definitions of
18 Paragraph 87 at such time as those definitions become applicable. Except as provided otherwise
19 in this Section V.M, Chevron shall make a first attempt at repair within five (5) calendar days
20 and either complete repairs and re-monitor leaks or place such component on the Refinery's
21 delay of repair list within thirty (30) days.

22 89. **Initial Attempt at Repair of Valves.** By no later than March 31, 2004,
23 Chevron shall promptly make an "initial attempt" to repair any valve that has a reading greater
24 than 100 ppm of VOCs, excluding control valves and components that LDAR personnel are not
25 authorized to repair. Chevron or its designated contractor shall re-monitor, within five (5)
26 calendar days, all valves that LDAR personnel attempted to repair under this Paragraph. Unless
27 the re-monitored leak rate is greater than the applicable leak definition, no further action will be
28 necessary. If Chevron can demonstrate with sufficient, statistically significant monitoring data

1 over a period of at least two years that “initial attempts” to repair at 100 ppm worsen or do not
2 improve refinery leak rates, Chevron may request EPA to reconsider or amend this requirement.

3 90. **LDAR Monitoring Frequency.**

4 a. **Pumps.** When the lower internal leak definition for pumps becomes applicable
5 under Paragraph 87.b and unless more frequent monitoring is required by applicable federal,
6 state and/or local requirements, Chevron shall monitor pumps at the internal leak definition on a
7 monthly basis.

8 b. **Valves.** When the lower internal leak definition for valves becomes applicable
9 under Paragraph 87.a and unless more frequent monitoring is required by applicable federal,
10 state and/or local requirements, Chevron shall monitor valves at the internal leak definition on a
11 quarterly basis (other than difficult to monitor or unsafe to monitor valves). No monitoring skip
12 periods are permitted except as expressly authorized under Paragraph 90.c.

13 c. **Skip Periods (Salt Lake City and Richmond).** Chevron may implement the
14 Sustainable Skip Period Program set forth in Appendix K to this Consent Decree, which is
15 incorporated herein by reference, at the Salt Lake City and Richmond Refineries only. For units
16 complying with the Sustainable Skip Period, previous process unit monitoring results may be
17 used to determine the initial skip period interval provided that each valve has been monitored
18 using the 500 ppm leak definition. EPA or the appropriate Plaintiff-Intervenor may require
19 Chevron to implement more frequent monitoring of valves if the leak rate determined during an
20 EPA, State or local inspection demonstrates that more frequent monitoring is necessary because
21 actual leak percentages are higher than allowed under this Sustainable Skip Period Program, or
22 because more frequent inspections are required by law or regulation. In evaluating whether the
23 leak rate demonstrates that more frequent monitoring of valves is necessary, EPA or the
24 appropriate Plaintiff-Intervenor will determine the leak rate based on the total number of valves
25 then monitored in the process unit during such inspection. If a process unit that is included in
26 the Sustainable Skip Period Program is found to have a leaking valve percentage above two
27 percent during any monitoring period, that process unit must be monitored no less than monthly
28 thereafter, until such time as less frequent monitoring can be instituted under the Sustainable

1 Skip Period Program as set forth in Appendix K.

2 d. Monitoring After Turnaround or Maintenance. Chevron shall have the option
3 of monitoring affected valves and pumps within process unit(s) after completing a documented
4 maintenance, startup, or shutdown activity without having the results of the monitoring count as
5 a scheduled monitoring activity, provided that Chevron monitors according to the following
6 schedule:

- 7 i. For events involving 1000 or fewer valves and pumps, monitor within one (1)
8 week of the documented maintenance, start-up, or shutdown activity;
- 9 ii. For events involving greater than 1000 but fewer than 5000 valves and pumps,
10 monitor within two (2) weeks of the documented maintenance, start-up, or
11 shutdown activity; and
- 12 iii. For events involving greater than 5000 pumps and valves, monitor within four
13 (4) weeks of the documented maintenance, start-up, or shutdown activity.

14 91. **Electronic Monitoring, Storing, and Reporting of LDAR Data.**

15 a. Electronic Storing and Reporting of LDAR Data. Chevron has and will
16 continue to maintain an electronic database for storing and reporting LDAR data. By no later
17 than January 1, 2004, the electronic database shall include data identifying the date and time of
18 the monitored event, and the operator and instrument used in the monitored event.

19 b. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter.
20 By no later than January 1, 2004, Chevron shall maintain operational specifications for the data
21 logger, software and monitoring equipment it elects to use under this Consent Decree. Chevron
22 shall use dataloggers and/or electronic data collection devices during all LDAR monitoring.
23 Chevron, or its designated contractor, shall use its/their best efforts to transfer, by the end of the
24 next business day electronic data from electronic data logging devices to the electronic database
25 of Paragraph 91.a. For all monitoring events in which an electronic data collection device is
26 used, the collected monitoring data shall include a time and date stamp and identify the
27 operator/monitoring technician and the monitoring instrument used. Chevron may use paper
28 logs where necessary or more feasible (e.g., small rounds, re-monitoring, or when data loggers

1 are not available or broken), and shall record, at a minimum, the identity of the technician, the
2 date, monitoring starting and ending times, and an identification of the monitoring equipment.
3 Chevron shall use its best efforts to transfer any manually recorded monitoring data to the
4 electronic database of Paragraph 91.a within seven days of monitoring.

5 92. **QA/QC of LDAR Data.** By no later than March 31, 2004, Chevron (or a third
6 party contractor retained by Chevron) shall have developed and begun implementing procedures
7 for quality assurance/quality control (“QA/QC”) reviews of all data generated by LDAR
8 monitoring technicians. Chevron shall ensure that monitoring data provided by its contractors is
9 periodically reviewed for QA/QC by the contractors. At least once per calendar quarter,
10 Chevron shall perform a QA/QC review of each contractor’s monitoring data which shall
11 include, but not be limited to: number of components monitored per technician, time between
12 monitoring events and abnormal data patterns.

13 93. **LDAR Personnel.** Chevron has established a program that holds LDAR
14 personnel accountable for LDAR performance. Chevron shall continue to maintain a position at
15 each Refinery that is responsible for LDAR management and that has the authority to implement
16 LDAR improvements.

17 94. **Adding New Valves and Pumps.** By no later than June 30, 2004, Chevron
18 shall establish a tracking program for maintenance records (e.g., a Management of Change
19 program) to ensure that valves and pumps added to the Refinery during maintenance and
20 construction are integrated into each Refinery’s LDAR program.

21 95. **Calibration/Calibration Drift Assessment.**

22 a. **Calibration.** Chevron shall conduct all calibrations of LDAR monitoring
23 equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, EPA
24 Reference Test Method 21.

25 b. **Calibration Drift Assessment.** By no later than January 1, 2004, Chevron shall
26 conduct calibration drift assessments of LDAR monitoring equipment at the end of each
27 monitoring shift, at a minimum. Chevron shall conduct the calibration drift assessment using a
28 calibration gas with a concentration approximately equal to the applicable internal leak

1 definition, If any calibration drift assessment after the initial calibration shows a negative drift
2 of more than 10% from the previous calibration, Chevron shall re-monitor all valves that were
3 monitored since the last calibration that had a reading greater than 100 ppm and shall re-monitor
4 all pumps that were monitored since the last calibration that had a reading greater than 500 ppm.

5 96. **Delay of Repair.**

6 a. By no later than January 1, 2004, Chevron shall take the following actions for
7 any equipment that it intends and is allowed to place on the "delay of repair" list under
8 applicable regulations:

- 9 i. Require sign-off by the unit supervisor within thirty (30) days of identifying
10 that a piece of equipment is leaking at a rate greater than the applicable leak
11 definition) that such equipment qualifies for delayed repair under applicable
12 regulations,
13 ii. Include equipment that is placed on the "delay of repair" list in Chevron's
14 regular LDAR monitoring,
15 iii. Use its best efforts to isolate and repair pumps identified as leaking at a rate of
16 2000 ppm or greater.

17 b. By no later than June 30, 2004, Chevron shall take the following actions for
18 any equipment that it intends and is allowed to place on the "delay of repair" list under
19 applicable regulations:

- 20 i. For valves, other than control valves and pressure relief valves, that qualify to
21 be on the "delay of repair" list, use the "drill and tap" method (or an
22 equivalent), rather than place a valve on the "delay of repair" list, if it is
23 leaking at a rate of 50,000 ppm or greater unless Chevron can demonstrate that
24 there is a safety or major environmental concern by attempting to repairing the
25 leak in this manner. Chevron shall perform the first "drill and tap" (or
26 equivalent repair method) within fifteen days, except at the Hawaii Refinery
27 which shall perform such a first attempt within twenty-one days, and a second
28 attempt (if necessary) within thirty (30) days after the leak is detected. After

1 two unsuccessful attempts to repair a leaking valve through the drill and tap (or
2 equivalent) method, Chevron may place the leaking valve on its “delay of
3 repair” list.

4 ii. For valves, other than control valves and pressure relief valves, that qualify to
5 be on the “delay of repair” list, use the “drill and tap” method (or an
6 equivalent), rather than place a valve on the “delay of repair” list, if it is
7 leaking at a rate of 10,000 ppm or greater unless Chevron can demonstrate that
8 there is a safety or major environmental concern by attempting to repairing the
9 leak in this manner. Chevron shall perform a first and (if necessary) a second
10 “drill and tap” (or equivalent repair method) as soon as practicable but not
11 later than 90 days after such leak was detected. After two unsuccessful
12 attempts to repair a leaking valve through the drill and tap (or equivalent)
13 method, Chevron may place the leaking valve on its “delay of repair” list and
14 need not make additional attempts to repair such leaks unless subsequent
15 monitoring identifies that it is leaking at a rate of 50,000 ppm or greater.

16 c. If a new valve repair method not currently in use by the refining industry is
17 planned to be used by Chevron, Chevron will advise EPA prior to implementing such a method
18 or, if prior notice is not practicable, as soon as practicable after implementation.

19 97. **Recordkeeping and Reporting Requirements for this Paragraph.**

20 a. **As Part of Quarterly Progress Reports - Section IX (Recordkeeping and**
21 **Reporting).** Consistent with the requirements of Section IX (Recordkeeping and Reporting),
22 Chevron shall include the following information in the progress report(s) for the quarter in which
23 the identified activity occurred or was required:

- 24 i. A certification that training has been implemented as required by Paragraph
25 84;
- 26 ii. A certification of the implementation of the “first attempt at repair” program of
27 Paragraph 89;
- 28 iii. A certification of the implementation of QA/QC procedures for review of data

- 1 generated by LDAR technicians as required by Paragraph 92;
- 2 iv. An identification of the individual at the Refinery responsible for LDAR
- 3 performance as required by Paragraph 93;
- 4 v. A certification of the development of a tracking program for new valves and
- 5 pumps added during maintenance and construction as required by Paragraph
- 6 94;
- 7 vi. A certification of the implementation of the calibration drift assessment
- 8 procedures of Paragraph 95.b;
- 9 vii. A certification of the implementation of the “delay of repair” procedures of
- 10 Paragraph 96; and
- 11 viii. A copy of each Refinery’s LDAR program under Paragraph 83.
- 12 b. Quarterly Progress Report for the First Calendar Quarter of Each Year.

13 Chevron shall identify each audit that was conducted under Paragraph 85 in the previous
14 calendar year, including an identification of the auditors, a summary of the audit results and the
15 actions that Chevron took or intends to take to correct identified deficiencies.

16 c. In Each Report due under 40 C.F.R. § 63.654. In each report due under 40
17 C.F.R. § 63.654, Chevron shall include the following information on LDAR monitoring:

- 18 i. a list of the process units monitored during the quarter;
- 19 ii. the number of valves and pumps monitored in each process unit;
- 20 iii. the number of valves and pumps found leaking;
- 21 iv. the number of “difficult to monitor” pieces of equipment monitored;
- 22 v. the projected month of the next monitoring event for that unit;
- 23 vi. a list of all equipment currently on the “delay of repair” list and the date each
- 24 component was placed on the list;
- 25 vii. the number of repairs not completed within five (5) days pursuant to Paragraph
- 26 89;
- 27 viii. the number of repairs not completed within thirty (30) days under Paragraph
- 28 96.b.i.; and

1 ix. the number of repairs not completed within ninety (90) days under Paragraph
2 96.b.ii.

3 **N. Incorporation of Consent Decree Requirements into Federally Enforceable Permits.**

4 98. **Obtaining Permit Limits for Consent Decree Emission Limits That Are**
5 **Effective Upon Entry.**

6 a. Except as set forth below in Paragraph 98.b., by no later than fifteen days after the
7 Date of Entry of this Consent Decree, Chevron shall submit applications to the appropriate Plaintiff-
8 Intervenor to incorporate the emission limits and standards required by the Consent Decree that are
9 effective as of the Date of Entry of the Consent Decree into federally enforceable minor or major new
10 source review permits or other permits (other than Title V permits) which are federally enforceable.
11 Following submission of the permit application, Chevron shall cooperate with the appropriate
12 Plaintiff-Intervenor by promptly submitting to the appropriate Plaintiff-Intervenor all information that
13 the appropriate Plaintiff-Intervenor seeks following its receipt of the permit application. Upon
14 issuance of such permits or in conjunction with such permitting, Chevron shall file any applications
15 necessary to incorporate the requirements of those permits into the Title V permit for the relevant
16 Chevron Refinery.

17 b. For the Richmond FCCU only, Chevron shall not be required to submit a permit
18 application for NOx emission limits for that unit until such time as it is required to submit a permit
19 application for SO2 emission limits for that unit pursuant to Paragraph 99.a., below.

20 99. **Obtaining Permit Limits For Consent Decree Emission Limits That Become**
21 **Effective After Date of Entry.**

22 a. Except as set forth below in Paragraph 99.b., as soon as practicable, but in no event
23 later than the later of ninety (90) days after the effective date or establishment of any emission limits
24 and standards under Section V of this Consent Decree or fifteen (15) days after the Date of Entry of
25 this Consent Decree, Chevron shall submit applications to the appropriate Plaintiff-Intervenor to
26 incorporate those emission limits and standards into federally enforceable minor or major new source
27 review permits or other permits (other than Title V permits) which are federally enforceable.
28 Following submission of the permit application,

1 Chevron shall cooperate with the appropriate Plaintiff-Intervenor by promptly submitting to the
2 appropriate Plaintiff-Intervenor all information that the appropriate Plaintiff-Intervenor seeks
3 following its receipt of the permit application. Upon issuance of such permit or in conjunction
4 with such permitting, Chevron shall file any applications necessary to incorporate the
5 requirements of that permit into the Title V permit of the appropriate Chevron Refinery.

6 b. For the El Segundo FCCU only, Chevron shall not be required to submit a
7 permit application for SO₂ emission limits for that unit until the earlier of (i) sixty (60) days
8 after Chevron's final determination not to discontinue use of the CO Boiler at the El Segundo
9 FCCU, or (ii) ninety (90) days after the establishment of a final SO₂ emission limit pursuant to
10 Paragraph 19.e.

11 100. **Mechanism for Title V Incorporation.** The Parties agree that the
12 incorporation of any emission limits or other standards into the Title V permits for the Chevron
13 Refineries as required by Paragraphs 98 and 99 shall be in accordance with the applicable state
14 or local Title V rules.

15 101. [omitted]

16 102. **Construction Permits.** Chevron agrees to use best efforts to obtain all
17 required, federally enforceable permits for the construction of the pollution control technology
18 and/or the installation of equipment necessary to implement the affirmative relief and
19 environmental projects set forth in this Section V and in Section VIII. To the extent that
20 Chevron must submit permit applications for this construction or installation to the appropriate
21 Plaintiff-Intervenors, Chevron shall cooperate with the appropriate Plaintiff-Intervenor by
22 promptly submitting to the appropriate Plaintiff-Intervenor all information that the appropriate
23 Plaintiff-Intervenor seeks following its receipt of the permit application. This Paragraph 102 is
24 not intended to prevent Chevron from applying to the appropriate Plaintiff-Intervenor for or
25 otherwise using an available pollution control project exemption.

26 **O. RISK MANAGEMENT PLAN FOR EL SEGUNDO REFINERY**

27 102A. Pursuant to 40 C.F.R. § 68.190, Chevron must review, update, and submit the
28 Risk Management Plan ("RMP") for the El Segundo Refinery. The RMP must include an

1 Emergency Response Plan (“ERP”) prepared in accordance with 40 C.F.R. § 68.95. Chevron
2 shall, by February 1, 2004, submit a complete draft of the ERP portion of the RMP for the El
3 Segundo Refinery, to

4 Mary Wesling (SFD-9A)
5 EPCRA/RMP Enforcement Coordinator
6 U.S. Environmental Protection Agency, Region IX
75 Hawthorne St.
San Francisco, CA 94105

7 (“EPCRA/RMP Enforcement Coordinator”). This draft ERP shall be consistent with 40 C.F.R.
8 Part 68 and any amendments thereto approved by February 1, 2004. (See, e.g., Accidental
9 Release Prevention Requirements: Risk Management Program Requirements Under Clean Air
10 Act Section 112(r)(7); Amendments to the Submission Schedule and Data Requirements;
11 Proposed Rule, 68 Fed. Reg. 45123, 45123 - 45132 (July 31, 2003)).

12 102B. In the event that EPA Region IX, at least seventy-five (75) days prior to the
13 due date for submittal of an updated RMP pursuant to 40 C.F.R. Part 68 and any amendments
14 thereto, provides Chevron any written comments on the draft ERP submittal described in the
15 previous paragraph, Chevron shall, within sixty (60) days of receiving such comments, submit to
16 the EPCRA/RMP Enforcement Coordinator a written response to each comment, documenting
17 changes made in response to comments or explaining why Chevron has not made any changes
18 requested by EPA Region IX.

19 102C. On the date that Chevron submits its updated ERP pursuant to 40 C.F.R. §
20 68.190, Chevron shall also submit a copy of the same to the EPCRA/RMP Enforcement
21 Coordinator.

22 23 **VI. EMISSION CREDIT GENERATION**

24 **Summary.** The intent of this Section generally is to prohibit Chevron from using the
25 emissions reductions that will result from the installation and operation of the controls
26 required by this Consent Decree (“CD Emissions Reductions”) for the purpose of
27 emissions netting or emissions offsets, while still allowing Chevron to use a fraction of
28 the CD Emissions Reductions if: (1) the emissions units for which Chevron seeks to use

1 the CD Emissions Reductions are modified or constructed for purposes of compliance
2 with Tier II gasoline or low sulfur diesel requirements; and (2) the emissions from those
3 modified or newly-constructed units are below the levels outlined in Paragraph 105
4 prior to the commencement of operation of the emissions units for which Chevron seeks
5 to use the CD Emissions Reductions.

6 103. **General Prohibition.** Chevron shall not generate or use any NO_x, SO₂, PM,
7 VOC, or CO emissions reductions that result from any projects conducted or controls utilized to
8 comply with this Consent Decree as netting reductions or emissions offsets in any PSD, major
9 non-attainment and/or minor New Source Review (“NSR”) permit or permit proceeding.

10 104. **Conditions Precedent to Utilizing Exception to General Prohibition.**
11 Utilization of the exception set forth in Paragraph 105 to the general prohibition against the
12 generation or utilization of CD Emissions Reductions set forth in Paragraph 103 is subject to the
13 following conditions:

- 14 a. Under no circumstances shall Chevron use CD Emissions Reductions for
15 netting and/or offsets prior to the time that actual CD Emissions Reductions have occurred;
- 16 b. CD Emissions Reductions may be used only at the Refinery that generated
17 them;
- 18 c. The CD Emissions Reductions provisions of this Consent Decree are for
19 purposes of this Consent Decree only and neither Chevron, nor any other entity may use CD
20 Emissions Reductions for any purpose, including in any subsequent permitting or enforcement
21 proceeding, except as provided herein; and
- 22 d. Chevron still shall be subject to all federal, state, and local regulations
23 applicable to the PSD, major non-attainment and/or minor NSR permitting process.

24 105. **Exception to General Prohibition.** Notwithstanding the general prohibition
25 set forth in Paragraph 103, Chevron may use 80 tons per year of NO_x and 15 tons per year of
26 PM, and 55 tons per year of SO₂ from the CD Emissions Reductions as credits or offsets in any
27 PSD, major non-attainment and/or minor NSR permit or permit proceeding occurring after the
28 Date of Lodging of the Consent Decree with respect to any of its Refineries other than the

1 Richmond Refinery, provided that the new or modified emissions units at which credits are being
2 used: (1) is being constructed or modified for purposes of compliance with Tier 2 gasoline or
3 low sulfur diesel requirements; and (2) has a federally enforceable, non-Title V Permit that
4 reflects the following requirements that are applicable to the pollutants for which credits are
5 being used:

6 a. For heaters and boilers, a limit of 0.020 lbs NO_x per million BTU or less on a
7 3-hour rolling average basis. Notwithstanding the foregoing, Chevron may utilize emissions
8 reductions generated at the Salt Lake City Refinery as offsets or credits for the planned
9 hydrotreater furnace and the hydrogen plant (whether constructed and operated by Chevron or a
10 third party), provided such burners are designed to achieve an emission rate of 0.020 lbs NO_x
11 per million BTU (even if the burners do not achieve that emission rate in practice and a less
12 stringent emission limit is therefore warranted);

13 b. For heaters and boilers, a limit of 0.10 grains of hydrogen sulfide per dry
14 standard cubic foot of fuel gas or 20 ppmvd SO₂ corrected to 0% O₂ both on a 3-hour rolling
15 average;

16 c. For heaters and boilers, no liquid or solid fuel firing authorization

17 d. For FCCUs, a limit of 20 ppmvd NO_x corrected to 0% O₂ or less on a 365-day
18 rolling average basis;

19 e. For FCCUs, a limit of 25 ppmvd SO₂ corrected to 0% O₂ or less on a 365-day
20 rolling average basis;

21 f. For FCCUs, a limit of 0.5 pounds of PM per 1000 pounds of coke burned on a
22 3-hour average basis; and

23 g. For SRPs, NSPS Subpart J emission limits.

24 106. **Outside the Scope of the General Prohibition.** Nothing in this Section VI is
25 intended to prohibit Chevron from seeking to: (1) utilize or generate emissions credits from
26 refinery units that are covered by this Consent Decree to the extent that the proposed credits or
27 reductions represent the difference between the emissions limitations set forth in this Consent
28 Decree for these refinery units and the more stringent emissions limitations that Chevron may

1 elect to accept for these refinery units in a permitting process; or (2) utilize or generate emissions
2 credits or reductions on refinery units that are not subject to an emission limitation pursuant to
3 this Consent Decree; or (3) utilize or generate emissions credits or reductions from heaters and
4 boilers on which Qualifying Controls, as defined in Paragraph 32, have been installed, provided
5 that such reductions are not included in Chevron's demonstration of compliance with the
6 requirements of Paragraphs 33 and 36 of this Consent Decree.

7 8 **VII. MODIFICATIONS TO IMPLEMENTATION SCHEDULES**

9 107. **Securing Permits.** For any work under Sections V or VIII of this Consent
10 Decree that requires a federal, state and/or local permit or approval, Chevron shall be responsible
11 for submitting in a timely fashion applications for federal, state and local permits and approvals
12 for work and activities required so that permit or approval decisions can be made in a timely
13 fashion. Chevron shall use its best efforts to: (i) submit permit applications (i.e., applications
14 for permits to construct, operate, or their equivalent) that comply with all applicable
15 requirements; and (ii) secure permits after filing the applications, including timely provision of
16 additional information, if requested. If it appears that the failure of a governmental entity to act
17 upon a timely-submitted permit application may delay Chevron's performance of work
18 according to an applicable implementation schedule, Chevron shall notify EPA and the
19 appropriate Plaintiff-Intervenor of any such delays as soon as Chevron reasonably concludes that
20 the delay could affect its ability to comply with the implementation schedule set forth in this
21 Consent Decree. Chevron shall propose for approval by EPA a modification to the applicable
22 schedule of implementation. EPA, in consultation with the appropriate Plaintiff-Intervenor, shall
23 not unreasonably withhold its consent to requests for modifications of schedules of
24 implementation if the requirements of this Paragraph are met. All modifications to any dates
25 initially set forth in this Decree or in any approved schedule of implementation shall be signed in
26 writing by EPA and Chevron and shall be subject to the requirements of Paragraph 234
27 (Modification). Stipulated penalties shall not accrue nor be due and owing during any period
28 between a scheduled

1 implementation date and an EPA agreed-upon modification to such date; provided however, that
2 EPA and the appropriate Plaintiff-Intervenor shall retain the right to seek stipulated penalties if
3 EPA does not agree to a modification to a date or dates. The failure of a governmental entity to
4 act upon a timely-submitted permit application shall not constitute a force majeure event
5 triggering the requirements of Section XIV; this Paragraph shall apply.

6 108. **Commercial Unavailability of Control Equipment and/or Additives.**

7 Chevron shall be solely responsible for compliance with any deadline or the performance of any
8 work described in Sections V and VIII of this Consent Decree that requires the acquisition and
9 installation of control equipment, including NO_x-reducing and SO₂-reducing catalyst additives.
10 If it appears that the commercial unavailability of any control equipment may delay Chevron's
11 performance of work according to an applicable implementation schedule, Chevron shall notify
12 EPA and the appropriate Plaintiff-Intervenor of any such delays as soon as Chevron reasonably
13 concludes that the delay could affect its/their ability to comply with the implementation schedule
14 set forth in this Consent Decree.

15 Chevron shall propose for approval by EPA, after consultation with the appropriate
16 Plaintiff-Intervenor, a modification to the applicable schedule of implementation. Prior to the
17 notice required by this Paragraph, Chevron must have contacted a reasonable number of vendors
18 of such equipment or additive and obtained a written representation (or equivalent
19 communication to EPA) from the vendor that the equipment or additive is commercially
20 unavailable. In the notice, Chevron shall reference this Paragraph 108 of this Consent Decree,
21 identify the milestone date(s) it/they contend it/they will not be able to meet, provide the EPA
22 and the appropriate Plaintiff-Intervenor with written correspondence to the vendor identifying
23 efforts made to secure the control equipment, and describe the specific efforts Chevron has taken
24 and will continue to take to find such equipment or additive. Chevron may propose a modified
25 schedule or modification of other requirements of this Consent Decree to address such
26 commercial unavailability. Section XV ("Retention of Jurisdiction/Dispute Resolution") shall
27 govern the resolution of any claim of commercial unavailability. EPA, in consultation with the
28 appropriate Plaintiff-Intervenor, shall not unreasonably withhold its consent to requests for

1 modifications of schedules of implementation if the requirements of this Paragraph are met. All
2 modifications to any dates initially set forth in this Consent Decree or in any approved schedule
3 of implementation shall be signed in writing by EPA and Chevron and shall be subject to the
4 requirements of Paragraph 234 (Modification). Stipulated penalties shall not accrue nor be due
5 and owing during any period between an originally-scheduled implementation date and an EPA
6 agreed-upon modification to such date; provided however, that EPA and the appropriate
7 Plaintiff-Intervenor shall retain the right to seek stipulated penalties if EPA does not agree to a
8 modification to a date or dates. The failure by Chevron to secure control equipment shall not
9 constitute a force majeure event triggering the requirements of Section XIV; this Paragraph shall
10 apply.

11 **VIII. SUPPLEMENTAL ENVIRONMENTAL PROJECTS**

12
13 109. In accordance with the requirements set forth in this Section VIII, and with the
14 schedules set forth in this Section VIII and/or the applicable Appendices, Chevron shall spend no
15 less than \$4,550,000 to implement the Supplemental Environmental Projects (“SEPs”) described
16 in Paragraphs 109A and 110 below. Chevron may carry out its responsibilities for the SEPs
17 identified below directly or through contractors selected by Chevron.

18 109A. **Diesel Emissions Reduction SEPs:** Chevron shall spend a total of no less
19 than \$1,500,000 to implement SEPs designed to reduce diesel emissions from in-service fleet
20 vehicles, including enhancement of the availability of ultra low-sulfur diesel fuel (“ULSD”) for
21 such fleets, in accordance with the requirements of this Paragraph 109A. The above amount
22 shall be allocated as follows:

23 a. **Federal Diesel Emissions Reduction SEPs:** Chevron shall spend \$600,000 for
24 Federal diesel emissions reduction SEPs in accordance with the criteria, terms, and procedures
25 specified in Appendix L.

26 b. **State Diesel Emissions Reduction SEPs:**

27 i. Chevron shall spend \$200,000 on State diesel emissions reduction SEPs to be
28 implemented in the general area where Chevron’s Salt Lake City Refinery is

- 1 located. These projects are to be determined jointly by Chevron and the State
2 of Utah, in consultation with EPA.
- 3 ii. Chevron shall spend \$200,000 on State diesel emissions reduction SEPs to be
4 implemented in the general area where Chevron’s Richmond Refinery is
5 located. These projects are to be determined jointly by Chevron and the
6 BAAMQD, in consultation with EPA.
- 7 iii. Chevron shall spend \$500,000 on State diesel emissions reduction SEPs to be
8 implemented in the general area where Chevron’s Hawaii Refinery is located.
9 These projects are to be determined jointly by Chevron and the State of
10 Hawaii, in consultation with EPA.
- 11 iv. Within one year of the Date of Entry of the Consent Decree, Chevron shall
12 submit a Statement of Work (“SOW”) for each State diesel emissions
13 reduction SEP that it proposes to perform, including a schedule for
14 development and implementation, and an estimated cost. Each SOW shall be
15 subject to approval by the appropriate Plaintiff-Intervenor. Chevron shall
16 complete implementation of the approved SOWs by no later than three years
17 from the Date of Entry.
- 18 v. If Chevron demonstrates to the appropriate Plaintiff-Intervenor and to EPA
19 prior to or upon submission of its SOW(s) that it cannot identify appropriate
20 State diesel emissions reduction SEPs in the amount required by this Paragraph
21 109A.b., Chevron may seek approval from the appropriate Plaintiff-Intervenor,
22 in consultation with EPA, to submit one or more SOWs for alternative SEPs
23 that will achieve equivalent or greater environmental benefits in the area
24 around the relevant Refinery. Each alternative SOW shall be subject to
25 approval by the appropriate Plaintiff-Intervenor, and Chevron shall complete
26 implementation of the approved alternative SOW(s) by no later than three
27 years from the Date of Entry.
- 28

1 110. **Facility- and Community-Specific SEPs**

2 a. Chevron shall also perform the four additional facility- or community-specific
3 SEPs described in Appendix M to this Consent Decree, in accordance with the individual project
4 schedules and descriptions set forth in Appendix M, and at a cost of no less than \$3,050,000.

5 b. If at any time prior to the completion of the projects identified in Paragraph
6 110/Appendix M, Chevron becomes required to perform any of those projects pursuant to
7 federal, state, or local statute, regulation, or permit, then Chevron shall not receive SEP credit for
8 the amounts expended on that project. Within 120 days of the event that invalidates a specific
9 SEP, Chevron shall propose for EPA approval an additional SEP of equal or greater value to be
10 performed at the same facility or in the same community as the invalidated SEP.

11 111. Chevron is responsible for the satisfactory completion of the SEPs required
12 under this Consent Decree in accordance with this Section VIII, Appendices L and M, as
13 applicable, and any SOWs developed thereunder. Upon completion of a specific SEP, Chevron
14 shall submit to EPA and the appropriate Plaintiff-Intervenor a cost report certified as accurate
15 under penalty of perjury by a responsible corporate official. If Chevron does not expend the
16 entire projected cost of the applicable SEP as set forth in this Section VIII, the relevant
17 Appendix, or a subsequent Statement of Work, Chevron shall pay a stipulated penalty equal to
18 the difference between the amount expended as demonstrated in the certified cost report(s) and
19 the projected cost. The stipulated penalty shall be paid as provided in Paragraph 177 (Payment
20 of Stipulated Penalties) of the Consent Decree. As an alternative to payment of the above
21 penalty, Chevron may request approval from EPA and the appropriate Plaintiff-Intervenor to use
22 unexpended SEP monies to supplement one or more diesel reduction SEPs that have been
23 previously approved pursuant to this Consent Decree.

24 112. By signing this Consent Decree, Chevron certifies that it is not required, and
25 has no liability under any federal, state or local law or regulation or pursuant to any agreements
26 or orders of any court, to perform or develop any of the projects identified in Paragraph 109A or
27 110. Chevron further certifies that it has not applied for or received, and will not in the future
28 apply for or receive: (1) credit as a Supplemental Environmental Project or other penalty offset

1 in any other enforcement action for the projects set forth in Paragraph 109A or 110; (2) credit for
2 any emissions reductions resulting from the projects set forth in Paragraph 109A or 110 in any
3 federal, state or local emissions trading or early reduction program; or (3) a deduction from any
4 federal, state, or local tax based on its participation in, performance of, or incurrence of costs
5 related to the projects set forth in Paragraph 109A or 110.

6 113. Chevron shall include in each Report required by Paragraph 115 a progress
7 report for each SEP being performed under this Section VIII of this Consent Decree. In addition,
8 the Report required by Paragraph 115 of this Consent Decree for the period in which each
9 project identified in Paragraph 109 is completed shall contain the following information with
10 respect to such projects:

- 11 a. A detailed description of each project as implemented;
- 12 b. A brief description of any significant operating problems encountered,
13 including
14 any that had an impact on the environment, and the solutions for each problem;
- 15 c. Certification that each project has been fully implemented pursuant to the
16 provisions of this Consent Decree; and
- 17 d. A description of the environmental and public health benefits resulting from
18 implementation of each project (including quantification of the benefits and pollutant reductions,
19 if feasible).

20 114. Chevron agrees that in any public statements regarding these SEPs, Chevron
21 must clearly indicate that these projects are being undertaken as part of the settlement of an
22 enforcement action for alleged violations of the Clean Air Act and corollary state statutes.

23
24 **IX. REPORTING AND RECORD KEEPING**

25 115. Beginning with the first full calendar quarter after the Date of Entry of the
26 Consent Decree, Chevron shall submit to EPA and the appropriate Plaintiff-Intervenors within
27 thirty (30) days after the end of each calendar quarter through 2004, and semi-annually thereafter
28 until termination of this Consent Decree a progress report for each of the Chevron Refineries.

1 Each report shall contain, for the relevant Chevron Refinery, the following: progress report on
2 the implementation of the requirements of Section V (Affirmative Relief/Environmental
3 Projects) at the relevant Refinery; a summary of the emissions data for the relevant Refinery that
4 is specifically required by the reporting requirements of Section V of this Consent Decree for the
5 period covered by the report; a description of any problems anticipated with respect to meeting
6 the requirements of Section V of this Consent Decree at the relevant Refinery; a description of
7 the status of all SEPs being conducted at the relevant Refinery in accordance with Paragraph 109
8 of the Consent Decree; and any such additional matters as Chevron believes should be brought to
9 the attention of EPA and the appropriate Plaintiff-Intervenor. The report shall be certified by
10 either the person responsible for environmental management at the appropriate Chevron Refinery
11 or by a person responsible for overseeing implementation of this Decree across Chevron as
12 follows:

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

18 **X. CIVIL PENALTY**

19 116. In satisfaction of the civil claims asserted by the United States and the
20 Plaintiff-Intervenors in the complaint filed in this matter, within thirty (30) days of the Date of
21 Entry of the Consent Decree, Chevron shall pay a civil penalty of \$3.5 million as follows: (1)
22 \$2.3 million to the United States (including \$800,000 to resolve the United States' claims as set
23 forth in Paragraph 216.b); (2) \$400,000 to Plaintiff-Intervenor BAAQMD; (3) \$500,000 to
24 Plaintiff-Intervenor the Mississippi Commission on Environmental Quality; and (4) \$300,000 to
25 Plaintiff-Intervenor the State of Utah.

- 26 a. Payment of monies to the United States shall be made as follows:
- 27 i. Payment of \$1,630,000 shall be made to the United States by Electronic Funds
28 Transfer ("EFT") to the United States Department of Justice, in accordance

1 with current EFT procedures, referencing USAO File Number 2003v00868,
2 DOJ Case Number 90-5-2-1-07629, and the civil action case name and case
3 number of this action in the Northern District of California. The costs of such
4 EFT shall be the responsibility of Chevron. Payment shall be made in
5 accordance with instructions provided to Chevron by the Financial Litigation
6 Unit of the U.S. Attorney's Office for the Northern District of California. Any
7 funds received after 11:00 a.m. (EST) shall be credited on the next business
8 day. Chevron shall provide notice of payment, referencing USAO File
9 Number 2003v00868, DOJ Case Number 90-5-2-1-07629, and the civil action
10 case name and case number to the Department of Justice and to EPA, as
11 provided in Paragraph 231 (Notice).

12 ii. A separate payment of \$670,000 shall be made by Chevron for deposit in the
13 EPA Hazardous Substance Superfund. Payment of this amount shall be made
14 by Electronic Funds Transfer ("EFT") to the United States Department of
15 Justice, in accordance with current EFT procedures, referencing USAO File
16 Number 2003v00868, DOJ Case Number 90-5-2-1-07629, and the civil action
17 case name and case number of this action in the Northern District of
18 California. The costs of such EFT shall be the responsibility of Chevron.
19 Payment shall be made in accordance with instructions provided to Chevron by
20 the Financial Litigation Unit of the U.S. Attorney's Office for the Northern
21 District of California. Any funds received after 11:00 a.m. (EST) shall be
22 credited on the next business day. Chevron shall provide notice of payment,
23 referencing USAO File Number 2003v00868, DOJ Case Number 90-5-2-1-
24 07629, and the civil action case name and case number to the Department of
25 Justice as provided in Paragraph 231 (Notice), and to the EPA EPCRA/RMP
26 Enforcement Coordinator identified in Paragraph 102A. of this Consent
27 Decree.

28 b. Payment of the civil penalty owed to BAAQMD under this Paragraph shall be

1 made by certified or corporate check made payable to the Bay Area Air Quality Management
2 District and sent to the following address:

3 Attn: Brian C. Bunger
4 Shirley R. Edwards
5 Office of District Counsel
6 Bay Area Air Quality Management District
7 939 Ellis Street
8 San Francisco, CA 94109

9 c. Payment of the civil penalty owed to the State of Mississippi under this
10 Paragraph shall be made by certified or corporate check made payable to the Mississippi
11 Department of Environmental Quality and sent to the following address:

12 Mississippi Department of Environmental Quality
13 Office of Pollution Control
14 P.O. Box 10385
15 Jackson, MS 39289

16 d. Payment of the civil penalty owed to the State of Utah under this Paragraph
17 shall be made by certified or corporate check made payable to the Utah Division of Air Quality
18 and sent to the following address:

19 Utah Division of Air Quality
20 Office of the Executive Director
21 168 North 1950 West
22 Salt Lake City, UT 84114-4810

23 117. The civil penalty set forth herein is a penalty within the meaning of Section
24 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and, therefore, Chevron shall not treat
25 these penalty payments as tax deductible for purposes of federal, state, or local law.

26 118. Upon the Date of Entry of the Consent Decree, the Consent Decree shall
27 constitute an enforceable judgment for purposes of post-judgment collection in accordance with
28 Federal Rule of Civil Procedure 69, the Federal Debt Collection Procedure Act, 28 U.S.C. §§
3001-3308, and other applicable federal authority. The United States and the Plaintiff-
Intervenors shall be deemed judgment creditors for purposes of collecting any unpaid amounts of
the civil and stipulated penalties and interest.

XI. STIPULATED PENALTIES

Chevron shall pay stipulated penalties to the United States and to the appropriate Plaintiff-Intervenor for each failure by Chevron to comply with the terms of this Consent Decree as provided herein. Stipulated penalties shall be calculated in the amounts specified in Paragraphs 119 through 176. Stipulated penalties under Paragraphs 120, 124, 127 and 129 shall not start to accrue until there is noncompliance with the concentration-based, rolling average emission limits identified in those Paragraphs for five percent (5%) or more of the applicable unit’s operating time during any calendar quarter. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the economic benefit of delayed compliance is available, the decision of which alternative to seek shall rest exclusively within the discretion of the United States or the appropriate Plaintiff-Intervenor.

A. Non-Compliance with Requirements for NOx Emission Reductions from FCCUs.

119. For failure to comply with any requirements of the Low NOx Combustion Promoter and NOx-reducing catalyst additive protocol, as set forth in Paragraph 12 and Appendix A, including submission of the optimization study results and the NOx Additive Demonstration Reports, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$1,000
31 st through 60 th day after deadline	\$1,500
Beyond 60 th day after deadline	\$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

120. For failure to meet any emissions limit for NOx set forth in Paragraph 11, or any emissions limit proposed by Chevron or established by EPA (final or interim) for NOx pursuant to Paragraph 13, per day, per unit: \$750 for each calendar day in a calendar quarter on which the short-term rolling average exceeds the applicable limit; and \$2,500 for each calendar

1 day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable
 2 limit.

3 121. For failure to prepare and/or submit written deliverables required by
 4 Paragraphs 12-15, per day (except where deliverables are specifically identified in Paragraph
 5 119, this Paragraph 121 shall apply in lieu of Paragraph 119 where both provisions are
 6 potentially applicable):

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$1000

11 122. For failure to install, certify, calibrate, maintain, and/or operate a NOx CEMS
 12 as required by Paragraph 15, per unit per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1,000
Beyond 60 th day after deadline	\$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

19 **B. Non-Compliance with Requirements for SO₂ Emission Reductions from**
 20 **FCCUs.**

21 123. For failure to comply with any requirement of the SO₂-reducing catalyst
 22 additives protocol, as set forth in Paragraph 17 and Appendix A, including submission of the
 23 optimization study results and the SO₂ Additive Demonstration Reports, per unit, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$1,000
31 st through 60 th day after deadline	\$1,500
Beyond 60 th day after deadline	\$2,000, or an amount equal to 1.2 times the economic benefit of the delayed

1 compliance whichever is greater
 2 123A. For failure to comply with any requirements of the protocol for the El Segundo
 3 FCCU, as set forth in Paragraph 19, including submission of a Demonstration Assessment
 4 Report, per day:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$1,000
31 st through 60 th day after deadline	\$1,500
Beyond 60 th day after deadline	\$2,000, or an amount equal to 1.2 times the economic benefit of the delayed compliance whichever is greater

11 124. For each failure to meet SO₂ emission limits (final or interim) set forth in
 12 Paragraph 16, or SO₂ emissions limits proposed by Chevron or established by EPA (final or
 13 interim) pursuant to Paragraphs 18 or 19, per unit, per day: \$750 for each calendar day in a
 14 calendar quarter on which the specified 7-day rolling average exceeds the applicable limit;
 15 \$2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling
 16 average exceeds the applicable limit.

17 125. For failure to prepare and/or submit written deliverables required by
 18 Paragraphs 17-20, per day (except where deliverables are specifically identified in Paragraph
 19 123 or 123A, this Paragraph 125 shall apply in lieu of Paragraphs 123 or 123A where both
 20 provisions are potentially applicable):

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$200
31 st through 60 th day after deadline	\$500
Beyond 60 th day after deadline	\$1,000

25 126. For failure to install, certify, calibrate, maintain, and/or operate a SO₂ CEMS
 26 as required by Paragraph 20, per unit, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$500

1	31 st through 60 th day after deadline	\$1,000
2	Beyond 60 th day after deadline	\$2,000 or an amount equal to 1.2 times the
3		economic benefit of delayed compliance,
4		whichever is greater.

5 126A. For failure to comply with the plan required by Paragraph 21 for operating the
6 FCCUs in the event of a Hydrotreater Outage, per unit, per day:

	<u>Period of Delay</u>	<u>Penalty per day</u>
7		
8	1 st through 30 th day after deadline	\$250
9	31 st through 60 th day after deadline	\$1,000
10	Beyond 60 th day after deadline	\$2,000 or an amount equal to 1.2 times the
11		economic benefit of delayed compliance,
12		whichever is greater.

13 **C. Non-Compliance with Requirements for PM Emissions from FCCUs.**

14 127. For each failure to meet applicable PM emission limits for the Chevron FCCUs
15 as set forth in Paragraphs 22 or 23, or as later accepted by Chevron pursuant to Paragraph 202,
16 per day, per unit: \$3000 for each calendar day in a calendar quarter on which the Refinery
17 exceeds the emission limit.

18 128. For failure to install, certify, calibrate, maintain, and/or operate a COMS to
19 monitor Opacity as required by Paragraph 25, per unit, per day:

	<u>Period of Delay</u>	<u>Penalty per day</u>
20		
21	1 st through 30 th day after deadline	\$500
22	31 st through 60 th day after deadline	\$1,000
23	Beyond 60 th day after deadline	\$2,000, or, an amount equal to 1.2 times
24		the economic benefit of delayed
25		compliance, whichever is greater.

26 **D. Non-Compliance with Requirements for CO Emissions from FCCUs.**

27 129. For each failure to meet the applicable CO emission limits for the Chevron
28 FCCUs as set forth in Paragraphs 26 or 27, or as later accepted by Chevron pursuant to

Paragraph 203: \$750 for each calendar day in a calendar quarter on which the specified 1-hour rolling average exceeds the applicable limit; and \$2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

130. For failure to install, certify, calibrate, maintain, and/or operate a CO CEMS as required by Paragraph 29, per unit, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$500
31 st through 60 th day after deadline	\$1,000
Beyond 60 th day after deadline	\$2,000, or, an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

E. Non-Compliance with Requirements for NOx Emission Reductions from Heaters and Boilers.

131. For failure to install Qualifying Controls on heaters and boilers and/or to submit permit applications sufficient to comply with the requirements of Paragraphs 33 and 36, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$2,500
31 st through 60 th day after deadline	\$6,000
Beyond 60 th day after deadline	\$10,000, or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

131A. For failure to install Qualifying Controls on heaters and boilers as required by Paragraphs 37 and 37A. by the dates set forth in those Paragraphs, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
1 st through 30 th day after deadline	\$2,500
31 st through 60 th day after deadline	\$6,000

1	<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
2	1 st through 30th day	\$2,500
3	Beyond 31 st day	\$5,000 or an amount equal to 1.2 times the
4		economic benefit of delayed compliance,
5		whichever is greater.

6 136. For burning Fuel Oil in a manner inconsistent with the requirements of
7 Paragraph 44, per unit, per day:

8	<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
9	1 st through 30 th day	\$1,750
10	Beyond 31 st day	\$5,000 or an amount equal to 1.2 times the
11		economic benefit of delayed compliance,
12		whichever is greater.

13 **G. Non-Compliance with Requirements for NSPS Applicability to Sulfur**
14 **Recovery Plants.**

15 137. For failure to route all sulfur pit emissions in accordance with the requirements
16 of Paragraph 46, per unit, per day:

17	<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
18	1 st through 30 th day	\$1,000
19	31 st through 60 th day	\$1,750
20	Beyond 60 th day	\$4,000 or an amount equal to 1.2 times the
21		economic benefit of delayed compliance whichever
22		is greater.

23 138. For failure to comply with the NSPS Subpart J emission limits at the
24 Richmond, El Segundo or Pascagoula 4, 5, and 6 SRPs, per unit, per day in a calendar quarter:

25	<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
26	1 st through 30th day	\$1,000
27	31 st through 60 th day	\$2,000

28

1 Over 60 days \$3,000 or an amount equal to 1.2 times the
 2 economic benefit of delayed compliance, whichever
 3 is greater.

4 138A. For failure to comply with the monitoring requirements of Paragraphs 47.b.,
 5 48.a., and 49.b.ii., per unit, per day:

<u>Period of Delay</u>	<u>Penalty per day</u>
6 1 st through 30 th day after deadline	\$500
7 31 st through 60 th day after deadline	\$1,500
8 Beyond 60 th day after deadline	\$2,000

9
 10 138B. For failure to comply with the emissions limits for the Salt Lake City SRP as
 11 set forth in Paragraph 48.

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
12 1 st through 30 th day	\$1,000
13 31 st through 60 th day	\$2,000
14 Over 60 days	\$3,000

15
 16 138C. For failure to comply with the requirements of Paragraph 48.f. in the event that
 17 the sulfur input to the Salt Lake City SRP exceeds 20 long tons in any calendar day, including
 18 installation of a Tail Gas Unit, per day:

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
19 1 st through 30 th day	\$1,000
20 31 st through 60 th day	\$2,000
21 Over 60 days	\$3,000 or an amount equal to 1.2 times the
22	economic benefit of delayed compliance, whichever
23	is greater.

24
 25 138D. For failure to comply with emissions limits developed pursuant to Paragraph
 26 49.b.v. with respect to the Pascagoula SRU 2/3.

<u>Period of Non-Compliance</u>	<u>Penalty per day</u>
27 1 st through 30 th day	\$1,000

1 forth in Paragraph 54:

<u>Period of Delay</u>	<u>Penalty per day</u>
2 1 st through 30 th day after deadline	\$500
3 31 st through 60 th day	\$1,500
4 Over 60 days	\$2,000

5
6 142. For failure to submit the NSPS J Subpart J compliance report required by
7 Paragraph 54.a.i:

<u>Period of Delay</u>	<u>Penalty per day</u>
8 1 st through 30 th day after deadline	\$500
9 31 st through 60 th day	\$1,500
10 Over 60 days	\$2,000

11
12 **I. Non-Compliance with Requirements for Control of Acid Gas Flaring**
13 **Incidents and Tail Gas Incidents.**

14 143. For AG Flaring Incidents and/or Tail Gas Incidents for which Section
15 V.J makes Chevron liable for stipulated penalties:
16 under Section V.J.

Tons Emitted in Acid Gas Flaring Incident or Tail Gas Incident	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is 3 hours or less; Length of Time of the Tail Gas Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 3 hours but less than or equal to 24 hours; Length of Time of the Tail Gas Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time of Flaring within the Acid Gas Flaring Incident is greater than 24 hours; Length of Time of the Tail Gas Incident is greater than 24 hours
17 18 19 20 21 22 23 24 25 26 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 Acid Gas Flaring Incident or Tail Gas Incident lasts

For purposes of calculating stipulated penalties pursuant to this Paragraph 143, only one cell within the matrix shall apply. Thus, for example, for a Flaring Incident in which the 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 \$1,200)]. For purposes of determining which column in the table set forth in this Paragraph applies under circumstances in which Flaring occurs intermittently during a Flaring Incident, the Flaring shall be deemed to commence at the time that the Flaring that triggers the initiation of a Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of Flaring within the Flaring Incident. Thus, for example, for Flaring within a Flaring Incident that (i) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (ii) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (iii) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further Flaring occurs within the Flaring Incident, the Flaring within the Flaring Incident shall be deemed to last 12.5 hours -- not 1.5 hours -- and the column for Flaring of “greater than 3 hours but less than or equal to 24 hours” shall apply.

144. For failure to timely submit any report required by Sections V.J. or V.K, or for submitting any report that does not substantially conform to its requirements

<u>Period of Delay</u>	<u>Penalty per day</u>
Days 1-30	\$750
Days 31-60	\$1,500
Over 60 days	\$3,000

1 145. For those corrective action(s) with respect to Acid Gas Flaring, Tail Gas
 2 Incidents, or Hydrocarbon Flaring which Chevron: (i) agrees to undertake following receipt of an
 3 objection by EPA pursuant to Paragraph 58.c; or (ii) is required to undertake following dispute
 4 resolution, then, from the date of EPA’s receipt of Chevron’s report under Paragraph 57 of this
 5 Consent Decree until the date that either: (i) a final agreement is reached between EPA and
 6 Chevron regarding the corrective action; or (ii) a court order regarding the corrective action is
 7 entered, Chevron shall be liable for stipulated penalties as follows:

8	a.	<u>Period of Delay</u>	<u>Penalty per day</u>
9		Days 1-120	\$50
10		Days 121-180	\$100
11		Days 181 - 365	\$300
12		Over 365 Days	\$3,000
13			or

14 b. 1.2 times the economic benefit resulting from Chevron’s failure to implement the
 15 corrective action(s).

16 146. For failure to complete any corrective action with respect to Acid Gas Flaring,
 17 Tail Gas Incidents, or Hydrocarbon Flaring under Paragraph 58 of this Decree in accordance
 18 with the schedule for such corrective action agreed to by Chevron or imposed on Chevron
 19 pursuant to the dispute resolution provisions of this Decree (with any such extensions thereto as
 20 to which EPA and Chevron may agree in writing):

<u>Period of Delay</u>	<u>Penalty per day</u>
Days 1-30	\$1,000
Days 31-60	\$2,000
Over 60	\$5,000

25 **J. Non-Compliance with Requirements for Control of Hydrocarbon Flaring**
 26 **Incidents.**

27 147. For each failure to perform a root cause analysis or submit a written report or
 28 perform corrective actions as required by Paragraph 67 for a Hydrocarbon Flaring Incident:

1	<u>Period of Delay or Non-Compliance</u>	<u>Penalty per day per Incident</u>
2	1st through 30th day	\$500
3	31st through 60th day	\$1,500
4	Beyond 60th day	\$3,000

5 **K. Non-Compliance with Requirements for Benzene Waste NESHAP**

6 **Program Enhancements.**

7 148. For failure to complete the BWON Compliance Review and Verification
 8 Reports as required by Paragraph 70:
 9 \$7,500 per month, per refinery.

10 149. For failure to submit a plan that provides for actions necessary to correct non-
 11 compliance as required by Paragraph 71.b., or for failure to implement the actions necessary to
 12 correct non-compliance and to certify compliance as required by Paragraph 71.e., per refinery:

13	<u>Period of Delay</u>	<u>Penalty per day</u>
14	1 st through 30 th day after deadline	\$1,250
15	31 st through 60 th day after deadline	\$3,000
16	Beyond 60 th day	\$5,000, or an amount equal to 1.2 times the
17		economic benefit of delayed compliance,
18		whichever is greater

19 149A. For failure to submit a compliance plan for the Salt Lake City Refinery as
 20 required by Paragraph 71.c., or for failure to implement the compliance plan and/or to certify
 21 compliance as required by Paragraph 71.c. and e.

22	<u>Period of Delay</u>	<u>Penalty per day</u>
23	1 st through 30 th day after deadline	\$1,250
24	31 st through 60 th day after deadline	\$3,000
25	Beyond 60 th day	\$5,000, or an amount equal to 1.2 times the
26		economic benefit of delayed compliance,
27		whichever is greater

28 149B. For failure to comply with the requirements set forth in Paragraph 72 for use,

1 monitoring and replacement of carbon canisters, \$1,000 per incident of non-compliance, per day.

2 150. For failure to submit or maintain any records or materials required by
3 Paragraph 72 of this Consent Decree, \$2,000 per record or submission.

4 150A. For failure to establish an annual review program to identify new benzene
5 waste streams as required by Paragraph 73, \$2,500 per month, per refinery.

6 150B. For failure to perform laboratory audits as required by Paragraph 74, \$5,000
7 per month, per audit.

8 151. For failure to implement the training requirements as set forth in Paragraph 76,
9 \$10,000 per quarter, per refinery.

10 152. For failure to install controls on waste management units handling organic
11 wastes as required by Paragraph 77.b., \$10,000 per month per waste management unit.

12 153. For failure to submit any plans or other deliverables required by Paragraphs 78
13 or 79, \$10,000 per month, per refinery.

14 154. For failure to conduct sampling in accordance with the sampling plans required
15 by Paragraphs 78-79 - \$5,000 per week, per stream, or \$30,000 per quarter, per stream,
16 whichever is greater, but not to exceed \$150,000 per quarter, per refinery.

17 155. For failure to conduct monthly visual inspections of all Subpart FF water traps
18 as required by Paragraph 80.b: \$500 per drain not inspected.

19 156. For failure to identify/mark segregated stormwater drains as required in
20 Paragraph 80.c: \$1,000 per week, per drain.

21 157. For failure to monitor Subpart FF conservation vents as required by Paragraph
22 80.d: \$500 per vent not monitored.

23 157A. For failure to conduct monitoring of oil-water separators as required by
24 Paragraph 80.e: \$1,000 per month, per unit.

25 158. For failure to submit the written deliverables required by Paragraph 82 -
26 \$1,000 per week, per deliverable.

27 159. If it is determined through federal, state, or local investigation that any
28 Chevron Refinery has failed to include all benzene waste streams in its TAB calculation

1 submitted pursuant to Paragraphs 70, Chevron shall pay the following, per waste stream:

<u>Waste Stream</u>	<u>Penalty</u>
3 for waste streams < 0.03 Mg/yr	\$250
4 for waste streams between 0.03 and 0.1 Mg/yr	\$1,000
5 for waste streams between 0.1 and 0.5 Mg/yr	\$5,000
6 for waste streams > 0.5 Mg/yr	\$10,000

7 **L. Non-Compliance with Requirements for Leak Detection and Repair**

8 **Program Enhancements.**

9 160. For failure to develop an LDAR Program as required by Paragraph 83: \$3,500
10 per week, per refinery.

11 160A. For failure to implement the training programs specified in Paragraph 84 -
12 \$10,000 per month, per program, per refinery.

13 161. For failure to conduct any of the audits required by Paragraph 85 - \$5,000 per
14 month, per audit.

15 162. For failure to implement any actions necessary to correct non-compliance as
16 required by Paragraph 86:

<u>Period of Delay</u>	<u>Penalty per day</u>
18 1 st through 30 th day after deadline	\$1,250
19 31 st through 60 th day after deadline	\$3,000
20 Beyond 60 th day	\$5,000, or an amount equal to 1.2 times the 21 economic benefit of delayed compliance, 22 whichever is greater

23 163. For failure to perform monitoring utilizing the lower internal leak rate
24 definitions as specified in Paragraph 87 - \$100 per component, but not greater than \$10,000 per
25 month, per process unit.

26 163A. For failure to repair and re-monitor leaks, as required by Paragraph 88.b, in
27 excess of the lower leak definitions specified in Paragraph 87 - \$100 per component, but not
28 greater than \$10,000 per month, per refinery (except that Paragraph 164 shall apply in lieu of this

1 Paragraph 163A. where both paragraphs are potentially applicable).

2 164. For failure to implement the “initial attempt” repair program in Paragraph 89 –
3 \$100 per valve, but not greater than \$10,000 per month, per refinery

4 164A. For failure to implement the quarterly QA/QC procedures described in
5 Paragraph 92 - \$10,000 per month, per refinery.

6 165. For failure to implement and comply with the LDAR monitoring program as
7 required by Paragraph 90 - \$100 per component, but not greater than \$10,000 per month, per
8 unit.

9 166. For failure to use dataloggers or maintain electronic data as required by
10 Paragraph 91 - \$5,000 per month, per refinery.

11 167. For failure to designate and/or maintain an individual as accountable for
12 LDAR performance as required in Paragraph 93, or for failure to implement the maintenance
13 tracking program in Paragraph 94: - \$3,750 per week, per refinery.

14 168. For failure to conduct the calibration drift assessments or remonitor valves and
15 pumps based on calibration drift assessments in Paragraph 95 - \$100 per missed event, per
16 refinery.

17 169. For failure to comply with the requirements for repair set forth at Paragraph 96
18 - \$5,000 per valve or pump, per incident of non-compliance.

19 170. For failure to submit any written deliverables required by Paragraph 97 -
20 \$1,000 per week, per report.

21 171. If it is determined through a federal, state, or local investigation that Chevron
22 has failed to include all valves and pumps in its LDAR program, Chevron shall pay \$175 per
23 component that it failed to include.

24 **M. Non-Compliance with Requirements for Risk Management Plan for the El**
25 **Segundo Refinery.**

26 172. For each failure to comply with the requirements of Section V.O. of this
27 Consent Decree:

28

	<u>Period of Delay</u>	<u>Penalty per day</u>
1		
2	Days 1-30	\$500
3	Over 30 Days	\$1,500

4 173. **Non-Compliance with Requirements Related to Supplemental**
5 **Environmental Projects.** For failure to satisfactorily complete implementation of the SEPs
6 required under Section VIII, per project, per day:

	<u>Period of Delay</u>	<u>Penalty per day</u>
7		
8	1 st through 30 th day after deadline	\$1,000
9	31 st through 60 th day after deadline	\$1,500
10	Beyond 60 th day	\$2,500

11 174. **Non-Compliance with Requirements for Reporting and Recordkeeping.**
12 For failure to submit reports as required by Section IX, per report, per day:

	<u>Period of Delay</u>	<u>Penalty per day</u>
13		
14	1 st through 30 th day after deadline	\$300
15	31 st through 60 th day after deadline	\$1,000
16	Beyond 60 th day	\$2,000

17 175. **Non-Compliance with Requirements for Payment of Civil Penalties.** For
18 Chevron’s failure to pay the civil penalties as specified in Section X of this Consent Decree,
19 Chevron shall be liable for \$15,000 per day plus interest on the amount overdue at the rate
20 specified in 28 U.S.C. § 1961(a).

21 176. **Non-Compliance with Requirement to Pay Stipulated Penalties.** For
22 failure to pay stipulated penalties as required by Paragraph 177 of this Consent Decree, Chevron
23 shall be liable for \$2,500 per day, and interest on the amount overdue at the rate specified in 28
24 U.S.C. § 1961(a).

25 177. **Payment of Stipulated Penalties.** Chevron shall pay stipulated penalties
26 upon written demand by the United States, or the appropriate Plaintiff-Intervenor, no later than
27 sixty (60) days after Chevron receives such demand. Demand from one agency shall be deemed a
28 demand from all applicable agencies, but the agencies shall consult with each other prior to

1 U.S.C. § 1961(a) -- i.e., a rate equal to the coupon issue yield equivalent (as determined by the
2 Secretary of Treasury) of the average accepted auction price for the last auction of 52-week U.S.
3 Treasury bills settled prior to the Date of Lodging of the Consent Decree. Interest shall be
4 computed daily and compounded annually. Interest shall be calculated from the date payment is
5 due under the Consent Decree through the date of actual payment. For purposes of this
6 Paragraph 180, interest pursuant to this Paragraph will cease to accrue on the amount of any
7 stipulated penalty payment made into an interest bearing escrow account as contemplated by
8 Paragraph 178 of the Consent Decree. Monies timely paid into escrow shall not be considered to
9 be an unpaid balance under this Section.

10 11 **XIII. RIGHT OF ENTRY**

12 181. Any authorized representative of EPA or the applicable Plaintiff-Intervenor,
13 including independent contractors, upon presentation of credentials, shall have a right of entry
14 upon the premises of the facilities of the Chevron Refineries at any reasonable time for the
15 purpose of monitoring compliance with the provisions of this Consent Decree, including
16 inspecting plant equipment and systems, and inspecting and copying all records maintained by
17 Chevron required by this Consent Decree or deemed necessary by EPA or the applicable
18 Plaintiff-Intervenor to verify compliance with this Consent Decree. Chevron shall retain such
19 records for the period of the Consent Decree. Nothing in this Consent Decree shall limit the
20 authority of EPA or the applicable Plaintiff-Intervenor to conduct tests, inspections, or other
21 activities under any statutory or regulatory provision.

22 23 **XIV. FORCE MAJEURE**

24 182. If any event occurs or fails to occur which causes or may cause a delay or
25 impediment to performance in complying with any provision of this Consent Decree, Chevron
26 shall notify EPA and the appropriate Plaintiff-Intervenor in writing as soon as practicable, but in
27 any event within ten (10) business days of the date when Chevron first knew of the event or
28 should have known of the event by the exercise of due diligence. In this notice, Chevron shall

1 specifically reference this Paragraph 182 of this Consent Decree and describe the anticipated
2 length of time the delay may persist, the cause or causes of the delay, and the measures taken or
3 to be taken by Chevron to prevent or minimize the delay and the schedule by which those
4 measures shall be implemented. Chevron shall take all reasonable steps to avoid or minimize
5 such delays. The notice required by this Section shall be effective upon the mailing of the same
6 by certified mail, return receipt requested, to the Applicable EPA Regional Office as specified in
7 Paragraph 231 (Notice).

8 183. Failure by Chevron to substantially comply with the notice requirements of
9 Paragraph 182 as specified above shall render this Section XIV (Force Majeure) voidable by the
10 United States, in consultation with the appropriate Plaintiff-Intervenor, as to the specific event
11 for which Chevron has failed to comply with such notice requirement, and, if voided, is of no
12 effect as to the particular event involved.

13 184. The United States, after consultation with the appropriate Plaintiff-Intervenor,
14 shall notify Chevron in writing regarding its claim of a delay or impediment to performance
15 within thirty (30) days of receipt of the force majeure notice provided under Paragraph 182.

16 185. If the United States, after consultation with the appropriate Plaintiff-
17 Intervenor, agrees that the delay or impediment to performance has been or will be caused by
18 circumstances beyond the control of Chevron including any entity controlled by Chevron and
19 that Chevron could not have prevented the delay by the exercise of due diligence, the appropriate
20 Parties shall stipulate in writing to an extension of the required deadline(s) for all requirement(s)
21 affected by the delay by a period equivalent to the delay actually caused by such circumstances.
22 Such stipulation shall be treated as a non-material modification to the Consent Decree pursuant
23 to the modification procedures established in this Consent Decree. Chevron shall not be liable
24 for stipulated penalties for the period of any such delay.

25 186. If the United States, after consultation with the appropriate Plaintiff-
26 Intervenor, does not accept Chevron's claim of a delay or impediment to performance, Chevron
27 must submit the matter to the Court for resolution to avoid payment of stipulated penalties, by
28 filing a petition for determination with the Court. Once Chevron has submitted this matter to the

1 Court, the United States and the appropriate Plaintiff-Intervenor shall have twenty (20) business
2 days to file their responses to the petition. If the Court determines that the delay or impediment
3 to performance has been or will be caused by circumstances beyond the control of Chevron
4 including any entity controlled by Chevron and that the delay could not have been prevented by
5 Chevron by the exercise of due diligence, Chevron shall be excused as to that event(s) and delay
6 (including stipulated penalties), for a period of time equivalent to the delay caused by such
7 circumstances.

8 187. Chevron shall bear the burden of proving that any delay of any requirement(s)
9 of this Consent Decree was caused by or will be caused by circumstances beyond its/their
10 control, including any entity controlled by it, and that it could not have prevented the delay by
11 the exercise of due diligence. Chevron shall also bear the burden of proving the duration and
12 extent of any delay(s) attributable to such circumstances. An extension of one compliance date
13 based on a particular event may, but will not necessarily result in an extension of a subsequent
14 compliance date or dates.

15 188. Unanticipated or increased costs or expenses associated with the performance
16 of Chevron's obligations under this Consent Decree shall not constitute circumstances beyond its
17 control, or serve as the basis for an extension of time under this Section XIV.

18 189. Notwithstanding any other provision of this Consent Decree, this Court shall
19 not draw any inferences nor establish any presumptions adverse to any Party as a result of
20 Chevron serving a force majeure notice or the Parties' inability to reach agreement.

21 190. As part of the resolution of any matter submitted to this Court under this
22 Section XIV, the appropriate Parties by agreement, or the Court, by order, may in appropriate
23 circumstances extend or modify the schedule for completion of work under the Consent Decree
24 to account for the delay in the work that occurred as a result of any delay or impediment to
25 performance agreed to by the United States or approved by this Court. Chevron shall be liable
26 for stipulated penalties for their failure thereafter to complete the work in accordance with the
27 extended or modified schedule.

28

1 **XV. RETENTION OF JURISDICTION/DISPUTE RESOLUTION**

2 191. This Court shall retain jurisdiction of this matter for the purposes of
3 implementing and enforcing the terms and conditions of the Consent Decree and for the purpose
4 of adjudicating all disputes (including, but not limited to, determinations under Section V
5 (Affirmative Relief/Environmental Projects) of the Consent Decree) between the United States
6 and the Plaintiff-Intervenors and Chevron that may arise under the provisions of the Consent
7 Decree, until the Consent Decree terminates in accordance with Section XVIII of this Consent
8 Decree (Termination).

9 192. The dispute resolution procedure set forth in this Section XV shall be available
10 to resolve any and all disputes arising under this Consent Decree, including assertion of
11 commercial unavailability under Paragraph 108 of this Consent Decree, provided that the Party
12 making such application has made a good faith attempt to resolve the matter with the other Party.

13 193. The dispute resolution procedure required herein shall be invoked upon the
14 giving of written notice by one of the Parties to this Consent Decree to another advising the other
15 appropriate Party(ies) of a dispute pursuant to this Section XV. The notice shall describe the
16 nature of the dispute, and shall state the noticing Party's position with regard to such dispute.

17 194. Disputes submitted to dispute resolution shall, in the first instance, be the
18 subject of informal negotiations between the Parties. Such period of informal negotiations shall
19 not extend beyond ninety (90) calendar days from the date of the first meeting between
20 representatives of the Parties, unless it is agreed that this period should be extended.

21 195. In the event that the Parties are unable to reach agreement during such
22 informal negotiation period, the United States or the appropriate Plaintiff-Intervenor, as
23 applicable, shall provide Chevron with a written summary of its position regarding the dispute.
24 The position advanced by the United States or the appropriate Plaintiff-Intervenor, as applicable,
25 shall be considered binding unless, within forty-five (45) calendar days of Chevron's receipt of
26 the written summary of the United States' or the appropriate Plaintiff-Intervenor's position,
27 Chevron files with the Court a petition which describes the nature of the dispute. The United
28 States or the appropriate Plaintiff-Intervenor shall respond to the petition within forty-five (45)

1 calendar days of filing. In resolving the dispute between the parties, the position of the United
2 States and the appropriate Plaintiff-Intervenor shall be upheld if supported by substantial
3 evidence in the administrative record.

4 196. In the event that the United States and the appropriate Plaintiff-Intervenor
5 make differing determinations or take differing actions that affect Chevron's rights or obligations
6 under this Consent Decree, the final decisions of the United States shall take precedence.

7 197. Where the nature of the dispute is such that a more timely resolution of the
8 issue is required, the time periods set forth in this Section XV may be shortened upon motion of
9 one of the Parties to the dispute.

10 198. The Parties do not intend that the invocation of this Section XV by a Party
11 cause the Court to draw any inferences nor establish any presumptions adverse to either Party as
12 a result of invocation of this Section.

13 199. As part of the resolution of any dispute submitted to dispute resolution, the
14 Parties, by agreement, or this Court, by order, may, in appropriate circumstances, extend or
15 modify the schedule for completion of work under this Consent Decree to account for the delay
16 in the work that occurred as a result of dispute resolution. Chevron shall be liable for stipulated
17 penalties for their failure thereafter to complete the work in accordance with the extended or
18 modified schedule.

19
20 **XVI. EFFECT OF SETTLEMENT**

21 200. **Definitions.** For purposes of Section XVI (Effect of Settlement), the
22 following definitions apply:

23 a. "Applicable NSR/PSD Requirements" shall mean: PSD requirements at Part C
24 of Subchapter I of the Act, 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40
25 C.F.R. §§ 52.21 and 51.166; the portions of the applicable SIPs and related rules adopted as
26 required by 40 C.F.R. §§ 51.165 and 51.166; "Plan Requirements for Non-Attainment Areas" at
27 Part D of Subchapter I of the Act, 42 U.S.C. §§ 7502-7503, and the regulations promulgated
28 thereunder at 40 C.F.R. §§ 51.165 (a) and (b), 40 C.F.R. Part 51, Appendix S, and 40 C.F.R. §

1 52.24, and any Title V regulations that implement, adopt or incorporate the specific regulatory
 2 requirements identified above; any applicable, federally-enforceable state or local regulations
 3 that implement, adopt, or incorporate the specific federal regulatory requirements identified
 4 above, and any Title V permit provisions that implement, adopt or incorporate the specific
 5 regulatory requirements identified above; and any applicable state or local regulations
 6 enforceable by Plaintiff-Intervenors that implement, adopt, or incorporate the specific federal
 7 regulatory requirements identified above.

8 b. “Applicable NSPS Subparts A and J Requirements” shall mean the standards,
 9 monitoring, testing, reporting and recordkeeping requirements, found at 40 C.F.R. §§ 60.100
 10 through 60.109 (Subpart J), relating to a particular pollutant and a particular affected facility, and
 11 the corollary general requirements found at 40 C.F.R. §§ 60.1 through 60.19 (Subpart A) that are
 12 applicable to any affected facility covered by Subpart J.

13 c. “Post-Lodging Compliance Dates” shall mean any dates in this Section XVI
 14 (Effect of Settlement) after the Date of Lodging. Post-Lodging Compliance Dates include dates
 15 certain (e.g., “December 31, 2004”), dates after Lodging represented in terms of “months after
 16 Lodging” (e.g., “Twelve Months after the Date of Lodging”), and dates after Lodging
 17 represented by actions taken (e.g., “Date of Certification”). The Post-Lodging Compliance
 18 Dates represent the dates by which work is required to be completed or an emission limit is
 19 required to be met under the applicable provisions of this Consent Decree.

20 201. **Resolution of Liability Regarding the Applicable NSR/PSD Requirements.**

21 With respect to emissions of the following pollutants from the following units, entry of this
 22 Consent Decree shall resolve all civil liability of Chevron to the United States and the Plaintiff-
 23 Intervenors for violations of the Applicable NSR/PSD Requirements resulting from pre-Lodging
 24 construction or modification.

Refinery/Unit	Pollutant	Date
Richmond FCCU	NOx	Date of Lodging
	SO ₂	May 31, 2008
	CO	Date of Lodging

1	El Segundo FCCU	NOx	December 31, 2008
2		SO2	December 31, 2005
3		PM	Date of Lodging
4	Pascagoula FCCU	NOx	November 30, 2008
5		SO2	September 30, 2007
6	Salt Lake City FCCU	NOx	May 31, 2009 (w/hydro)
7			November 30, 2010 (w/o hydro)
8		SO2	December 31, 2008 (w/hydro)
9			December 31, 2010 (w/o hydro)
10	Hawaii FCCU	NOx	August 31, 2011
11		SO2	August 31, 2011
12			
13	All Facilities		
14	Heaters and boilers on	NOx	Later of Date of Lodging or date
15	which Qualifying Controls are		of installation of Qualifying
16	installed and which are used to		Controls
17	satisfy the requirements of ¶ 33		
18	All other heaters and boilers	NOx	Date of Lodging
19	All heaters and boilers	SO2	Date of Lodging or dates set forth
20			in Appendix D if other than Date
21			of Lodging
22	Other specific equipment		
23	(listed on Appendix E)	SO2	Dates set forth in Appendix E

24 **202. Resolution of Liability for PM Emissions Under the Applicable NSR/PSD**

25 **Requirements.** With respect to emissions of PM from the FCCUs at the Richmond, Pascagoula,

26 Salt Lake City and Hawaii Refineries, if and when Chevron accepts an emission limit of 0.5

27 pound PM per 1000 pounds of coke burned on a 3-hour average basis and demonstrates

28 compliance by conducting a 3-hour performance test representative of normal operating

1 conditions for PM emissions at a particular Refinery, and, for the Richmond FCCU, Chevron
2 also demonstrates compliance with all applicable BAAQMD requirements including, but not
3 limited to, Permit Condition 11066 and Regulation 6, then all civil liability of Chevron to the
4 United States and the Plaintiff-Intervenors shall be resolved for violations of the Applicable
5 NSR/PSD Requirements relating to PM emissions at the relevant Refinery resulting from pre-
6 Lodging construction or modification of the FCCU for that Refinery.

7 203. **Resolution of Liability for CO Emissions Under the Applicable NSR/PSD**
8 **Requirements.** With respect to emissions of CO from the FCCUs at the El Segundo,
9 Pascagoula, Salt Lake City and Hawaii Refineries, if and when Chevron accepts an emission
10 limit of 100 ppmvd of CO at 0% O₂ on a 365-day rolling average basis and demonstrates
11 compliance using CEMS at the relevant Refinery, then all civil liability of Chevron to the United
12 States and the Plaintiff-Intervenors shall be resolved for violations of the Applicable NSR/PSD
13 Requirements relating to CO emissions at the relevant Refinery resulting from pre-Lodging
14 construction or modification of the FCCU for that Refinery.

15 204. **Reservation of Rights Regarding Applicable NSR/PSD Requirements:**
16 **Release for Violations Continuing After the Date of Lodging Can Be Rendered Void.**
17 Notwithstanding the resolution of liability in Paragraphs 201-203, the releases of liability by the
18 United States and the Plaintiff-Intervenors to Chevron for violations of the Applicable NSR/PSD
19 Requirements during the period between the Date of Lodging of the Consent Decree and the
20 Post-Lodging Compliance Dates shall be rendered void if Chevron materially fails to comply
21 with any of the obligations and requirements of Section V.A. to V.D. (relating to FCCUs) or
22 Sections V.F. and V.G. (relating to heaters and boilers) of this Consent Decree; provided,
23 however, that the releases in Paragraphs 201-203 shall not be rendered void if Chevron remedies
24 such material failure and pays any stipulated penalties due as a result of such material failure.

25 205. **Exclusions from Release Coverage Regarding Applicable NSR/PSD**
26 **Requirements: Construction and/or Modification Not Covered by Paragraphs 201-203.**
27 Notwithstanding the resolution of liability in Paragraphs 201-203, nothing in this Consent
28 Decree precludes the United States and/or the Plaintiff-Intervenors from seeking from Chevron

1 injunctive relief, penalties, or other appropriate relief for violations by Chevron of the
 2 Applicable NSR/PSD Requirements resulting from: (1) construction or modification that
 3 commenced prior to the Date of Lodging of the Consent Decree, if the resulting violations relate
 4 to pollutants or units not covered by the Consent Decree; or (2) any construction or modification
 5 that commences after the Date of Lodging of the Consent Decree.

6 206. **Evaluation of Applicable PSD/NSR Requirements Must Occur**. Increases
 7 in emissions from units covered by this Consent Decree, where the increases result from the
 8 Post-Lodging construction or modification of any units within the Chevron Refineries, are
 9 beyond the scope of the release in Paragraphs 201-203, and Chevron must evaluate any such
 10 increases in accordance with the Applicable PSD/NSR Requirements.

11 207-209. [Omitted]

12 210. **Resolution of Liability Regarding Applicable NSPS Subparts A and J**
 13 **Requirements**. With respect to emissions of the following pollutants from the following units,
 14 entry of this Consent Decree shall resolve all civil liability of Chevron to the United States and
 15 the Plaintiff-Intervenors for violations of the Applicable NSPS Subparts A and J Requirements
 16 from the date that the claims of the United States and the Plaintiff-Intervenors accrued up to the
 17 following dates:

Unit	Pollutant	Date
Richmond FCCU	SO ₂ , PM, CO, Opacity	Date of Lodging
El Segundo FCCU	SO ₂ and PM	June 30, 2004
	CO and Opacity	April 10, 2005
Pascagoula FCCU	SO ₂ , PM, CO, and Opacity	April 10, 2005
Salt Lake City FCCU	SO ₂	June 30, 2006 (w/hydro)
		April 10, 2005 (w/o hydro)
	PM, CO, Opacity	April 10, 2005
Hawaii FCCU	PM, CO and Opacity	April 10, 2005
	SO ₂	December 31, 2005

1	Richmond SRP	SO2	June 30, 2004
2	El Segundo SRP	SO2	June 30, 2004
3	Salt Lake City SRP	SO2	December 31, 2004
4	Pascagoula SRUs 4, 5, 6	SO2	Date of Lodging
5	Pascagoula SRUs 2, 3	SO2	Earlier of date on which units
6			achieve compliance with NSPS
7			Subpart J or July 31, 2007
8	All Refineries		
9	All heaters and boilers	SO ₂	Date of Lodging or Dates set forth
10			in Appendix D if other than Date
11			of Lodging
12	Other specified equipment	SO2	Dates set forth in
13	(listed in Appendix E)		Appendix E
14			
15	All Flaring Devices	SO2	Date on which Chevron
16			certifies compliance with NSPS
17			Subpart J for the relevant flaring
18			device pursuant to Paragraph 54

19 211. **Reservation of Rights Regarding Applicable NSPS Subparts A and J**
20 **Requirements: Release for NSPS Violations Occurring After the Date of Lodging Can Be**
21 **Rendered Void.** Notwithstanding the resolution of liability in Paragraph 210, the release of
22 liability by the United States and the Plaintiff-Intervenors to Chevron for violations of any
23 Applicable NSPS Subparts A and J Requirements that occurred between the Date of Lodging
24 and the Post-Lodging Compliance Dates shall be rendered void if Chevron materially fails to
25 comply with the obligations and requirements of Sections V.G. through V.I. of this Consent
26 Decree; provided, however, that the release in Paragraph 210 shall not be rendered void if
27 Chevron remedies such material failure and pays any stipulated penalties due as a result of such
28 material failure.

1 212. **Prior NSPS Applicability Determinations**. Nothing in this Consent Decree
2 shall affect the status of any FCCU, heater or boiler, fuel gas combustion device, or sulfur
3 recovery plant currently subject to NSPS as previously determined by any federal, state, or local
4 authority or any applicable permit.

5 213. **Reservation of Rights Under NSPS Subpart H**. Nothing in this Consent
6 Decree shall affect, and the United States and Plaintiff-Intervenor Hawaii expressly reserve, the
7 right of the United States and Plaintiff-Intervenor Hawaii to bring an enforcement action against
8 Chevron for violations of NSPS, 40 C.F.R. Part 60, Subpart H (Sulfuric Acid Plants), and/or
9 Hawaii statutes and regulations with respect to the sulfuric acid plant at Chevron’s Hawaii
10 Refinery.

11 214. **Resolution of Liability Regarding Benzene Waste NESHAP**
12 **Requirements**.

13 a. Entry of this Consent Decree shall resolve all civil liability of Chevron to the
14 United States and the Plaintiff-Intervenors for violations of the statutory and regulatory
15 requirements set forth below in subparagraphs a.i. through a.iii. (the “BWON Requirements”)
16 that (1) commenced and ceased prior to the Date of Entry of the Consent Decree; and (2)
17 commenced prior to the Date of Entry of the Consent Decree and/or continued past the Date of
18 Entry, provided that the events giving rise to such post-Entry violations are identified by
19 Chevron in its BWON Compliance Review and Verification Report(s) submitted pursuant to
20 Paragraph 70 and corrected by Chevron as required under Paragraph 71:

- 21 i. **Benzene Waste NESHAP**. The National Emission Standard for Benzene
22 Waste Operations, 40 C.F.R. Part 61, Subpart FF, promulgated pursuant to
23 Section 112(e) of the Act, 42 U.S.C. § 7412(e), including any federal
24 regulation that adopts or incorporates the requirements of Subpart FF by
25 express reference, but only to the extent of such adoption or incorporation; and
26 ii. Any applicable, federally-enforceable state or local regulations that implement,
27 adopt, or incorporate the specific federal regulatory requirements identified in
28 Paragraph 214.a.

1 b. Any applicable state or local regulations, State Implementation Plan
2 requirements, or permits that implement, adopt, or incorporate the regulatory requirements
3 identified in Paragraph 214A.a. or set similar standards and that are enforceable by the United
4 States or a Plaintiff-Intervenor.

5
6 215. **Reservation of Rights Regarding Benzene NESHAP and LDAR**
7 **Requirements.** Notwithstanding the resolution of liability in Paragraphs 214-214A, nothing in
8 this Consent Decree precludes the United States and/or the Plaintiff-Intervenors from seeking
9 from Chevron injunctive and/or other equitable relief or civil penalties for violations by Chevron
10 of Benzene Waste NESHAP and/or LDAR requirements that (1) commenced prior to the Date of
11 Entry of this Consent Decree and continued after the Date of Entry if Chevron fails to identify
12 and address such violations as required by Paragraphs 70-71 and Paragraphs 85.a. and 86 of this
13 Consent Decree; or (B) commenced after the Date of Entry of the Consent Decree.

14 215A. **Reservation of Rights Regarding BAAQMD NOVs.** Notwithstanding the
15 resolution of liability in Paragraphs 201-203, 210, and 214-214A, nothing in this Consent Decree
16 precludes BAAQMD from seeking from Chevron injunctive and/or other equitable relief or civil
17 penalties for violations by Chevron that are identified by BAAQMD prior to the Date of Lodging
18 of this Consent Decree and incorporated in Notices of Violations (“NOVs”) issued by
19 BAAQMD to Chevron.

20 216. **Other.** Entry of this Consent Decree shall resolve all civil liability of Chevron
21 to the United States and the Plaintiff-Intervenors for the following:

22 a. **Salt Lake City BWON.** All potential violations of 40 C.F.R. Part 61, Subpart
23 FF, and of applicable NSPS Subpart J requirements with respect to the SRP at the Salt Lake City
24 Refinery, arising from the information disclosed by Chevron during EPA’s August 30 –
25 September 2, 1999 inspection and related investigation of the Salt Lake City Refinery, including
26 the specific violations that are the subject of a litigation referral from EPA to the Department of
27
28

1 Justice.

2 b. El Segundo EPCRA, CERCLA, and RMP. All potential violations of Section
3 103(a) of CERCLA, Section 304 of EPCRA, and Section 112(r) of the Clean Air Act at the El
4 Segundo Refinery relating to the information disclosed by Chevron during EPA's November 14-
5 17, 2001 inspection and EPA's related investigation of the El Segundo Refinery, including the
6 specific violations that are the subject of a litigation referral from EPA to the Department of
7 Justice.

8 c. El Segundo BWON. All potential violations of 40 C.F.R. Part 61, Subpart FF,
9 at the El Segundo Refinery arising from information disclosed by Chevron during EPA's
10 September 1999 inspection and EPA's related investigation of the El Segundo Refinery.

11 217. **Resolution of Liability Regarding CERCLA/EPCRA Reporting**
12 **Requirements for Pre-Lodging Flaring Events.** Upon receipt by EPA of Chevron's
13 CERCLA/EPCRA Compliance Review Report submitted pursuant to Paragraph 59A, this
14 Consent Decree shall resolve all civil liability of Chevron to the United States and the Plaintiff-
15 Intervenors for violations of Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Section 304
16 of EPCRA, 42 U.S.C. § 11004, for all flaring events and associated violations of Section 103(a)
17 of CERCLA and Section 304 of EPCRA that Chevron has identified in its CERCLA/EPCRA
18 Compliance Review Report and corrected as set forth in Paragraph 59A.

19 218. [omitted]

20 219. **Audit Policy.** Nothing in this Consent Decree is intended to limit or
21 disqualify Chevron, on the grounds that information was not discovered and supplied
22 voluntarily, from seeking to apply EPA's Audit Policy or any state or local audit policy to any
23 violations or non-compliance that Chevron discovers during the course of any investigation,
24 audit, or enhanced monitoring that Chevron is required to undertake pursuant to this Consent
25 Decree.

26 220. **Claim/Issue Preclusion.** In any subsequent administrative or judicial
27 proceeding initiated by the United States or the Plaintiff-Intervenors for injunctive relief,
28 penalties, or other appropriate relief relating to Chevron for violations of the PSD/NSR, NSPS,

1 NESHAP, and/or LDAR requirements, not identified in Section XVI (Effect of Settlement) of
2 the Consent Decree and/or the Complaint:

3 a. Chevron shall not assert, and may not maintain, any defense or claim based
4 upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, or claim-
5 splitting. Nor may Chevron assert, or maintain, any other defenses based upon any contention
6 that the claims raised by the United States or the Plaintiff-Intervenors in the subsequent
7 proceeding were or should have been brought in the instant case. Nothing in the preceding
8 sentences is intended to affect the ability of Chevron to assert that the claims are deemed
9 resolved by virtue of Section XVI of the Consent Decree.

10 b. Except as set forth in Paragraph 220.a., above, the United States and the
11 Plaintiff-Intervenors may not assert or maintain that this Consent Decree constitutes a waiver or
12 determination of, or otherwise obviates, any claim or defense whatsoever, or that this Consent
13 Decree constitutes acceptance by Chevron of any interpretation or guidance issued by EPA
14 related to the matters addressed in this Consent Decree.

15 221. **Imminent and Substantial Endangerment.** Nothing in this Consent Decree
16 shall be construed to limit the authority of the United States and the Plaintiff-Intervenors to
17 undertake any action against any person, including Chevron, to abate or correct conditions which
18 may present an imminent and substantial endangerment to the public health, welfare, or the
19 environment.

20 222. [Omitted]

21
22 **XVII. GENERAL PROVISIONS**

23 223. **Other Laws.** Except as specifically provided by this Consent Decree, nothing
24 in this Consent Decree shall relieve Chevron of its obligations to comply with all applicable
25 federal, state, and local laws and regulations, including but not limited to more stringent
26 standards. In addition, nothing in this Consent Decree shall prohibit or prevent the United States
27 or Plaintiff-Intervenors from developing, implementing, and enforcing more stringent standards
28 subsequent to the Date of Lodging of this Consent Decree through rulemaking, the permit

1 process, or as otherwise authorized or required under federal, state, or local laws and regulations.
2 Subject to Section XVI (Effect of Settlement) and Paragraph 224 of this Consent Decree, nothing
3 contained in this Consent Decree shall be construed to prevent or limit the rights of the United
4 States or the Plaintiff-Intervenors to seek or obtain other remedies or sanctions available under
5 other federal, state, or local statutes or regulations, by virtue of Chevron's violation of the
6 Consent Decree or of the statutes and regulations upon which the Consent Decree is based, or for
7 Chevron's violations of any applicable provision of law. This shall include the right of the
8 United States or the Plaintiff-Intervenors to invoke the authority of the Court to order Chevron's
9 compliance with this Consent Decree in a subsequent contempt action. The requirements of this
10 Consent Decree do not exempt Chevron from complying with any and all new or modified
11 federal, state, and/or local statutory or regulatory requirements that may require technology,
12 equipment, monitoring, or other upgrades after the Date of Lodging of this Consent Decree.

13 224. **Post-Permit Violations**. Nothing in this Consent Decree shall be construed to
14 prevent or limit the right of the United States or the Plaintiff-Intervenors to seek injunctive or
15 monetary relief for violations of limits that have been incorporated into permits pursuant to this
16 Consent Decree; provided, however, that with respect to monetary relief, the United States and
17 the Plaintiff-Intervenors must elect between filing a new action for such monetary relief or
18 seeking stipulated penalties under this Consent Decree, if stipulated penalties also are available
19 for the alleged violation(s).

20 225. **Failure of Compliance**. The United States and the Plaintiff-Intervenors do
21 not, by their consent to the entry of Consent Decree, warrant or aver in any manner that
22 Chevron's complete compliance with the Consent Decree will result in compliance with the
23 provisions of the CAA or the state statutes and regulations identified in Paragraph 9, or the
24 provisions of CERCLA or EPCRA. Notwithstanding the review or approval by EPA or the
25 Plaintiff-Intervenors of any plans, reports, policies or procedures formulated pursuant to the
26 Consent Decree, Chevron shall remain solely responsible for compliance with the terms of the
27 Consent Decree, except as provided in Section XIV (**Force Majeure**), all applicable permits, and
28 all applicable federal, state, and local laws and regulations.

1 226. **Service of Process.** Chevron hereby agrees to accept service of process by
2 mail with respect to all matters arising under or relating to the Consent Decree and to waive the
3 formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any
4 applicable local rules of this Court, including but not limited to, service of a summons. The
5 persons identified by Chevron at Paragraph 231 (Notice) are authorized to accept service of
6 process with respect to all matters arising under or relating to the Consent Decree.

7 227. **Post-Lodging/Pre-Entry Obligations.** Obligations of Chevron under this
8 Consent Decree to perform duties scheduled to occur after the Date of Lodging of the Consent
9 Decree, but prior to the Date of Entry of the Consent Decree, shall be legally enforceable only on
10 and after the Date of Entry of the Consent Decree. Liability for stipulated penalties, if
11 applicable, shall accrue for violation of such obligations and payment of such stipulated penalties
12 may be demanded by the United States or the Plaintiff-Intervenors as provided in this Consent
13 Decree, provided that the stipulated penalties that may have accrued between the Date of
14 Lodging of the Consent Decree and the Date of Entry of the Consent Decree may not be
15 collected unless and until this Consent Decree is entered by the Court.

16 228. **Costs.** Each Party to this action shall bear its own costs and attorneys' fees.

17 229. **Public Documents.** All information and documents submitted by Chevron to
18 EPA and the appropriate Plaintiff-Intervenors pursuant to this Consent Decree shall be subject to
19 public inspection in accordance with the respective statutes and regulations that are applicable to
20 EPA and the Plaintiff-Intervenors, unless subject to legal privileges or protection or identified
21 and supported as trade secrets or business confidential in accordance with the respective state or
22 federal statutes or regulations.

23 230. **Public Notice and Comment.** The Parties agree to the Consent Decree and
24 agree that the Consent Decree may be entered upon compliance with the public notice
25 procedures set forth at 28 C.F.R. § 50.7, and upon notice to this Court from the United States
26 Department of Justice requesting entry of the Consent Decree. The United States reserves the
27 right to withdraw or withhold its consent to the Consent Decree if public comments disclose
28 facts or considerations indicating that the Consent Decree is inappropriate, improper, or

1 inadequate.

2 231. **Notice.** Unless otherwise provided herein, notifications to or communications
3 between the Parties shall be deemed submitted on the date they are postmarked and sent by U.S.
4 Mail, postage pre-paid, except for notices under Section XIV (Force Majeure) and Section XV
5 (Retention Jurisdiction/Dispute Resolution) which shall be sent by overnight mail or by certified
6 or registered mail, return receipt requested. Each report, study, notification or other
7 communication of Chevron shall be submitted as specified in this Consent Decree, with copies to
8 EPA Headquarters and the Applicable EPA Region and the applicable Plaintiff-Intervenor. If
9 the date for submission of a report, study, notification or other communication falls on a
10 Saturday, Sunday or legal holiday, the report, study, notification or other communication will be
11 deemed timely if it is submitted the next business day. Except as otherwise provided herein, all
12 reports, notifications, certifications, or other communications required or allowed under this
13 Consent Decree to be submitted or delivered to the United States, EPA, the Plaintiff-Intervenors,
14 and Chevron shall be addressed as follows:

15 **As to the United States:**

16 Chief
17 Environmental Enforcement Section
18 Environment and Natural Resources Division
19 U.S. Department of Justice
20 P.O. Box 7611, Ben Franklin Station
21 Washington, DC 20044-7611
22 Reference Case No. 90-5-2-1-07629

23 **As to EPA:**

24 Director, Air Enforcement Division
25 Office of Regulatory Enforcement
26 U.S. Environmental Protection Agency
27 Mail Code 2242-A
28 1200 Pennsylvania Avenue, N.W.
 Washington, DC 20460-0001

 with a hard copy to

 Director, Air Enforcement Division
 Office of Regulatory Enforcement
 c/o Matrix Environmental & Geotechnical Services
 120 Eagle Rock Avenue
 Suite 207
 East Hanover, NJ 07936
 Attn: Norma Eichlin

1 and an electronic copy to

2 neichlin@matrixegs.com
3 Jackson.james@epa.gov
4 foley.patrick@epa.gov

4 **EPA Regions:**

5 Region 4:

6 Chief
7 Air Enforcement & EPCR Branch
8 Mail Code 4APTMD-AEEB
9 USEPA Region 4
10 61 Forsyth Street, S.W.
11 Atlanta, GA 30303

12 Region 8:

13 Air Director
14 Technical Enforcement Program
15 Mail Code 8 ENF-T
16 Office of Enforcement, Compliance & Environmental Justice
17 USEPA Region 8
18 999 18th Street, Suite 300
19 Denver, CO 80202

20 Region 9:

21 Director
22 Air Division
23 Mail Code AIR-1
24 USEPA Region 9
25 75 Hawthorne Street
26 San Francisco, CA 94105

27 **Plaintiff-Intervenors:**

28 Bay Area Air Quality Management District
Executive Officer/Air Pollution Control Officer
39 Ellis Street
San Francisco, CA 94109

Clean Air Branch
Environmental Management Division
Hawaii Department of Health
P. O. Box 3378
Honolulu, HI 96801-3378

Mississippi Department of Environmental Quality
Chief, Environmental Compliance & Enforcement Division
Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289

Christian C. Stephens
Assistant Attorney General
Department of Environmental Quality
150 North 1950 West
P.O. Box 144820
Salt Lake City, UT 84114-4820

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

As to Chevron:

All communications to Chevron shall be addressed to:

NSR Project Manager
Chevron Products Company, Global Refining
Chevron Richmond Refinery
Technical Center, 3rd Floor
841 Chevron Way
Richmond, CA 94801

With a copy to each affected Refinery:

Manager, Health/Environmental/Safety
Chevron Products Company
Chevron El Segundo Refinery
324 West El Segundo Blvd.
El Segundo, CA 90245

Resources Superintendent
Chevron Products Company
Chevron Hawaii Refinery
91480 Malakole Street
Kapolei, HI 96707

Manager, Safety/Environmental/Health Services
Chevron Products Company
Chevron Pascagoula Refinery
250 Industrial Road
Pascagoula, MS 39581-3201

Health, Environment, and Safety Manager
Chevron Products Company
Chevron Richmond Refinery
Technical Center
841 Chevron Way
Richmond, CA 94801

Technical Manager
Chevron Products Company
Chevron Salt Lake City Refinery
2351 N. 1100 West
Salt Lake City, UT 84116

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. In addition, the nature and frequency of reports required by the Consent Decree may be modified by mutual consent of the Parties. The consent of the United States to such modification must be in the form of a written notification from EPA, but need not be filed with the Court to be

1 effective.

2 232. **Approvals.** All EPA approvals or comments required under this Decree shall come from
3 EPA, Office of Regulatory Enforcement, Air Enforcement Division, at the address listed in Paragraph 231
4 (Notice). All Plaintiff-Intervenor approvals shall be sent from the offices identified in Paragraph 231.

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

8 234. **Modification.** The Consent Decree contains the entire agreement of the Parties and shall
9 not be modified by any prior oral or written agreement, representation or understanding. Prior drafts of the
10 Consent Decree shall not be used in any action involving the interpretation or enforcement of the Consent
11 Decree. Non-material modifications to this Consent Decree shall be in writing and signed by the Parties. The
12 United States will file non-material modifications with the Court on a periodic basis. For purposes of this
13 Paragraph 234, non-material modifications shall include, but not be limited to, schedule modifications that do
14 not extend the date for compliance with emission limitations following the installation of control equipment,
15 schedule modifications that do not extend the date for completion of a catalyst additive program (as specified
16 in Paragraphs 12.g. or 17.e. of this Consent Decree), and modifications to frequency of reporting obligations,
17 provided that such changes are agreed upon in writing by EPA and Chevron. Material modifications to this
18 Consent Decree shall be in writing, signed by the Parties, and shall be effective upon approval by the Court.
19 Specific provisions in this Consent Decree that govern specific types of modifications shall be effective as set
20 forth in the specific provision governing the modification.

21

22

XVIII. TERMINATION

23

24

25

26

27

28

235. This Consent Decree shall be subject to termination upon motion by the United States or
Chevron under the conditions identified in Paragraph 237, below. Prior to seeking termination, Chevron must
have completed and satisfied all of the following requirements of this Consent Decree:

- a. installation of control technology systems as specified in this Consent Decree;
- b. compliance with all provisions contained in this Consent Decree, which compliance may
be established for specific parts of the Consent Decree in accordance with

1 Paragraph 236, below;

2 c. payment of all penalties and other monetary obligations due under the terms of
3 the Consent Decree; no penalties or other monetary obligations due hereunder can be
4 outstanding or owed to the United States or the Plaintiff-Intervenors;

5 d. completion of the Supplemental Environmental Projects as set forth in Section
6 VIII;

7 e. application for and receipt of permits incorporating the surviving emission
8 limits and standards established under Section V; and

9 f. operation for at least one year of each unit in compliance with the emission
10 limits established herein, and certification of such compliance for each unit within the first
11 progress report following the conclusion of the compliance period, provided, however, that
12 limits established for the Hawaii Refinery pursuant to Paragraphs 12.g., 13, 17.e., and 18 are not
13 subject to the requirement in this Paragraph 235.f. if Chevron has applied for and received the
14 required permits for such limits.

15 236. **Certification of Completion.**

16 a. Prior to moving for termination, Chevron may certify completion for each
17 Chevron Refinery of one or more of the following parts of the Consent Decree, provided that all
18 of the related requirements for that Refinery have been satisfied:

19 i. Section V.A. - Fluid Catalytic Cracking Unit (including operation of the unit
20 for one year after completion in compliance with the emission limit set
21 pursuant to the Consent Decree with the exception of the Hawaii Refinery as
22 set forth in Paragraph 235.f.);

23 ii. Sections V.B. through V.E. - Fluid Catalytic Cracking Unit (including
24 operation of the unit for one year after completion in compliance with the
25 emission limits set pursuant to the Consent Decree with the exception of the
26 Hawaii Refinery as set forth in Paragraph 235.f.);

27 iii. Sections V.F. and V.G. – Heaters and Boilers (including operation of the
28 relevant units for one year after completion in compliance with the emission

1 limit set pursuant to the Consent Decree);

2 iv. Section VIII – Supplemental Environmental Projects

3 b. Within 90 days after Chevron concludes that any of the parts of the Consent
4 Decree identified in Paragraph 236.a.i. - iv. have been completed for any one of the Chevron
5 Refineries, Chevron may submit a written report to EPA and the appropriate Plaintiff-Intervenor
6 describing the activities undertaken and certifying that the applicable Sections have been
7 completed in full satisfaction of the requirements of this Consent Decree, and that Chevron is in
8 substantial and material compliance with all of the other requirements of the Consent Decree.
9 The report shall contain the following statement, signed by a responsible corporate official of
10 Chevron:

11 To the best of my knowledge, after thorough investigation, I
12 certify that the information contained in or accompanying
13 this submission is true, accurate and complete. I am aware
14 that there are significant penalties for submitting false
information, including the possibility of fine and
imprisonment for knowing violations.

15 c. Upon receipt of Chevron’s certification, EPA, after reasonable opportunity for
16 review and comment by the Plaintiff-Intervenors, shall notify Chevron whether the requirements
17 set forth in the applicable Paragraphs have been completed in accordance with this Consent
18 Decree. The parties recognize that ongoing obligations under such Paragraphs remain and
19 necessarily continue (*e.g.*, reporting, record keeping, training, auditing requirements), and that
20 Chevron’s certification is that it is in current compliance with all such obligations.

21 i. If EPA concludes that the requirements have not been fully complied with,
22 EPA shall notify Chevron as to the activities that must be undertaken to
23 complete the applicable Paragraphs of the Consent Decree. Chevron shall
24 perform all activities described in the notice, subject to its right to invoke the
25 dispute resolution procedures set forth in Section XV (Dispute Resolution).

26 ii. If EPA concludes that the requirements of the applicable Paragraphs have been
27 completed in accordance with this Consent Decree, EPA will so certify in
28 writing to Chevron. This certification shall constitute the certification of

1 completion of the applicable Paragraphs for purposes of this Consent Decree.
2 d. Nothing in this Paragraph 236 shall preclude the United States or the Plaintiff-
3 Intervenor from seeking stipulated penalties for a violation of any of the requirements of the
4 Consent Decree regardless of whether a Certification of Completion has been issued under this
5 Paragraph 236 of the Consent Decree. In addition, nothing in this Paragraph 236 shall permit
6 Chevron to fail to implement any ongoing obligations under the Consent decree regardless of
7 whether a Certification of Completion has been issued with respect to this Paragraph 236 of the
8 Consent Decree.

9 237. At such time as Chevron believes that it has satisfied the requirements for
10 termination set forth in Paragraph 235.a. - f., Chevron shall certify such compliance and
11 completion to the United States and the Plaintiff-Intervenor in writing. Unless, within 120 days
12 of receipt of Chevron's certification under this Paragraph 237, either the United States or any
13 Plaintiff-Intervenor objects in writing with specific reasons, the Court may upon motion by
14 Chevron order that this Consent Decree be terminated. If either the United States or any
15 Plaintiff-Intervenor objects to the certification by Chevron then the matter shall be submitted to
16 the Court for resolution under Section XV (Retention of Jurisdiction/Dispute Resolution) of this
17 Consent Decree. In such case, Chevron shall bear the burden of proving that this Consent
18 Decree should be terminated.

19
20 **XIX. SIGNATORIES**

21 238. Each of the undersigned representatives certify that they are fully authorized to
22 enter into the Consent Decree on behalf of such Parties, and to execute and to bind such Parties
23 to the Consent Decree.

24
25 Dated and entered this 27th day of June, 2005.

26
27
28 UNITED STATES DI



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

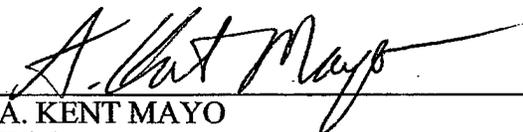
WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Chevron U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:



Date: 9.25.03

THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice



Date: 10-14-03

A. KENT MAYO
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources
Division
United States Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611

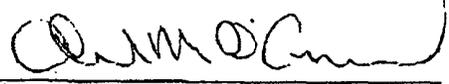
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Chevron U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

KEVIN V. RYAN
United States Attorney
Northern District of California

Date: 10/15/03



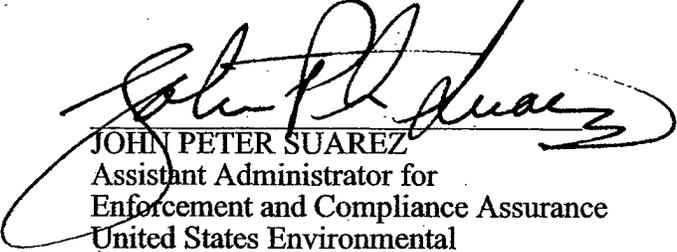
CHARLES M. O'CONNOR
Assistant United States Attorney
Northern District of California
450 Golden Gate Ave., Box 36055
San Francisco, CA 94102

1 WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Chevron
2 U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

3 FOR THE UNITED STATES
4 ENVIRONMENTAL PROTECTION AGENCY:

5 Date:

9/29/03


6 JOHN PETER SUAREZ
7 Assistant Administrator for
8 Enforcement and Compliance Assurance
9 United States Environmental
10 Protection Agency
11 Washington, D.C. 20460

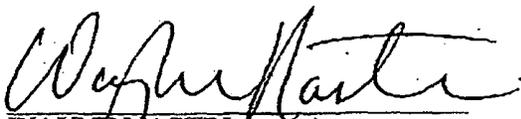
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Chevron U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY,
REGION IX:

Date: 09 OCTOBER 03



WAYNE NASTRI
Regional Administrator
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

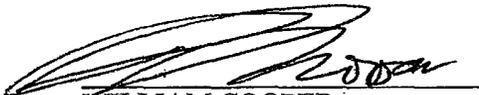
WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Chevron U.S.A. Inc.

FOR PLAINTIFF-INTERVENOR
THE STATE OF HAWAII

Date: 10/8/03


for LAURENCE K. LAU
Deputy Director
Environmental Health Administration

Date: 10-8-03


WILLIAM COOPER
Deputy Attorney General
Department of the Attorney General

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Chevron U.S.A. Inc.

FOR PLAINTIFF-INTERVENOR
THE MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

Date: 9/24/03



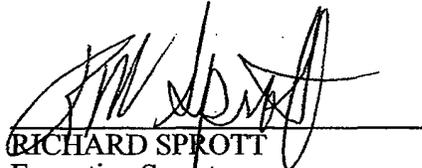
CHARLES H. CHISHOLM
Executive Director
Mississippi Department of
Environmental Quality

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Chevron U.S.A. Inc.

FOR PLAINTIFF-INTERVENOR
THE STATE OF UTAH

Date: 9/25/03


RICHARD SPROTT
Executive Secretary
Division of Air Quality

Date: 9/25/03


LENORE EPSTEIN
Assistant Attorney General
State of Utah

1
2 WE HEREBY CONSENT to the entry of the Consent Decree in United States, et
3 al. v. Chevron U.S.A. Inc.

4 FOR PLAINTIFF-INTERVENOR
5 BAY AREA AIR QUALITY
6 MANAGEMENT DISTRICT

7 Date: October 2, 2003

8 William C. Norton
9 WILLIAM C. NORTON
10 Executive Officer,
11 Air Pollution Control Officer
12 Bay Area Air Quality Management District
13 939 Ellis Street
14 San Francisco, California 94109

15 APPROVED AS TO FORM:

16 BRIAN C. BUNGER
17 District Counsel
18 Bay Area Air Quality Management District
19 939 Ellis Street
20 San Francisco, California 94109

21 Date: October 1, 2003

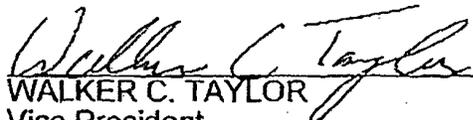
22 By: Shirley R. Edwards
23 SHIRLEY R. EDWARDS
24 Assistant Counsel
25 Bay Area Air Quality Management District
26

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Chevron U.S.A. Inc.

FOR DEFENDANT CHEVRON U.S.A. INC.

Date: Oct. 10, 2003


WALKER C. TAYLOR
Vice President
Chevron U.S.A. Inc.

Date: October 10, 2003


KENNETH L. WAGGONER
Vice President and General Counsel
Chevron Products Company

Appendix A

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX A

**DETERMINING THE OPTIMIZED ADDITION RATES OF
CATALYST ADDITIVES AT THE FCCUs**

I. PURPOSE

This Appendix defines a process by which Chevron shall determine for the FCCUs the Optimized Addition Rates for Low NOx Combustion Promoters, NOx Reducing Catalyst Additives and SO2 Reducing Additives during the Optimization Periods.

II. ESTABLISHING AN OPTIMIZED LOW NOx COMBUSTION PROMOTER ADDITION RATE

A. Overview. Establishing an Optimized Low NOx Combustion Promoter Addition Rate for the FCCUs is a three-step process: (1) establishing a minimum addition rate for the conventional combustion promoter that Chevron currently uses such that the effectiveness of the conventional combustion promoter is maintained (the "Minimum Conventional Combustion Promoter Addition Rate"); (2) replacing the conventional combustion promoter with Low NOx Combustion Promoter at an addition rate that is the functional equivalent of the Minimum Conventional Combustion Promoter Addition Rate (the "Initial Low NOx Combustion Promoter Addition Rate"); and (3) increasing the addition rate up to two times the Initial Low NOx Combustion Promoter Addition Rate if the Initial Low NOx Combustion Addition Rate is not effective (the "Optimized Low NOx Combustion Promoter Addition Rate").

B. "Effectiveness" Determinations. The effectiveness of conventional combustion promoter shall be determined by the following criteria: (1) afterburn is controlled adequately and regenerator temperature and combustion levels are adequately maintained; and (2) temperature excursions are brought under control adequately. The effectiveness of Low NOx Combustion Promoter shall be determined by those two criteria and by whether a measurable

reduction in NOx emissions occurs.

C. Establishing the Minimum Conventional Combustion Promoter Addition Rate.

Chevron shall reduce its historical usage of conventional combustion promoters to the point that the addition rate is the minimum necessary to retain the effectiveness of the conventional combustion promoter that Chevron is using ("Minimum Conventional Combustion Promoter Addition Rate").

D. Establishing the Initial Low NOx Combustion Promoter Addition Rate. Based on the activity of conventional combustion promoter historically used and the activity of the Low NOx combustion promoter, Chevron shall replace conventional combustion promoter with Low NOx Combustion Promoter at a rate that is the functional equivalent in promotion activity of the Minimum Conventional Combustion Promoter Addition Rate. This functionally equivalent rate shall be called the Initial Low NOx Combustion Promoter Addition Rate.

E. Establishing the Optimized Low NOx Combustion Promoter Addition Rate. If the Low NOx Combustion Promoter is not effective at the Initial Low NOx Combustion Promoter Addition Rate, Chevron shall increase, by up to two times, the Initial Low NOx Combustion Promoter Addition Rate. If, at two times the Initial Low NOx Combustion Promoter Addition Rate, the Low NOx Combustion Promoter is not effective, Chevron may discontinue the use of Low NOx Combustion Promoter.

III. ESTABLISHING AN OPTIMIZED NOx REDUCING CATALYST ADDITIVE ADDITION RATE

A. Overview. The Optimized NOx Reducing Catalyst Additive Addition Rate shall be determined by evaluating NOx emissions reductions and annualized costs at three different addition rates.

B. The Increments. The three addition rates or “increments” shall be:

- 1.0 Weight % NOx Reducing Catalyst Additive
- 1.5 Weight % NOx Reducing Catalyst Additive
- 2.0 Weight % NOx Reducing Catalyst Additive

C. The Procedure. Chevron shall successively add NOx Reducing Catalyst Additive at each increment set forth above. Once a steady state has been achieved at each increment, Chevron shall evaluate the performance of the NOx Reducing Catalyst Additive in terms of NOx emissions reductions and projected annualized costs. The final Optimized NOx Reducing Catalyst Additive Addition Rate shall occur at the addition rate where either:

- (1) the FCCU meets 20 ppmvd NOx (corrected to 0% O2) on a 365-day rolling average, in which case Chevron shall agree to accept limits of 20 ppmvd NOx (corrected to 0% O2) on a 365-day rolling average basis at the conclusion of the Demonstration Period; or
- (2) the total annualized cost-effectiveness of the NOx Reducing Catalyst Additive used exceeds \$10,000 per ton of NOx removed as measured from an uncontrolled baseline (as estimated based on current operating parameters as compared to operating parameters during the baseline period); or
- (3) the Incremental NOx Reduction Factor is less than 1.8, where the Incremental NOx Reduction Factor is defined as:

$$\frac{PR_i - PR_{i-1}}{CAR_i - CAR_{i-1}} \quad \text{where:}$$

PR_i = Pollutant (NOx) reduction rate at increment i in pounds per day from the baseline model

PR_{i-1} = Pollutant (NOx) reduction rate at the increment prior to increment i in pounds per day from the baseline model

CAR_i = Total Catalyst Additive Rate at increment i in pounds per day

CAR_{i-1} = Total Catalyst Additive Rate at the increment prior to increment i in pounds per day

If the conditions of either (1), (2), or (3) above are not met at any addition rate less than 2.0 Weight % NO_x Reducing Catalyst Additive, then the Optimized Addition Rate shall be 2.0 Weight % NO_x Reducing Catalyst Additive.

If an additive limits the FCCU's ability to control CO emissions to below 500 ppmvd CO corrected to 0% O₂ on an 1-hour basis and cannot be reasonably compensated for by adjusting other parameters, then the additive rate shall be reduced to a level at which the additive no longer causes such effects.

IV. ESTABLISHING AN OPTIMIZED SO₂ REDUCING CATALYST ADDITIVE ADDITION RATE

A. Overview. The Optimized SO₂ Reducing Catalyst Additive Addition Rate shall be determined by evaluating SO₂ emissions reductions at three different addition rates.

B. The Increments. The three addition rates or "increments" shall be:

- 5.0 Weight % SO₂ Reducing Catalyst Additive
- 7.5 Weight % SO₂ Reducing Catalyst Additive
- 10.0 Weight % SO₂ Reducing Catalyst Additive

C. The Procedure. Chevron shall successively add SO₂ Reducing Catalyst Additive at each increment set forth above. Once a steady state has been achieved at each increment, Chevron shall evaluate the performance of the SO₂ Reducing Catalyst Additive in terms of SO₂ emissions reductions. The final Optimized SO₂ Reducing Catalyst Additive Addition Rate shall occur at the addition rate where either:

- (1) the FCCU meets 25 ppmvd SO₂ (corrected to 0% O₂) on a 365-day rolling average and 50 ppmvd SO₂ (corrected to 0% O₂) on a 7-day rolling average, in which case Chevron shall agree to accept limits of 25 ppmvd SO₂ (corrected to 0% O₂) on a 365-day rolling average and 50 ppmvd SO₂ (corrected to 0% O₂) on a 7-day rolling average at the conclusion of the Demonstration Period;
- (2) the addition of SO₂ adsorbing catalyst additive limits the FCCU feedstock

processing rate or conversion capability in a manner that cannot be reasonably compensated for by the adjustment of other parameters, the maximum addition rate shall be reduced to a level at which the additive no longer interferes with the FCCU processing or conversion rate; provided, however, that in no case, shall the maximum addition rate be less than 5.0 weight %; or

- (3) the Incremental SO2 Pick-up Factor is less than 2.0, where the Incremental SO2 Pick-up Factor is defined as:

$$\frac{PR_i - PR_{i-1}}{CAR_i - CAR_{i-1}} \quad \text{where:}$$

PR_i = Pollutant (SO2) reduction rate at increment i in pounds per day from the baseline model

PR_{i-1} = Pollutant (SO2) reduction rate at the increment prior to increment i in pounds per day from the baseline model

CAR_i = Total Catalyst Additive Rate at increment i in pounds per day

CAR_{i-1} = Total Catalyst Additive Rate at the increment prior to increment i in pounds per day

If the conditions of either (1), (2), or (3) above are not met at any addition rate less than 10.0 weight % SO2 Reducing Catalyst Additive, then the Optimized Addition Rate shall be 10.0 weight % SO2 Reducing Catalyst Additive. In no case shall the Optimized Addition Rate shall be less than 5.0 weight % SO2 Reducing Catalyst Additive.

If an additive limits the processing rate or the conversion capability in a manner that cannot be reasonably compensated for by adjustment of other parameters, the additive level shall be reduced to a level at which the additive no longer causes such limits or effects.

If at any time during the trial, optimization and/or demonstration of SO2 additives, Chevron demonstrates that the use of SO2 reducing additive at the Richmond FCCU limits the FCCU's ability to comply with the NOx emission limits required by this Consent Decree and

cannot be reasonably compensated for by adjusting other parameters, then the additive rate shall be reduced to a level at which the additive no longer causes such effects. Chevron may, upon EPA approval, utilize the SO₂ reducing additive at an addition rate that does not affect Chevron's ability to comply with the NO_x emission limits required by this Consent Decree.

Appendix B

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX B

CHEVRON EL SEGUNDO REFINERY

Source	Maximum or Allowable Annual Heat Input Capacity	2000 Utilization Rate	2000 NOx Emission Rate	2000 NOx Emissions	2001 Utilization Rate	2001 NOx Emission Rate	2001 NOx Emissions	2000 - 2001 Average NOx Emissions	Type of data used to derive emission estimate
F-1330 (Startup July 2000)	653.0	535.1	0.005	12.3	466.8	0.002	4.7	8.5	CEMS
F-301A	375.0	288.4	0.106	133.8	220.7	0.092	89.2	111.5	CEMS
F-301B	375.0	288.7	0.106	134.2	223.9	0.092	90.4	112.3	CEMS
F-1330A (Shutdown June 2000)	375.0	164.9	0.048	34.7	0.0	0.000	0.0	17.4	CEMS
F-1330B (Shutdown June 2000)	375.0	156.5	0.053	36.5	0.0	0.000	0.0	18.3	CEMS
F-720	365.3	356.7	0.028	43.5	333.8	0.028	40.8	42.1	CEMS
Aux Boiler	342.0	192.3	0.005	3.9	171.1	0.004	2.6	3.2	CEMS
F-1100A	315.0	226.3	0.022	21.4	204.1	0.009	8.2	14.8	CEMS
F-1100B	315.0	239.5	0.021	22.2	206.7	0.009	8.4	15.3	CEMS
F-731	220.0	176.5	0.125	96.7	158.6	0.025	17.0	56.8	CEMS
F-1160	219.0	136.7	0.021	12.8	205.1	0.009	8.4	10.6	CEMS
F-301B	216.8	133.9	0.156	91.5	142.2	0.087	54.2	72.8	CEMS
F-501A	176.0	100.3	0.017	7.4	96.2	0.015	6.1	6.8	CEMS
F-501B	176.0	98.9	0.017	7.4	103.4	0.015	6.6	7.0	CEMS
F-501C	176.0	111.0	0.017	8.3	90.6	0.015	5.8	7.1	CEMS
F-420	173.1	152.6	0.008	5.4	160.9	0.007	4.7	5.0	CEMS
F-430	124.9	109.9	0.008	3.9	107.2	0.007	3.1	3.5	CEMS
F-201 (Shutdown April 2001)	118.0	73.2	0.117	37.4	74.7	0.040	13.0	25.2	CEMS
F-410	115.2	107.4	0.008	3.8	112.3	0.007	3.3	3.5	CEMS
F-1610	102.0	73.7	0.151	48.7	75.6	0.093	30.7	39.7	CEMS
F-201A (Startup May 20001)	82.8	0.0	0.000	0.0	60.5	0.002	0.5	0.3	CEMS
F-440	80.5	49.3	0.008	1.7	55.1	0.007	1.6	1.7	CEMS
F-1000	77.0	20.8	0.210	19.1	18.4	0.215	17.4	18.2	CEMS
F-1010	70.0	23.4	0.155	15.9	18.2	0.142	11.3	13.6	CEMS
F-610A/B	63.0	40.2	0.081	14.3	37.2	0.097	15.8	15.0	CEMS
F-620A/B	63.0	37.6	0.081	13.4	35.3	0.116	17.9	15.7	CEMS
F-510A/B	57.0	30.6	0.120	16.1	23.3	0.131	13.4	14.8	CEMS
F-520A/B	57.0	38.4	0.120	20.2	36.5	0.131	20.9	20.6	CEMS
F-530A/B	57.0	23.1	0.157	15.9	26.1	0.160	18.3	17.1	CEMS
F-540A/B	57.0	36.1	0.156	24.7	28.2	0.156	19.9	22.3	CEMS
F-1660	44.0	33.6	0.053	7.7	38.1	0.030	4.9	6.3	CEMS
Total	5279.8			914.7			539.3	727.0	

(As of Jan 2000)

APPENDIX B

CHEVRON HAWAII REFINERY

Source	Maximum or Allowable Annual Heat Input Capacity	2000 Utilization Rate	2000 NOx Emission Rate	2000 NOx Emissions	2001 Utilization Rate	2001 NOx Emission Rate	2001 NOx Emissions	2000 - 2001 Average NOx Emissions	Type of data used to derive emission estimate
	mmBTU/hr (HHV)	mmBTU/hr (HHV)	lb/mmBTU (HHV)	tons/year	mmBTU/hr (HHV)	lb/mmBTU (HHV)	tons/year	tons/year	(i.e., emission factor, stack test, or CEMS data)
F-5201 Gas	220.0	17.9	0.167	13.1	28.0	0.167	20.4	16.8	AP-42
F-5201 Liq		52.2	0.213	48.8	45.9	0.213	42.9	45.8	AP-42
F-5202 Gas	160.8	14.1	0.167	10.3	28.0	0.167	20.4	15.4	AP-42
F-5202 Liq		30.5	0.213	28.5	40.4	0.213	37.8	33.1	AP-42
F-5203 Gas	160.8	18.0	0.167	13.1	16.3	0.167	11.9	12.5	AP-42
F-5203 Liq		30.4	0.213	28.4	24.6	0.213	23.0	25.7	AP-42
F-5103 Liq	151.0	116.5	0.184	93.9	118.9	0.184	95.8	94.8	Stack Test 10/25/2000
F-5103 Gas (pilot)		0.2	0.184	0.1	0.2	0.184	0.2	0.2	Stack Test 10/25/2000
F-5153 Liq	63.0	48.6	0.184	39.2	49.6	0.184	40.0	39.6	Stack Test 10/25/2000
F-5153 Gas (Pilot)		0.1	0.184	0.1	0.1	0.184	0.1	0.1	Stack Test 10/25/2000
F-5300	61.0	8.8	0.098	3.8	17.0	0.098	7.3	5.5	AP-42
Total	816.6			279.2			299.7	289.5	

APPENDIX B

CHEVRON PASCAGOULA REFINERY

Source	Maximum or Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	2000 - 2001 Average NOx Emissions tons/year	Type of data used to derive emission estimate (i.e., emission factor, stack test, or CEMS data)
F-8620	780	539.0	0.110	259.7	627.4	0.110	302.3	281.0	2003 Stack Test
F-6410	730	604.7	0.116	307.2	589.3	0.116	299.4	303.3	2000 Stack Test
F-2440/50/60/70/80/90	550	337.7	0.068	101.0	331.9	0.068	99.3	100.2	2000 Stack Test
F-1501/2/3	545	429.2	0.148	278.2	422.7	0.148	274.0	276.1	2003 Stack Test
F-6550/60/70/80	417	265.7	0.122	142.0	210.2	0.122	112.3	127.2	2003 Portable Stack Measurement
F-6101	400	295.3	0.372	481.2	338.8	0.372	552.0	516.6	2003 Stack Test
F-1101	380.6	305.6	0.116	155.3	313.0	0.116	159.0	157.1	2003 Stack Test
F-6950/60/70/80	328	248.8	0.100	109.0	261.0	0.100	114.3	111.6	AP-42
F-6250	304	211.0	0.100	92.4	196.7	0.100	86.2	89.3	AP-42
F-8400	275	202.4	0.058	51.4	232.4	0.058	59.0	55.2	2003 Stack Test
F-2103	257	121.5	0.360	191.6	82.1	0.360	129.5	160.5	Vendor Estimate
F-2102	257	107.2	0.360	189.0	57.6	0.360	90.8	129.9	Vendor Estimate
F-2101	257	106.5	0.360	167.9	104.7	0.360	165.1	166.5	Vendor Estimate
F-1102	231	195.6	0.116	99.4	184.4	0.116	93.7	96.5	2003 Stack Test
F-5337C	209.7	201.3	0.060	52.9	195.0	0.060	51.2	52.1	2003 Stack Test
F-8300C	203.5	153.0	0.061	40.9	142.8	0.061	38.2	39.5	2003 Stack Test
F-8300B	203.5	146.4	0.059	37.8	135.4	0.059	35.0	36.4	2003 Stack Test
F-8300A	203.5	150.0	0.061	40.1	144.1	0.061	38.5	39.3	2003 Stack Test
F-6102	200	167.6	0.372	273.1	192.8	0.372	314.1	293.6	2003 Stack Test
F-1601	165	84.4	0.100	37.0	91.9	0.100	40.3	38.6	2003 Stack Test
F-8560	150	70.3	0.100	30.8	69.1	0.100	30.3	30.5	AP-42
F-1305	140	109.3	0.100	47.9	108.9	0.100	47.7	47.8	AP-42
F-5327C	131	129.0	0.050	28.3	130.8	0.050	28.6	28.4	2003 Stack Test
F-6260	125	61.7	0.100	27.0	72.1	0.100	31.6	29.3	AP-42
F-1304	100	97.2	0.100	42.6	85.7	0.100	37.5	40.1	AP-42
F-5337A	97.2	78.4	0.100	34.3	82.8	0.100	36.3	35.3	AP-42
F-5337B	90.8	92.3	0.027	10.9	61.2	0.027	7.2	9.1	2003 Stack Test
F-5327B	80.4	47.5	0.036	11.5	69.8	0.036	11.0	11.3	2003 Stack Test
F-5327A	80.4	44.9	0.029	6.0	40.3	0.029	5.1	5.6	2003 Stack Test
F-1531	72	26.3	0.029	5.7	39.7	0.029	5.0	5.4	2003 Stack Test
F-8130	65	30.1	0.100	11.5	29.3	0.100	12.8	12.2	AP-42
F-8120	65	25.0	0.100	13.2	37.9	0.100	16.6	14.9	Construction Permit
F-8110	65	26.1	0.100	11.0	29.9	0.100	13.1	12.0	Construction Permit
F-6230	55	38.0	0.100	16.6	34.5	0.100	15.1	13.3	Construction Permit
F-6210	55	36.6	0.100	16.0	39.2	0.100	17.2	16.9	AP-42
F-8510	55	25.1	0.152	16.7	31.9	0.152	14.0	15.0	AP-42
F-2201	48	26.5	0.220	25.5	29.1	0.220	19.4	18.0	Construction Permit
F-1532	42	30.1	0.100	13.2	28.5	0.100	12.5	12.8	2003 Stack Test
Total	8513.6	3467.3	3445.6	3456.4					

APPENDIX B

CHEVRON RICHMOND REFINERY

Source	Maximum or Allowable Annual Heat Input Capacity		2000 Utilization Rate	2000 NOx Emission Rate	2000 NOx Emissions	2001 Utilization Rate	2001 NOx Emission Rate	2001 NOx Emissions	2000 - 2001 Average NOx Emissions	Type of data used to derive emission estimate (i.e., emission factor, stack test, or CEMS data)
	mmBTU/hr (HHV)	mmBTU/hr (HHV)								
F-365	847.0	440.2	440.2	0.257	485.5	367.5	0.257	529.2	512.4	Source Test (Apr 2001)
F-305	790.5	485.2	485.2	0.21, 0.019	390.1	478.9	0.017	35.5	212.8	CEMS data (Jul-Dec 2000)
F-1100B	405.0	280.4	280.4	0.170	208.8	308.6	0.17, 0.028	197.7	203.2	Source Test (Dec 2000)
F-1100A	391.0	264.9	264.9	0.170	197.2	304.1	0.17, 0.024	194.5	185.9	Source Test (Nov 2000)
F-1160	336.0	215.9	215.9	0.200	189.1	231.8	0.20, 0.0178	140.2	164.7	Source Test (Nov 2000)
F-730	276.0	117.2	117.2	0.140	71.9	95.4	0.152, 0.023	21.7	46.8	CEMS data (Jul 2000 - Feb 2001)
Blr #7	272.0	141.3	141.3	0.41, 0.028	126.8	143.1	0.026	16.3	71.6	Source Test (May 2000)
F-731	260.0	110.3	110.3	0.141	68.1	76.5	0.165, 0.025	19.2	43.6	CEMS data (Jul 2000 - Feb 2001)
F-136	252.0	117.5	117.5	0.034	17.5	136.4	0.038	22.7	20.1	CEMS data (Jul 2000 - Dec 2001)
Blr #5	237.0	81.5	81.5	0.028	10.0	59.0	0.026	6.7	8.4	CEMS data (Jul 2000 - Dec 2001)
Blr #3	236.0	97.8	97.8	0.68, 0.027	20.8	98.2	0.026	11.2	16.0	CEMS data (Jul 2000 - Dec 2001)
Blr #4	235.0	103.3	103.3	0.29, 0.027	102.7	109.4	0.027	12.9	57.8	Source Test on Blr #1 (Apr 2000)
Blr #1	233.0	119.6	119.6	0.29, 0.027	61.3	87.6	0.027	10.4	35.8	Source Test (Apr 2000)
F-550	198.0	114.1	114.1	0.147	73.5	112.5	0.147	74.0	73.7	Source Test (July 2001)
F-3550	186.7	95.0	95.0	0.147, 0.040	21.6	122.5	0.031	16.6	19.1	Source Test on 5 Rhen (July 2001)
F-3560	170.0	44.4	44.4	0.147, 0.040	8.4	63.0	0.031	8.6	9.0	Source Test on 5 Rhen (July 2001)
F-3570	162.0	55.0	55.0	0.147, 0.042	11.5	65.0	0.033	9.4	10.5	Source Test on 5 Rhen (July 2001)
F-210A/B	144.0	53.6	53.6	0.190	44.6	58.1	0.190	48.4	46.5	Source Test (Jan 2001)
F-560	129.0	98.8	98.8	0.147	63.6	106.0	0.147	68.2	65.9	Source Test (July 2001)
F-1610	127.5	54.9	54.9	0.120	28.9	44.5	0.120	23.4	26.1	Source Test (Nov 2001)
F-447	125.0	91.7	91.7	0.208	83.5	84.9	0.208	77.3	80.4	Source Test (July 2001)
F-247	121.0	56.6	56.6	0.190	47.1	54.2	0.190	45.1	46.1	Source Test (Jan 2001)
F-710	115.0	72.4	72.4	0.154	48.8	93.5	0.154	63.1	56.0	Source Test (Apr 2001)
F-410	113.0	79.8	79.8	0.206	72.7	82.4	0.208	75.1	73.9	Source Test (July 2001)
F-570	78.0	44.8	44.8	0.147	28.8	49.9	0.147	32.1	30.5	Source Test on 5 Rhen (July 2001)
F-3580	77.0	29.8	29.8	0.147, 0.042	6.9	34.2	0.033	4.9	5.9	CEMS data (Jul 2000 - Dec 2001)
F-1360	73.1	38.8	38.8	0.016	2.7	47.8	0.013	2.7	2.7	Source Test (Apr 2001)
F-410	68.0	26.0	26.0	0.140	15.9	31.8	0.140	19.5	17.7	Source Test (Apr 2001)
F-610	68.0	20.7	20.7	0.150	13.6	24.8	0.15, 0.032	6.4	10.0	Source Test (Oct 2001)
F-620	68.0	15.8	15.8	0.150	10.4	21.5	0.15, 0.032	5.5	7.9	Source Test (Oct 2001)
F-630	68.0	1.8	1.8	0.150	1.2	0.0	0.15, 0.032	0.0	0.6	Source Test (Oct 2001)
F-1750	62.7	12.6	12.6	0.016	0.9	23.3	0.015	1.5	1.2	CEMS data (Jul 2000 - Dec 2001)
F-610	61.0	17.8	17.8	0.140	10.9	16.7	0.140	10.2	10.6	Source Test (Oct 2001)
F-520	61.0	18.6	18.6	0.140	11.4	27.2	0.140	16.7	14.0	Source Test (Oct 2001)
F-530	61.0	24.7	24.7	0.140	15.1	24.3	0.140	14.9	15.0	Source Test (Oct 2001)
F-1660	55.0	0.0	0.0	0.000	0.0	0.0	0.000	0.0	0.0	n/a
F-680	51.0	27.4	27.4	0.147	17.6	31.5	0.147	20.3	18.9	Source Test (July 2001)
F-100	50.5	12.0	12.0	0.16, 0.029	7.3	12.6	0.033	1.8	4.6	Source Test (May 2000)
F-120	50.5	12.2	12.2	0.15, 0.029	7.9	13.1	0.030	1.7	4.8	Source Test (May 2000)
F-420	45.1	31.1	31.1	0.140	19.5	26.5	0.140	16.2	17.9	Source Test (Apr 2001)
F-320	42.3	0.0	0.0	0.180	0.0	0.2	0.160	0.1	0.1	Source Test (Feb 2001)
F-330	42.3	0.0	0.0	0.000	0.0	0.0	0.000	0.0	0.0	n/a
F-340	41.8	23.3	23.3	0.180	18.4	22.9	0.18, 0.022	4.3	11.4	Source Test (Aug 2000)
Total	7475.0				2653.7			1886.5	2270.1	

APPENDIX B

CHEVRON SALT LAKE CITY REFINERY

Source	Maximum or Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	2000 - 2001 Average NOx Emissions tons/year	Type of data used to derive emission estimate (i.e., emission factor, stack test, or CEMS data)
F-7001	139.2	40.9	0.098	17.6	39.9	0.098	17.1	17.3	AP-42
F-32033	96.0	3.0	0.049	0.6	26.1	0.049	5.6	3.1	AP-42
F-2101	90.8	71.7	0.028	8.8	71.6	0.028	8.8	8.8	February 2002 Stack Test
F-3617 Gas	90.0	60.0	0.049	12.9	49.7	0.049	10.7	11.8	AP-42
F-3617 Oil		0.4	0.367	0.7	0.4	0.367	0.7	0.7	AP-42
F-2102	84.4	66.6	0.028	8.1	66.5	0.028	8.1	8.1	February 2002 Stack Test
F-3224	74.7	73.3	0.394	126.4	58.5	0.394	100.8	113.6	October 2000 Stack Test
F-11001 Gas	55.8	36.0	0.565	89.1	32.5	0.565	80.4	84.8	Based on F-11002 March 2003 Stack Test
F-11001 Oil		0.2	0.565	0.4	0.0	0.000	0.0	0.2	Based on F-11002 March 2003 Stack Test
F-11002 Gas	55.8	36.0	0.565	89.1	32.5	0.565	80.4	84.8	March 2003 Stack Test
F-11002 Oil		0.2	0.565	0.4	0.0	0.000	0.0	0.2	March 2003 Stack Test
F-11004 Gas	54.1	37.7	0.429	70.8	29.1	0.429	54.7	62.7	Based on F-11003 March 2003 Stack Test
F-11004 Oil		0.1	0.429	0.1	0.0	0.000	0.0	0.1	Based on F-11003 March 2003 Stack Test
F-3501	50.1	31.4	0.098	13.5	29.4	0.098	12.6	13.1	AP-42
F-11003 Gas	44.7	37.7	0.429	70.8	29.1	0.429	54.7	62.7	March 2003 Stack Test
F-11003 Oil		0.1	0.429	0.1	0.0	0.000	0.0	0.1	March 2003 Stack Test
F-3502	43.1	25.4	0.098	10.9	26.1	0.098	11.2	11.1	AP-42
Total	878.7			520.1			445.9	483.0	

Appendix C

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX C

PREDICTIVE EMISSIONS MONITORING SYSTEMS FOR HEATERS AND BOILERS WITH CAPACITIES BETWEEN 150 AND 100 mmBTU/HR

A Predictive Emissions Monitoring Systems ("PEMS") is a mathematical model that predicts the gas concentration of NO_x in the stack based on a set of operating data. Consistent with the CEMS data frequency requirements of 40 C.F.R. Part 60, the PEMS shall calculate a pound per million BTU value at least once every 15 minutes, and all of the data produced in a calendar hour shall be averaged to produce a calendar hourly average value in pounds per million BTU.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represent an ideal case. However at a minimum, each PEMS shall include continuous monitoring for at least items 3-5 below. Chevron will identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available)
2. Fuel Density, Composition and/or specific gravity - On line readings (it may be possible if the fuel gas does not vary widely, that a grab sample and analysis may be substituted)
3. Fuel flow rate
4. Firebox temperature
5. Percent excess oxygen
6. Airflow to the firebox (if known or possibly estimated)

7. Process variable data - steam flow rate, temperature and pressure - process stream flow rate, temperature & pressure, etc.

Computers & Software:

Relevant data will be collected and stored electronically, using computers and software.

The hardware and software specifications will be specified in the source-specific PEMS.

Calibration and Setup:

1. Data will be collected for a period of 7 to 10 days of all the data that is to be used to construct the mathematical model. The data will be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;
2. A "Validation" analysis shall be conducted to make sure the system is collecting data properly;
3. Stack Testing to develop the actual emissions data for comparison to the collected parameter data; and
4. Development of the mathematical models and installation of the model into the computer.

The elements of a monitoring protocol for a PEMS shall include:

1. Applicability

- a. Identify source name, location, and emission unit number(s);
- b. Provide expected dates of monitor compliance demonstration testing.

2. Source Description

- a. Provide a simplified block flow diagram with parameter monitoring points and

emission sampling points identified (e.g., sampling ports in the stack);

- b. Provide a discussion of process or equipment operations that are known to significantly affect emissions or monitoring procedures (e.g., batch operations, plant schedules, product changes).

3. Control Equipment Description

- a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (e.g., sampling ports in the stack);
- b. List monitored operating parameters and normal operating ranges;
- c. Provide a discussion of operating procedures that are known to significantly affect emissions (e.g., catalytic bed replacement schedules).

4. Monitoring System Design

- a. Install, calibrate, operate, and maintain a continuous PEMS;
- b. Provide a general description of the software and hardware components of the PEMS, including manufacturer, type of computer, name(s) of software product(s), monitoring technique (e.g., method of emission correlation). Manufacturer literature and other similar information shall also be submitted, as appropriate;
- c. List all elements used in the PEMS to be measured (e.g., pollutant(s), other exhaust constituent(s) such as O₂ for correction purposes, process parameter(s), and/or emission control device parameter(s));
- d. List all measurement or sampling locations (e.g., vent or stack location, process parameter measurement location, fuel sampling location, work stations);

- e. Provide a simplified block flow diagram of the monitoring system overlaying process or control device diagram (could be included in Source Description and Control Equipment Description);
- f. Provide a description of sensors and analytical devices (e.g., thermocouple for temperature, pressure diaphragm for flow rate);
- g. Provide a description of the data acquisition and handling system operation including sample calculations (e.g., parameters to be recorded, frequency of measurement, data averaging time, reporting units, recording process);
- h. Provide checklists, data sheets, and report format as necessary for compliance determination (e.g., forms for record keeping).

5. Support Testing and Data for Protocol Design

- a. Provide a description of field and/or laboratory testing conducted in developing the correlation (e.g., measurement interference check, parameter/emission correlation test plan, instrument range calibrations);
- b. Provide graphs showing the correlation, and supporting data (e.g., correlation test results, predicted versus measured plots, sensitivity plots, computer modeling development data).

6. Initial Verification Test Procedures

- a. Perform an initial relative accuracy test (RA test) to verify the performance of the PEMS for the equipment's operating range. The PEMS must meet the relative accuracy requirement of the applicable Performance Specification in 40 C.F.R. Part 60, Appendix B. The test shall utilize the test methods of 40 CFR Part 60, Appendix

- A;
- b. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation, and typical of the anticipated range of operation, test the selected parameter for three RA test data sets at the low range, three at the normal operating range and three at the high operating range of that parameter, for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration;
 - c. Maintain a log or sampling report for each required stack test listing the emission rate;
 - d. Demonstrate the ability of the PEMS to detect excessive sensor failure modes that would adversely affect PEMS emission determination. These failure modes include gross sensor failure or sensor drift;
 - e. Demonstrate the ability to detect sensor failures that would cause the PEMS emissions determination to drift significantly from the original PEMS value;
 - f. The PEMS may use calculated sensor values based upon the mathematical relationships established with the other sensors used in the PEMS. Establish and demonstrate the number and combination of calculated sensor values which would cause PEMS emission determination to drift significantly from the original PEMS value.

7. Quality Assurance Plan

- a. Provide a list of the input parameters to the PEMS (e.g., transducers, sensors, gas chromatograph, periodic laboratory analysis), and a description of the sensor

- validation procedure (e.g., manual or automatic check);
- b. Provide a description of routine control checks to be performed during operating periods (e.g., preventive maintenance schedule, daily manual or automatic sensor drift determinations, periodic instrument calibrations);
 - c. Provide minimum data availability requirements and procedures for supplying missing data (including specifications for equipment outages for QA/QC checks);
 - d. List corrective action triggers (e.g., response time deterioration limit on pressure sensor, use of statistical process control (SPC) determinations of problems, sensor validation alarms);
 - e. List trouble-shooting procedures and potential corrective actions;
 - f. Provide an inventory of replacement and repair supplies for the sensors;
 - g. Specify, for each input parameter to the PEMS, the drift criteria for excessive error (e.g., the drift limit of each input sensor that would cause the PEMS to exceed relative accuracy requirements);
 - h. Conduct a quarterly electronic data accuracy assessment tests of the PEMS;
 - i. Conduct semiannual RA tests of the PEMS. Annual RA tests may be conducted if the most recent RA test result is less than or equal to 7.5%. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation and typical of the anticipated range of operation, test the selected parameter for three RA test data pairs at the low range, three at the normal operating range, and three at the high operating range of that parameter for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in

duration.

8. PEMS Tuning

- a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed.
- b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMS model are not changed.

Appendix D

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX D

NSPS J Compliance Schedule for Heaters and Boilers

	Source	Compliance Date ¹
Pascagoula	Crude I F-1101 Crude II F-6101	3/31/08 3/31/05
Hawaii	Boilers 1,2,3 FCC F-5300 Isom F-5930 Isom F-5950 H2 F-5700 H2 F-5600	AMP submittal by 12/31/05 12/31/05

APPENDIX D

NSPS J Compliance Schedule for Heaters and Boilers

	Source	Compliance Date ¹
Salt Lake	Alky F-3617 F-11001 F-11002 F-11003 F-11004 F-32021 F-32023 F-32024 F-71010 F-71030 F-35001 F-35002 F-35003 F-70001	AMP submittal by 12/31/09 12/31/09
El Segundo	Coker Feed Heater F-501 B/C CCR Heaters F-410, 420, 430, 440	AMP submittal by 12/31/04 AMP submittal by Date of Entry

APPENDIX D

NSPS J Compliance Schedule for Heaters and Boilers

	Source	Compliance Date ¹
Richmond	4 Crude F-1100A 4 Crude F-1100B 4 Cat F-3550 5 Cat F-550 5 NHT F-447 DHT F-1610 JHT F247 TKC F-410 TKC F-420 TKN/Isomax F-510 TKN/Isomax F-730 TKN/Isomax F-731 SDA F-100 SDA F-135 H2A F-305 H2B F-355 LNC F-1200 LNHF F-1360 HNC F-1550 Poly F-651 Poly F-661	AMP submittal by 12/31/04

¹ Where Appendix D refers to an AMP submittal date rather than a final compliance date, Chevron will submit an alternative monitoring plan (AMP) application for the listed device by the date specified, and the unit shall become an affected facility on the date that Chevron receives approval of the AMP.

Appendix E

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX E

NSPS J Compliance Schedule for Other Identified Equipment

	Source	Compliance Date
Hawaii	Cogeneration Unit's Turbines (3) & Duct Burners (3)	Date of Entry
Salt Lake	Supplemental Fuel Input to the Sulfur Plant Tail Gas Incinerator (1)	Date of Entry
El Segundo	Cogeneration Units' Duct Burners (3)	Date of Entry
	Soil Vapor Incinerators (3)	AMP submittal by Date of Entry
	Thermal Oxidizers (2)	AMP submittal by 12/31/04

APPENDIX E

NSPS J Compliance Schedule for Other Identified Equipment

	Source	Compliance Date¹
Richmond	Cogeneration Units' Turbines (2) Cogeneration Units' Duct Burners (2) Thermal Oxidizers (6) Marine Loading Vapor Recovery (MVR) Emission Reduction Device (1) Thermal Oxidizer (1)	AMP submittal by 12/31/04 Date of Entry AMP submittal by 12/31/04 AMP submittal by 12 months after startup

¹ Where Appendix E refers to an AMP submittal date rather than a final compliance date, Chevron will submit an alternative monitoring plan (AMP) application for the listed device by the date specified, and the unit shall become an affected facility on the date that Chevron receives approval of the AMP.

Appendix F

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX F

List of Flares

Location	Flare
El Segundo	Alkylation
El Segundo	Ammonia
El Segundo	Coker
El Segundo	FCC
El Segundo	Isomax
El Segundo	LSFO
Hawaii	Area #1
Hawaii	Area #2
Pascagoula	#1
Pascagoula	#2
Pascagoula	#3
Pascagoula	#4
Pascagoula	#5
Pascagoula	#6
Pascagoula	#7
Richmond	Alky-Poly
Richmond	D&R
Richmond	FCC
Richmond	LSFO High Level
Richmond	North Isomax
Richmond	RLOP
Richmond	South Isomax
Richmond	SRU
Salt Lake	Alkylation
Salt Lake	Coker
Salt Lake	FCC

Appendix G

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

OMITTED

Appendix H

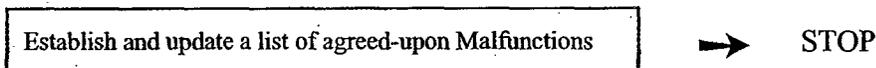
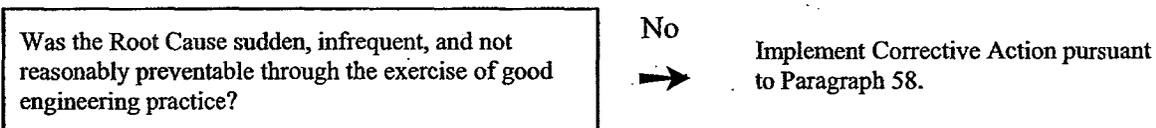
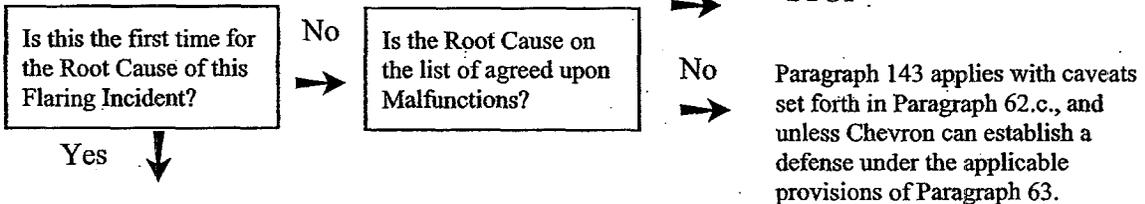
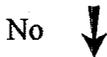
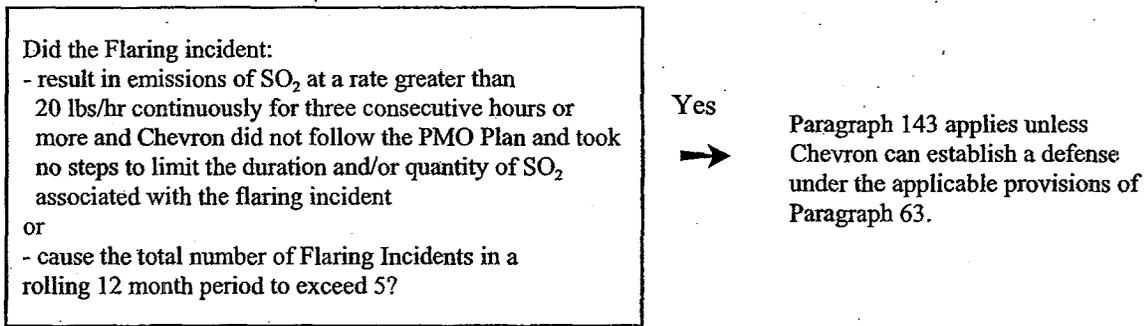
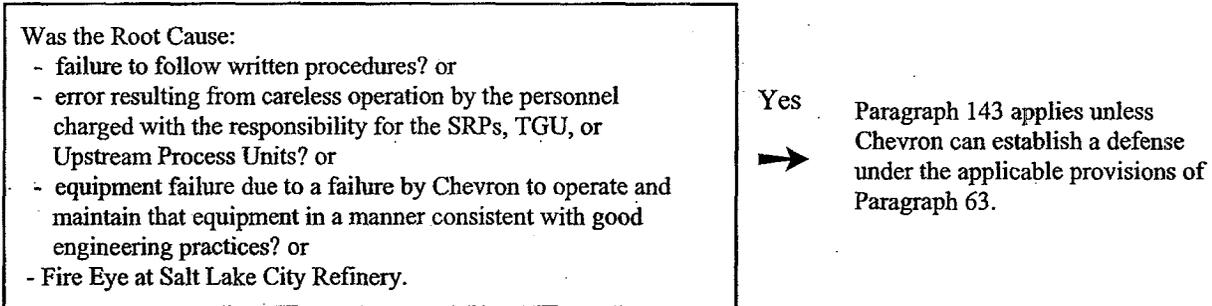
to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX H

LOGIC DIAGRAM FOR PARAGRAPHS 60-63

ALL ACID GAS FLARING/ TAIL GAS INCIDENTS



Appendix I

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

OMITTED

Appendix J

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX J

STUDY OF BREAKTHROUGH IN DUAL CARBON CANISTERS

1. Chevron's study of dual carbon canisters shall be designed to determine the concentration of VOCs or benzene that may be emitted from the primary (lead) carbon canister in a dual series before VOCs and/or benzene above background are emitted from the secondary (tail) carbon canister.

2. Chevron shall select a total of ten dual carbon canisters from its Richmond, El Segundo, Pascagoula, Salt Lake City, and Hawaii Refineries. In making the selection, Chevron shall review the frequency with which each primary carbon canister historically has been changed out and include in the study, to the extent possible, dual canister systems in which the life expectancy of the primary canisters vary. Chevron shall include, if possible, at least five dual carbon canisters where the life expectancy of the primary canister is approximately one month or less.

3. Chevron shall submit to EPA and the appropriate Plaintiff-Intervenor a study proposal that identifies the location and size of each of the selected dual carbon canisters and the historical life expectancy of the primary canister in each series. The parties shall endeavor to come to an agreement informally. Unless EPA provides comments within ninety (90) days after receipt of Chevron's proposal, Chevron may immediately thereafter commence the study ("Study Commencement") and shall notify EPA and the appropriate Plaintiff-Intervenor of the date of such Study Commencement.

4. By no later than seven days after Study Commencement, Chevron shall monitor each of the selected dual carbon canister systems for breakthrough between the primary and

secondary carbon canisters and for emissions from the secondary canister. Thereafter, Chevron shall monitor for breakthrough between the primary and secondary canisters in accordance with the frequency specified in 40 C.F.R. § 61.354(d).

5. On the first monitoring occasion in which breakthrough between the primary and secondary canister reaches 50 ppm or greater of VOCs or 5 ppm benzene, Chevron shall monitor, on that same day, emissions from the secondary canister. On a daily basis thereafter, Chevron shall monitor emissions from both the primary and secondary canister.

6. Within eight (8) hours of detecting VOC or benzene emissions above background from the secondary canister under Paragraph 5, Chevron shall replace the original primary canister with a fresh carbon canister (the original secondary carbon canister will then become the new primary carbon canister and the fresh carbon canister will become the secondary canister). The provisions of this Appendix J (not Paragraph 72.e) shall apply to the timing of the replacement of any primary canister that is a subject of this study, for so long as the carbon canister is monitored for purposes of the study. After the carbon canister no longer is monitored for purposes of this Study, the provisions of Paragraph 72.e shall again govern the timing of the replacement of the primary canisters, unless and until EPA redefines the meaning of "breakthrough" under Paragraph 72.c and pursuant to Paragraph 10 of this Appendix J.

7. Contemporaneously with each monitoring event undertaken pursuant to this Appendix J, Chevron shall maintain a written record of the time, date, and monitoring results.

8. For each dual carbon canister included in this study, Chevron shall conduct the monitoring specified in Paragraph 5 for at least two years.

9. Chevron shall submit a report of its Study under this Appendix J to EPA and the

appropriate Plaintiff-Intervenor within ninety (90) days of completing that study . Such report shall include, but is not limited to, all monitoring data, the replacement dates of the primary carbon canisters, and Chevron's recommendations regarding the concentration of VOCs or benzene that may be emitted from the primary canister in a dual series before VOCs and/or benzene above background are emitted from the secondary canister. By no later than sixty (60) days after receipt of the report, EPA and Chevron jointly shall evaluate the breakthrough limits set forth in Paragraph 72.c and assess whether any revisions are necessary.

10. Based on data supplied pursuant to Paragraph 81.b, including data under this Appendix J, and other relevant and available information, EPA may, in consultation with Chevron, determine that a revised definition of breakthrough is a more appropriate definition of breakthrough under Paragraph 72.c of the Consent Decree for all or a subset of the carbon canister systems employed at Chevron's Refineries. Any such revised definition shall apply (in lieu of the definition in Paragraph 72.c) thirty days after notice of such determination, unless that determination is subject to Dispute Resolution under Section XV of the Consent Decree.

Appendix K

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX K

Sustainable Skip Period Monitoring Program

For purposes of this Consent Decree, the following skip rules shall apply to Chevron's Salt Lake City and Richmond Refineries in lieu of 40 C.F.R. § 63.168(d)(2) - (4) and 40 C.F.R. § 60.483-2(b)(2) - (3).

1. Chevron may move to less frequent monitoring on a unit-by-unit basis at the Salt Lake City and Richmond Refineries using the following criteria:

a. At process units that have less than 2 percent leaking valves for 2 consecutive months, the owner or operator shall monitor each valve once every quarter, beginning with the next quarter.

b. After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, the owner or operator may elect to monitor each valve once every 2 quarters.

c. After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, the owner or operator may elect to monitor each valve once every 4 quarters.

2. Chevron must return to more frequent monitoring on a unit-by-unit basis at the Salt Lake City and Richmond Refineries using the following criteria:

a. If a process unit on a quarterly, semi-annual or annual monitoring schedule has a leak percentage greater than or equal to 2 percent in any single detection period, the owner or operator shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

b. If a process unit on a semi-annual or annual monitoring schedule has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, the owner or operator shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

c. If a process unit on an annual monitoring schedule has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, the owner or operator shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

Appendix L

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX L

Federal Diesel Emissions Reduction SEPs

Chevron shall develop and satisfactorily complete implementation of Federal diesel emissions reduction SEPs in accordance with the following:

A. Allocation: The \$600,000 to be expended on Federal diesel emissions reduction SEPs shall be allocated as follows:

1. Chevron shall spend no less than \$300,000 to implement Federal diesel emissions reduction SEPs in the general area where Chevron's El Segundo Refinery is located.
2. Chevron shall spend no less than \$300,000 to implement Federal diesel emissions reduction SEPs in the general area where Chevron's Hawaii Refinery is located.

B. Schedule: Within one year of the Date of Entry of the Consent Decree, Chevron shall submit a Statement of Work ("SOW") for each Federal diesel emissions reduction SEP that it proposes to perform, which shall include a description of how the SEP meets the criteria in this Appendix, a schedule for development and implementation, and an estimated cost. Each SOW shall be subject to approval by EPA, after consultation with the appropriate state and local authorities. Chevron shall complete implementation of the approved SOWs by no later than three years from the Date of Entry.

C. Project Criteria: Each Federal diesel emissions reduction SEP shall satisfy each of the following criteria:

1. It shall involve the retrofit of high-emitting, in-service heavy duty diesel vehicles with emissions control equipment or the replacement of their engines in order to reduce emissions of particulates and ozone precursors.
2. It shall include as a goal the creation of benefits to sensitive populations, such as children, that are otherwise exposed to particulate emissions and ozone precursors from such vehicles. Examples of projects consistent with this criterion include the retrofit or replacement of diesel engines in school buses and/or municipal fleets.
3. It shall cover the hardware and installation costs, and may provide also for incremental maintenance costs and/or costs of repairs on such hardware for a period of up to four years after installation.
4. It shall cover fleets for which the affected municipality, school district, other local governmental entity, or other owner/operator has committed: (i) to maintain any equipment installed in connection with the SEP during and after completion of the SEP; (ii) to use ultra low-sulfur diesel fuel with the affected vehicles during and after completion of the SEP; and (iii) to the extent feasible, to take steps to achieve additional emissions reduction benefits in

connection with the project, such as by implementing an idle control program.

5. It shall involve vehicles that are operated an average of at least four days per week. For vehicles operated on a seasonal basis, the four-day-per-week minimum threshold under the previous sentence shall apply during the season(s) in which the vehicles are operated.

6. An affected municipality, school district, other local government entity, or other owner/operator whose fleet will be retrofitted using SEP funds may also propose the use of additional SEP funds for (a) the procurement of tanks or other infrastructure required to enable that fleet to obtain and use ultra low-sulfur diesel fuel ("ULSD") and (b) offset of higher fuel costs incurred by that entity that result from the requirement to use ULSD by the retrofitted fleet. Use of SEP funds for these ULSD-related purposes may be permissible up to June 1, 2006. Priority shall be given to proposals for which additional funding for ULSD-related costs is provided by other sources.

D. Reservation: EPA reserves the right to reject all or part of a project plan that could be funded by EPA under Section 103 of the Clean Air Act, or that is otherwise inconsistent with EPA SEP Policy, applicable EPA guidance, or any other provision of law.

Appendix M

to Consent Decree

United States, et al. v. Chevron U.S.A. Inc.

APPENDIX M

FACILITY- AND COMMUNITY-SPECIFIC SEPs

Chevron shall satisfactorily complete the following SEPs:

I. Salt Lake City Refinery

A. Description: Chevron will install and operate an odor control and emissions reduction project relating to the Alkylation process at its Salt Lake City Refinery. Specifically, Chevron will install and operate skid-mounted equipment and associated piping and utilities to eliminate odors and airborne emissions of H₂SO₄, KOH, and HF from the KOH regenerator effluent.

B. Environmental/Community Benefit: Completion of this project will reduce odor problems associated with current neutralization activities and reduce airborne emissions of H₂SO₄, KOH, and HF.

C. Schedule: Chevron shall complete construction and begin operation of this project by no later than June 30, 2004.

D. Cost: Chevron anticipates that installation, equipment lease, and waste material disposal will cost in excess of \$500,000 over the next three years and will cost in excess of \$100,000 annually beyond the three-year SEP term.

II. El Segundo Refinery

A. Odor Control/Emissions Reductions

1. Description: Chevron will perform an odor control and emissions reduction project relating to a waste oil tank at its El-Segundo Refinery. Specifically, Chevron will install an aluminum geodesic dome on tank T-189, a recovered oil tank (115' x 35') that receives a variety of waste oil streams from throughout the Refinery.

2. Environmental/Community Benefit: Completion of this project will reduce odor problems associated with the waste oil tank and reduce VOC emissions by approximately 6300 pounds per year.

3. Schedule: Chevron shall complete construction and implementation of this project by no later than July 31, 2007.

4. Cost: Chevron anticipates that it will be required to spend \$200,000 to complete the project.

B. Emergency Response Equipment

1. **Description:** Chevron will purchase and/or provide funding for the acquisition and upgrade of emergency response equipment utilized by the El Segundo Fire Department in the vicinity of the El Segundo Refinery. Specifically, Chevron will fund the purchase of two electronic defibrillators for installation on fire and emergency response vehicles and will fund the upgrade of an Urban Search and Rescue Vehicle to enhance response capabilities.
2. **Environmental/Community Benefit:** Acquisition and upgrade of the equipment for the El Segundo Fire Department will enhance emergency response capabilities in the community surrounding Chevron's El Segundo Refinery.
3. **Schedule:** Chevron shall implement this project by no later than June 30, 2004.
4. **Cost:** Chevron anticipates that it will be required to spend approximately \$100,000 to complete the project.

III. Richmond Refinery

- A. **Description:** Chevron will enter into a 29-year, no-rent lease agreement with the City of Richmond, California, for the lease by the City of approximately five acres of property adjacent to Chevron's Richmond Refinery. The lease will allow Richmond's Fire Department to construct and operate an Emergency Response Training Facility to conduct advanced fire and hazardous materials training exercises designed to improve emergency response capabilities in the community surrounding the Richmond Refinery. Chevron will also pay all expenses associated with the relocation of materials currently stored on the property.
- B. **Environmental/Community Benefit:** Richmond's current training facility is being displaced by a public housing renovation project. The Chevron property is well-situated to allow for multi-jurisdiction and joint public-private emergency response and hazardous materials incident training. By providing Richmond with an enhanced training facility, the project will improve the safety of the community surrounding the Richmond Refinery and other local industrial facilities.
- C. **Schedule:** Chevron shall execute the lease with the City of Richmond by no later than 90 days from the Date of Entry of the Consent Decree.
- D. **Cost:** The net present value of the rent payments forgone by Chevron over the 29-year term of the lease is in excess of \$2,000,000. Chevron also anticipates that it will spend in excess of \$250,000 in relocating its equipment storage area currently located on the property. For purposes of Paragraphs 110 and 111 of the Consent Decree, the "cost" incurred by Chevron for SEPs and/or the amount "expended" by Chevron on SEPs shall include \$2,000,000 for the

foregone rent payments associated with this lease. This amount shall be added to other costs incurred by Chevron with respect to this SEP to determine the total "cost" or amount "expended" on the Richmond Refinery SEP described herein.

E. Conditions Precedent to Penalty Mitigation: The United States' approval of this project for penalty mitigation is subject to the condition that Chevron incorporate in the lease, or otherwise guarantee the existence of, a mechanism by which the United States may ensure that the parties comply with the terms of the lease after the termination of the Consent Decree, and that the leased property continues to be used to enhance emergency response capabilities for the City of Richmond.