DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY
1558 Washington Street, East
Charleston, WV 25311-2599

Gaston Caperton
Governor

David C. Callaghan
Director

Laidley Eli McCoy
Deputy Director

WV DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY
1558 Washington Street, East
Charleston, WV 25311

v.

CO-SIP-95-1

QUAKER STATE CORPORATION
c/o Eugene W. Tripp
Plant Manager
Congo Refinery
PO Box 336
Newell, WV 26050

# CONSENT ORDER

## I. AUTHORITY

Under the authority and direction of the Code of West Virginia, Chapter 22, Article 5, Section 1 et seq., this Consent Order is hereby entered.

## II. FINDINGS OF FACT

1. Quaker State Corporation, hereinafter referred to as the "Company," owns and operates a petroleum refinery at Congo in the New Manchester-Grant Magisterial District of Hancock County, West Virginia. Sulfur dioxide is emitted from numerous process and fuel burning sources at the facility including coal and oil fired boilers, process heaters, and flares.

2. In 1978 the New Manchester-Grant Magisterial District of Hancock County was designated by the United States Environmental Protection Agency (hereinafter referred to as the "EPA") as a nonattainment area with respect to the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide pursuant to Section 107 of the Clean Air Act as amended in 1977. The remaining portion of Hancock County, consisting of Clay and Butler Magisterial Districts, was designated by EPA as a nonattainment area for the sulfur dioxide NAAQS on December 21, 1993.

3. The New Manchester-Grant Magisterial District of Hancock County had not been redesignated to attainment on November 15, 1990 and, by operation of law, continued to be formally designated as a nonattainment area with respect to the sulfur dioxide NAAQS upon passage of the Clean Air Act Amendments of 1990.

4. By a letter of February 5, 1990 EPA notified West Virginia that EPA had found West Virginia's State Implementation Plan (SIP) substantially inadequate to attain and maintain the NAAQS for sulfur dioxide in Hancock County. West Virginia's SIP for sulfur dioxide is primarily contained within 45 CSR 10 - "To Prevent and Control Air Pollution From the Emission of Sulfur Oxides".

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5. The results of dispersion modeling analyses using EPA-approved models and procedures show that sulfur dioxide allowed to be emitted from the Congo refinery under 45 CSR 10 - "To Prevent and Control Air Pollution From the Emission of Sulfur Oxides" may violate or substantially contribute to projected violations of the NAAQS for sulfur dioxide within the New Manchester Grant Magisterial District without implementation of the emission and operating limitations and stack height requirements set forth in this consent order.

6. Under the requirements of WV Code §22-5-1 et seq., and the federal Clean Air Act, as amended, the OAQ is required to develop and submit to EPA an expeditious plan to assure attainment and maintenance of the NAAQS for sulfur dioxide in the New Manchester Grant Magisterial District of Hancock County.

7. The Company and the OAQ have developed and entered this consent order to establish sulfur dioxide emission control requirements applicable to the Company sufficient to prevent violations of the NAAQS for sulfur dioxide within the New Manchester-Grant Magisterial District.

8. The OAQ shall submit this order upon entry to EPA and request its incorporation into the State Implementation Plan for the purpose of federal enforceability and to carry out OAQ's responsibility under the WV Code and federal Clean Air Act.

9. For purposes of this Consent Order:

   a. The term "refinery fuel gas" shall be defined as any gas, other than sour gas, which is generated at a petroleum refinery and which is combusted.

   b. The term "sour gas" shall be defined as gas which is generated at a sour water stripper unit located at a petroleum refinery.

10. The OAQ has made a determination that sulfur dioxide emissions from the sour gas flare at the Congo facility have a negligible impact upon surrounding air quality and that the cost of continuously controlling sulfur dioxide emissions to a level beyond the requirements established in this Consent Order is unreasonable.

## III. CONCLUSIONS OF LAW

1. The OAQ is the agency empowered and authorized to regulate and control pollution of the air in the State of West Virginia under the supervision of the Director of the Division of Environmental Protection as provided in W. Va. Code §22-5-1 et seq., and W. Va. Code §22-1-7(3).

2. The OAQ has acted in accordance with the Code of West Virginia and the rules that it administers.

3. The OAQ has provided notice and opportunity for public comment and a hearing in accordance with the Code of West Virginia and the federal Clean Air Act, as amended.



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## IV. COMPLIANCE PROGRAM

1. The Company agrees that it shall not operate any source of sulfur dioxide emissions unless such source is in compliance with the Code, terms of the this consent order, and any additional or more stringent provisions of 45 CSR 10 - "To Prevent and Control Air Pollution From the Emission of Sulfur Oxides".

2. The Company agrees that at all times, including periods of source start-up, shut down, and malfunction, that it will, to the extent practicable, maintain and operate all sources of sulfur dioxide emissions, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

3. Upon the effective date of this Consent Order, the Company agrees to comply with the following emission and operational limitations in addition to any other applicable limitations under 45CSR10:

A. Sulfur dioxide emissions from each coal-fired fluidized-bed boiler (Nos. 1 and 2) and each oil-fired package boiler (designated A & B) shall not at any time exceed 1.2 pounds per million British Thermal Units (BTU) of heat input.

B. Notwithstanding Section IV.3.A. of this Consent Order, Quaker State shall limit the sulfur dioxide emissions from the steam plant as follows:

a. Emissions from the operation of two coal-fired fluidized-bed boilers, shall be limited to 192 lbs. $SO_2$/hr. each.

b. Emissions from the operation of two oil-fired package boilers, shall not exceed a total emission rate of 264 lbs. $SO_2$/hr.

c. Emissions from the operation of one coal-fired fluidized-bed boiler, and one oil-fired package boiler, shall not exceed 264 lbs. $SO_2$/hr.

4. Emissions of sulfur dioxide from process heaters H-101 and H-102 shall not exceed 1.1 lbs./mmBtu.

5. Emissions of sulfur dioxide from process heaters H-501/6 and H-601/4 shall not exceed 0.8 lbs./mmBtu.

6. The vacuum fractionator heater, H-701, shall be fired only with natural gas and/or treated refinery fuel gas that contains hydrogen sulfide in a concentration not to exceed 10 grains per 100 dry standard cubic feet of gas, and emissions of sulfur dioxide shall not exceed 0.8 lbs./mmBtu.

7. Process heater H-201 shall be fired with fuel oil, desulfurized fuel gas and/or natural gas and sulfur dioxide emissions from this heater shall not exceed 1.1 lbs./mmBtu.

8. The Hydrogen Unit heater, H-605, shall be fired only with natural gas.



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9. Except as expressly provided herein, no refinery fuel gas or other process gas which contains hydrogen sulfide in a concentration in excess of 50 grains per 100 dry standard cubic feet of gas shall be combusted in any device; provided, however, that gas generated at the sour water stripper shall continue to be processed through the Sulferox System and the Company shall exercise good operating and maintenance practices to maximize the utilization of the Sulferox System to remove sulfur compounds from the sour gas stream and further provided, that in no event shall the emissions of sulfur dioxide from the sour gas flare exceed 18 lbs./hr.

10. On and after May 1, 1996, all exhaust gases from the No. 1 and No. 2 fluidized-bed coal-fired boilers and oil/gas fired boilers No. A and B shall be exhausted from stacks having heights of 200 feet above grade and stack top elevations at 880 feet above mean seal level. Any modifications to the stacks in existence on the date of entry of this Consent Order or replacement of those stacks shall comply with the provisions of 45CSR20 "Good Engineering Practice as Applicable to Stack Heights". The Company agrees to comply with this provision in accordance with the following schedule:

| | On or before: |
|---|---|
| Complete engineering: | May 1, 1995 |
| Contracts: | August 1, 1995 |
| Initiate Construction: | November 1, 1995 |
| Complete construction: | May 1, 1996 |

11. The Director may allow pounds per million Btu emission limitations for the process heaters set forth in Sections 4 through 7 to be replaced with pound per hour limitations, provided that the Company installs calibrates, maintains, and operates continuous emission and gas flow monitors to continuously determine sulfur dioxide mass emissions and demonstrates to the satisfaction of the Director and USEPA that pound per hour limitations alone assure attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide.

## V. COMPLIANCE TESTING AND MONITORING REQUIREMENTS

1. Compliance with the emission limitations of this Consent Order shall be based upon the averaging time and compliance determination methods established within this section.

2. Upon entry of this Consent Order, compliance with the sulfur dioxide emission limitations established in Section IV for coal-fired fluidized-bed Boilers Nos. 1 and 2 shall be demonstrated in accordance with the following provisions:

A. Co-located continuous monitoring systems (for sulfur dioxide and oxygen) shall be installed, calibrated, maintained and operated to measure the concentration of sulfur dioxide and oxygen in the combustion gases discharged from these boilers. The continuous monitoring systems and programs shall comply with the requirements of subsections V.5 and V.7.



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B. On and after January 1, 1995, compliance shall be determined based upon a rolling three (3) hour average of measured sulfur dioxide concentrations and procedures approved by the Director to calculate hourly mass emissions. Prior to January 1, 1995, compliance shall be determined based upon a block twenty-four (24) hour averaging period with the beginning of each such period beginning at 12:00 midnight or the Company may elect to base compliance determinations upon a rolling three (3) hour average.

C. During any period in which coal-fired boiler No. 1 or No. 2 is operated without continuous emissions monitoring systems in proper operation, the Company shall fire the boiler using a segregated coal supply with sufficiently low sulfur content and adequate heating value to assure compliance with Section IV of this Consent Order assuming 100% conversion and emission of coal sulfur as sulfur dioxide. For each day of boiler operation in which the continuous emission monitoring system is not in continuous operation, coal shall be sampled and analyzed for sulfur content and heating value in accordance with applicable ASTM methods, the mass of coal burned during the day shall be accurately determined, and the Company shall calculate and report to the Director sulfur dioxide emissions utilizing this data.

3. On after June 1, 1995, compliance with the sulfur dioxide emission limitations established in Section IV for oil/gas-fired boilers Nos. A and B shall be demonstrated in accordance with the following provisions:

A. Co-located continuous monitoring systems (for sulfur dioxide and oxygen) shall be installed, calibrated, maintained and operated to measure the concentration of sulfur dioxide and oxygen in the combustion gases discharged from these boilers. The continuous monitoring systems and programs shall comply with the requirements of subsection V.5 and V.7.

B. Following installation of the continuous monitoring system, compliance shall be determined based upon a rolling three (3) hour average of measured sulfur dioxide concentrations and procedures approved by the Director to calculate hourly mass emissions.

C. During any period after June 1, 1995 in which either of these boilers is operated without its continuous emission monitoring system in proper operation, the Company shall fire only natural gas or desulfurized refinery fuel-gas in the boiler.

D. Upon the effective date of this Consent Order and until June 1, 1995, the Company shall determine compliance with the emission limitations for these boilers in Section IV daily in the manner set forth for compliance determinations for process heaters in subsection V.4.

4. Upon entry of this Consent Order, compliance with the sulfur dioxide emission limitations established in Section IV for Process Heaters H-101, H-102, H-501/6, H-601/4, H-701, and H-201 shall be determined daily in accordance with the following provisions:



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A. Total daily sulfur dioxide emissions for each heater shall be calculated by adding the sulfur dioxide emissions attributable to each fuel fired during all twenty-four (24) hour periods.

B. Sulfur dioxide emissions attributable to the combustion of fuel oil shall be determined by sampling and analyzing the volume of fuel oil fired for sulfur content and heating volume in accordance with applicable ASTM sampling and analytical methods and accurately measuring the volume and mass of fuel oil fired in each heater.

C. Sulfur dioxide emissions attributable to the combustion of fuel gas shall be determined using continuous hydrogen sulfide monitoring data collected in accordance with subsection V.5 in conjunction with daily determinations of fuel gas heating value and density and accurate daily measurements of the volume of fuel gas fired in each heater.

D. Fuel mass or volumetric flow metering equipment required by subsections V.4.B. and V.4.C. shall be installed and placed into continuous operations on or before June 1, 1995.

5. Installation, calibration, maintenance and operation of the continuous emission monitoring systems required under paragraph V.2.A. and V.3.A., shall comply with the following provisions under 40 CFR Part 60:

a. Part 60.13(a)
b. Part 60.13(c)
c. Part 60.13(d)(1)
d. Part 60.13(e)(2)
e. Part 60.13(f)
f. Part 60.13(g)
g. Part 60.13(h)
h. Part 60.13(i)
i. Part 60.13(j)
j. Part 60.45(c)
k. Part 60.45(e)
l. Part 60.45(f)
m. Part 60.46(b)(4)
n. Part 60, Appendix A, Methods 6, 6A and 6B
o. Part 60, Appendix B, Performance Specification 2
p. Part 60, Appendix B, Performance Specification 3

Where the term "Administrator" (USEPA) is used within any of the adopted 40 CFR Part 60 provisions, the term shall mean the Director.

6. On and after the effective date of this Consent Order the Company shall have installed and shall calibrate, maintain and operate a continuous emission monitoring system as herein provided to measure the concentration of hydrogen sulfide in all refinery fuel gas streams. Installation, calibration, maintenance and operation of such continuous emission monitoring system shall comply with the following provisions of 40 CFR Part 60:



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a. Part 60.13(a)
b. Part 60.13(c)
c. Part 60.13(d)(1)
d. Part 60.13(e)(2)
e. Part 60.13(f)
f. Part 60.13(g)
g. Part 60.13(h)
h. Part 60.13(i)
i. Part 60.13(j)
j. Part 60.105(a)(4)
k. Part 60.106(e) part 60, Appendix A, Method 11
l. Part 60, Appendix B Performance Specification 7

Where the term "Administrator" (USEPA) is used within any of the adopted 40 CFR Part 60 provisions, the term shall mean the Director.

The Director may approve the installation of sulfur dioxide and oxygen monitoring systems to monitor sulfur dioxide emissions in the exhaust gases from combustion units firing refinery fuel gas in lieu of a hydrogen sulfide monitoring system for the fuel gas streams. Such $SO_2$ and oxygen monitoring systems shall be subject to the performance specifications, quality assurance procedures and other related requirements under 40 CFR Part 60.

7. All continuous emission monitoring data required to be collected under paragraphs V.2.A. and V.3.A. and subsection V.6 shall be quality assured in accordance with 40 CFR Part 60, Appendix F Quality Assurance Procedures.

8. Sources of sulfur dioxide emissions subject to this Consent Order shall demonstrate compliance with the emission standards set forth in subsections IV.3, IV.4, IV.5, IV.6, IV.7, IV.9 and IV.10 using data collected in accordance with this section and reference emissions test procedures in 40 CFR Part 60, Appendix A, Methods 6, 6A, 6B and 19.

9. Any source for which compliance with sulfur dioxide emissions limitations are not demonstrated using continuous emission monitoring systems, must demonstrate compliance in accordance with subsection V.8 not less frequently than semi-annually. At least three test runs, each with sufficient samples to characterize a two-hour period representative of normal source operation, shall be required for each compliance demonstration using the reference test procedures specified in subsection V.8. The Director may order any person subject to this Consent Order to conduct or have conducted an emissions test at any time that he or she has reason to believe that an emission limitation may be exceeded. The semi-annual tests shall otherwise be scheduled as ordered by or in consultation with the Director. No tests shall be required for units burning only natural gas.

10. The hydrogen sulfide concentrations of the sour gas stream used to determine daily compliance with subsection IV.9 above shall be determined on days when the Sulferox System is not operating by running 2-hour samples of the hydrogen sulfide content of the water entering and exiting the sour water stripper unit. At least three (3) 2-hour samples shall be taken during each 24-hour period at approximately 8-hour intervals.



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11. During any period of failure or malfunction of the hydrogen sulfide continuous emission monitoring system required under subsection V.6, $H_2S$ concentrations of the refinery fuel gas shall be determined by collection of not less than two (2) gas samples per eight (8) hour period which are analyzed by gas chromatography for hydrogen sulfide content, density and heating value in accordance with ASTM Method D-1945. The Company may request approval by the Director of alternative sampling and analytical methods for determination of these parameters during periods when the $H_2S$ monitoring system has failed or malfunctioned.

12. Should the Director exercise his option to conduct emissions tests or monitoring, the Company shall provide all necessary sampling connections and sampling ports to be located in such a manner as the Director may require, power for test equipment, safe sampling platforms and safe access to such sampling platforms.

## VI. RECORDKEEPING, NOTICES AND REPORTING

1. When demonstrating compliance using a reference test method under 40 CFR part 60, Appendix A, the Company shall be required to submit a test protocol to the Director for approval at least thirty (30) days prior to the projected test dates. The Director shall be provided written notice of the actual test dates after approval of the test protocol, but not less than fifteen (15) days prior to the first date of testing.

2. The Company shall provide written notice to the Director at least thirty (30) days prior to any performance demonstration of a continuous monitoring system or device required pursuant to this Consent Order.

3. The Company shall submit an excess emissions and monitoring systems performance report to the Director for all sources for which the Company is required to maintain and operate a continuous monitoring system or monitoring device for sulfur dioxide or hydrogen sulfide on a calendar monthly basis. All such reports shall be submitted by the 30th day following the end of each calendar month and shall contain the results of all determinations showing excess emissions regardless of whether the determinations are made by continuous monitoring data or by other methods established by this Consent Order. Written reports of excess emissions shall include the following information:

A. The magnitude of excess emissions computed in accordance with 40 CFR §60.13(h), any conversion factor(s) used, the date and the time at which the excess emissions started and ended for each occurrence of excess emissions and the process operating time during the reporting period.

B. Specific identification of each period of excess emissions that occurred during start-ups, shut-downs and malfunctions of the affected facility. Each malfunction report filed with the Director in accordance with subsection VI.7. shall be referenced by report number with the date of occurrence and date of report submission noted.



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C. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

D. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired or adjusted, such information shall be stated in the report.

If the total duration of excess emissions during the reporting period is less than one percent (1%) of the total operating time for the reporting period, and downtime for the continuous monitoring system for the reporting period is less than five percent (5%) of the total operating time for the reporting period, only the summary report form listed as Figure 1 in 40 CFR Part 60.7(d) shall be submitted, and the excess emission report described above need not be submitted unless requested by the Director. If the total duration of excess emissions for the reporting period is one percent (1%) or greater of the total operating time for the reporting period, or the total continuous system downtime for the reporting period is five percent (5%) or greater of the total operating time for the reporting period, the summary report form and the excess emission report described above shall both be submitted to the Director.

4. The Company shall maintain records of the occurrence and duration of any start-up, shut-down or malfunction in the operation of sources subject to this Consent Order, any malfunction of air pollution control equipment or any periods during with a continuous monitoring system or device is inoperative.

5. The Company shall maintain a file of all measurements, including continuous monitoring system, monitoring device and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this Consent Order or otherwise by the Director.

6. Any report of an emissions test conducted by or for the Company shall be completed and submitted to the Director within thirty (30) days of the final sampling date for the test.

7. The Company shall report to the Director, by telephone or telefax, any malfunction of such source or its air pollution control equipment which results in any excess sulfur dioxide emission rate or concentration within twenty-four (24) hours of becoming aware of such condition. The Company shall file a written report concerning the malfunction with the Director within ten (10) days, providing the following information:

A. A detailed explanation of the factors involved or causes of the malfunction.

B. The date and time of duration (with starting and ending times) of the period of excess emissions.

C. An estimate of the mass of excess emissions discharged during the malfunction period.



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D. The maximum emission rate or concentration measured or otherwise determined during the malfunction in units of the applicable emissions standard.

E. Immediate remedial actions taken at the time of the malfunction to correct or mitigate the effects of the malfunction.

F. A detailed explanation of the corrective measures or program that will be implemented to prevent a recurrence of the malfunction and a schedule for such implementation.

8. All data and information required to be recorded or obtained under the terms of this Consent Order shall be maintained in a permanent form suitable for inspection and shall be retained for at least five (5) years following the state of the record or report. All such data and information shall be submitted in accordance with the terms of this Consent Order or made available to the Director upon his or her request or during any facility inspection by an authorized representative of the Director.

9. All reports required to be submitted to the Director under the terms of this Consent Order shall be certified by a responsible official of the Company. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

## VII. OTHER PROVISIONS

1. In entering this Consent Order agreement, the Company and the OAQ seek to resolve the nonattainment issues identified in Section I, Findings of Fact, but the Company makes no admission of fact or law with regard to those findings.

2. The Company agrees to comply with all requirements of this Consent Order and further agrees to waive any and all rights of appeal of this Consent Order.

3. Nothing contained in this Consent Order shall be interpreted in such a manner as to relieve the Company of the responsibility to make all necessary short-term emission reductions as provided and required in Regulation 11 - "Prevention of Air Pollution Emergency Episodes".

4. The provisions of this Consent Order are severable and should any provisions be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

5. This Consent Order is binding on the Company, its successors, and assigns.

6. Violations of this Consent Order may be subject to the Company to penalties and injunctive relief in accordance with the Code of West Virginia.



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7. The OAQ agrees that the Company shall have the right to petition for an amendment to this Consent Order in the event of a "force majeure" condition. The petition shall allege such conditions with specificity. The Director in his or her full and complete discretion, shall determine whether he or she will hear the Company's petition and the relief accorded, if any.

8. The Company shall not build, erect, install, or use any article, machine, equipment or process, the user of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

9. The terms and conditions of this consent order shall become effective upon signing by both parties.

10. Nothing contained in this Consent Order shall be construed to limit, in any way, the Director's authority to require the Company to install, calibrate, and operate continuous emission monitoring equipment for sources other than those specifically required to have such monitoring equipment under the terms of this Consent Order.

11. For the purpose of the administration of this Consent Order, all decisions and determinations required to be made by the Director of the Division of Environmental Protection may be made by the Chief of the OAQ and all reports and notifications required under this Consent Order shall be submitted to the Chief of the OAQ.

12. Nothing contained in this Consent Order shall be construed, in any manner, to provide relief from the requirements of any permit issued by the Office of Air Quality or the Air Pollution Control Commission prior to the date of this Order.



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AND NOW, this 9th day of January, 1995, the Division of Environmental Protection, Office of Air Quality agrees to and enters into this Consent Order.

DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY

By Its Chief Director

QUAKER STATE CORPORATION, hereby agrees with the provisions and consents to the terms of this Consent Order and agrees to comply with all requirements set forth herein.

AND NOW, this 9th day of January, 1995, QUAKER STATE CORPORATION, by its duly authorized representative, consents to, agrees to and enters into this Consent Order.

QUAKER STATE CORPORATION

By _____

Conrad A. Conrad
Vice Chairman & Chief Administrative Officer
President, Satellite Companies



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