IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF LOUISIANA

UNITED STATES OF AMERICA and STATE OF LOUISIANA,	)	
Plaintiffs,	)	Civil Action No.
v.	)	Section:
MOSAIC FERTILIZER, LLC,	)	Magistrate:
Defendant.	)	

CONSENT DECREE

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WHEREAS, Plaintiff United States of America, on behalf of the United States Environmental Protection Agency and the State of Louisiana, on behalf of the people of the State of Louisiana and the Louisiana Department of Environmental Quality ("LDEQ"), have filed a complaint concurrently with this Consent Decree, alleging that Defendant Mosaic Fertilizer, LLC ("Mosaic" or "Defendant"), violated Sections 111 and 165, 42 U.S.C. §§ 7411 and 7475, of the Clean Air Act ("CAA" or "Act"), 42 U.S.C. § 7401 et seq.;

WHEREAS, the Complaint against Mosaic alleges that Mosaic constructed, reconstructed or modified the A Train and the D Train Sulfuric Acid Plants at a facility owned and operated by Mosaic in Uncle Sam, Louisiana ("Uncle Sam Facility") without obtaining required permits, installing required control technology, meeting emission limits, and complying with requirements for monitoring, record-keeping and reporting, as specified in the Act;

WHEREAS, Mosaic has agreed to reduce sulfur dioxide ("SO_2") emissions from the A Train and the D Train Sulfuric Acid Plants to levels no greater than emission levels at least equivalent to those that would result from the use of Best Available Control Technology ("BACT"), as defined at 40 C.F.R. § 52.21(b)(12);

WHEREAS, Mosaic currently plans to install an Amine Based Regenerative Gas Absorption System on the A Train and improve the existing dual absorption system on the D Train to meet the emission limitations required by this Consent Decree. Regardless of the control technology Mosaic uses, Mosaic must meet the limits included in this Consent Decree;

WHEREAS, Mosaic has decided, for independent business reasons, to cease operation of the Mulberry Sulfuric Acid Plant and shall, within six (6) months of the Effective Date of this Consent Decree, permanently terminate operation of the Mulberry Sulfuric Acid Plant;

WHEREAS, the Parties anticipate that after full implementation, compliance with the

emission limitations required by this Consent Decree will result in a reduction in emissions of at least 7,612 tons of SO_2 and 4.5 tons of sulfuric acid mist annually;

WHEREAS, Mosaic does not admit any liability arising out of the acts or omissions alleged in the Complaint and this Consent Decree resolves all allegations stated in the United States' and State Plaintiff's Complaint. Nothing in the Complaint or this Consent Decree, nor the execution and implementation of this Consent Decree, shall be treated as an admission or evidence of any violation of the Act and implementing regulations cited herein in any litigation or forum whatsoever, provided that the terms of this Consent Decree may be used in any action or dispute resolution proceeding to enforce the terms of this Consent Decree;

WHEREAS, Mosaic has worked cooperatively with the United States and the State Plaintiff to structure a comprehensive program that will result in significant reductions of SO_2 emissions annually from its operation in Louisiana; and

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith, will avoid litigation among the Parties and that this Consent Decree is fair, reasonable, and in the public interest;

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Sections I and II below, and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 113(b) of the Act, 42 U.S.C. § 7413(b), and over the Parties. Venue lies in this District pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c) and 1395(a), because some of the violations alleged

in the Complaint are alleged to have occurred in, and Defendant conducts business in, this judicial district. Solely for purposes of this Consent Decree and any action to enforce this Consent Decree, Defendant consents to this Court's jurisdiction over the Defendant and any action to enforce this Consent Decree, and to venue in this judicial district. Except as expressly provided for herein, this Consent Decree shall not create any rights in or obligations of any Party other than the Plaintiffs and Defendant.

2. For purposes of this Consent Decree, Defendant agrees that the Complaint states claims upon which relief may be granted pursuant to Sections 111 and 165 of the Act, 42 U.S.C. §§ 7411, 7475 and/or pursuant to state law.

3. Notice of the commencement of this action has been given to the State of Louisiana, as required by Section 113 of the Act, 42 U.S.C. § 7413.

II. APPLICABILITY

4. The obligations of this Consent Decree apply to and are binding upon the United States and the State Plaintiff, and upon Defendant and its successors, assigns, or other entities or persons otherwise bound by law.

5. At least 30 days prior to any transfer of ownership or operation of the Uncle Sam Facility or any Sulfuric Acid Plant at the Uncle Sam Facility to an entity unrelated to Defendant, Defendant shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer to the United States and to the State Plaintiff, in accordance with Section XV of this Decree (Notices). The time period set out in this Paragraph may be shortened by agreement of the Parties. Any transfer of ownership or operation of the Uncle Sam Facility, or any portion thereof, without complying with the foregoing notice requirements constitutes a violation of this Consent Decree. No such transfer,

whether in compliance with the notice requirements of this Paragraph or otherwise, shall relieve Defendant of its obligations under this Consent Decree, unless:

a. the transferee agrees in writing to undertake the obligations required by this Consent Decree with respect to the Uncle Sam Facility, and to intervene as a Defendant in this action for the purpose of being bound by the applicable terms of this Consent Decree;

b. the transferee provides the United States and the State Plaintiff with information sufficient to demonstrate that the transferee has the technical and financial means to comply with the applicable obligations of this Consent Decree; and

c. The United States consents in writing to substitute the transferee for Defendant with respect to such obligations.

6. In any action to enforce this Consent Decree, Defendant shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. DEFINITIONS

7. Terms used in this Consent Decree that are defined in the Act or in federal and state regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. "100% Sulfuric Acid Produced" shall mean the stoichiometric quantity of sulfuric acid that would be produced at a Sulfuric Acid Plant if all sulfur trioxide (SO_3) exiting the converter were used to produce sulfuric acid monohydrate. For purposes of this definition, scrubber byproduct (if any) shall be considered to be included in "100% Sulfuric Acid Produced".

b. “A Train” shall mean the Sulfuric Acid Plant at the Uncle Sam Facility with LDEQ Identification (“I.D.”) Number EQT 67.

c. “Acid mist” shall mean the pollutant sulfuric acid mist as measured by Method 8 of 40 C.F.R. Part 60 Appendix A consistent with 40 C.F.R. § 60.81(b).

d. “Amine Based Regenerative Gas Absorption System” shall mean an SO_2 pollution control technology that utilizes a regenerative aqueous amine solution to absorb SO_2 from Sulfuric Acid Plant tail gas, steam strips SO_2 from the amine solution, and produces a concentrated SO_2 stream that is fed into the Sulfuric Acid Plant converter.

e. “CEMS” or “Continuous Emission Monitoring System” shall mean the total equipment, required under the CEMS Plan attached as Appendices B and C to this Consent Decree used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

f. “CEMS Plan” shall mean one of the CEMS Plans for the A Train and D Train that are attached in Appendices B and C, respectively.

g. “Complaint” shall mean the Complaint filed by the United States and the State Plaintiff in this action.

h. “Consent Decree” or “Decree” shall mean this Consent Decree and all appendices attached hereto, but in the event of any conflict between the text of this Consent Decree and any appendix, the text of this Consent Decree shall control.

i. “D Train” shall mean the Sulfuric Acid Plant at the Uncle Sam Facility designated by LDEQ I.D. Number EQT 74.

j. “Day” shall mean a calendar day unless expressly stated otherwise.

k. “Defendant” shall mean Mosaic Fertilizer, LLC.

l. “E Train” shall mean the Sulfuric Acid Plant at the Uncle Sam Facility designated by LDEQ I.D. Number EQT 76.

m. “Effective Date” shall have the meaning given in Paragraph 86.

n. “LDEQ” shall mean the Louisiana Department of Environmental Quality.

o. “Long-Term Limit” shall mean a 365-day rolling average sulfur dioxide emission limit expressed as pounds of sulfur dioxide emitted per ton (“lb/ton”) of 100% Sulfuric Acid Produced. Compliance with the Long-Term Limit shall be determined each day in accordance with the CEMS Plan for the D Train attached to this Consent Decree as AppendixC. The Long-Term Limit applies at all times, including during periods of Startup, Shutdown and Malfunction.

p. “Malfunction” shall mean, consistent with 40 C.F.R. § 60.2, any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner, but shall not include failures that are caused in part by poor maintenance or careless operation.

q. “Mass Cap” shall mean the maximum amount of SO_2 emissions for each Sulfuric Acid Plant expressed in tons of SO_2 emitted during each 12-month period consisting of the most recently concluded month and the eleven months immediately preceding it. In determining compliance with the Mass Cap in accordance with the CEMS Plan for A Train and D Train, all SO_2 emissions from a Sulfuric Acid Plant, including Startup, Shutdown and Malfunction shall be counted.

r. “Month” shall mean calendar month.

s. “Mulberry Sulfuric Acid Plant” shall mean the Sulfuric Acid Plant located at 3200 Highway 60 West, Bartow, FL 33830 designated in Mosaic’s Bartow Facility Title V

Operating Permit as Emission Unit 054.

t. "NSR" shall mean a program for new source review under the Act. Specifically, "non-attainment NSR" and "major NSR" as used herein refer to the non-attainment area new source review program within the meaning of Part D of Subchapter I of the Act, 42 U.S.C. §§ 7501-7515; "minor NSR" as used herein refers to any state, regional or local statutes, ordinances or regulations calling for review and approval of non-major new and modified sources of air pollution.

u. "NSPS" shall mean the standards of performance for new stationary sources codified at 40 C.F.R. Part 60. General NSPS requirements are codified at 40 C.F.R. Part 60, Subpart A. NSPS requirements specifically for Sulfuric Acid Plants are codified at 40 C.F.R. Part 60, Subpart H.

v. "O&M Plan" shall mean the operations and maintenance plan for the A Train and D Train that is attached in Appendix A.

w. "Operating Period" shall mean periods in which elemental sulfur is being fed to the furnace and periods of Shutdown.

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

y. "PSD" shall mean the attainment area new source review program (prevention of significant deterioration) within the meaning of Part C of Subchapter I of the Act, 42 U.S.C. §§ 7470-7492.

z. "Parties" or "Party" shall mean the United States, the State of Louisiana and Mosaic or any one of them.

aa. "ppm" shall mean parts per million by volume, dry basis.

bb. “Section” shall mean a portion of this Consent Decree identified by an upper case roman numeral.

cc. “Short-Term Limit” shall mean a 3-hour rolling average SO_2 emission limit expressed as pounds of SO_2 emitted per ton of 100% Sulfuric Acid Produced. Compliance with the Short-Term Limit shall be calculated in accordance with the CEMS Plans attached to this Consent Decree as Appendices B and C. The Short-Term Limit does not apply during periods of Startup, Shutdown, or Malfunction.

dd. “Shutdown” shall mean the cessation of operation of a Sulfuric Acid Plant for any reason. Shutdown begins at the time the feed of elemental sulfur to the furnace ceases and ends 3 hours later or when the blower is turned off, whichever is earlier.

ee. “SO_2” shall mean the pollutant sulfur dioxide.

ff. “Startup” shall mean, with respect to either Sulfuric Acid Plant, the period of time, beginning when the feed of elemental sulfur to the furnace commences and lasting for no more than 4 hours.

gg. “State Plaintiff” or “State” shall mean the State of Louisiana.

hh. “Subparagraph” shall mean a portion of a Paragraph of this Consent Decree identified by a lower case Roman letter.

ii. “Sulfuric Acid Plant” or “Plant” shall mean a process unit engaged in the production of sulfuric acid and related products using the contact process at Mosaic’s Uncle Sam Facility.

jj. “Title V Permit” shall mean a permit required by or issued pursuant to the requirements of 42 U.S.C. §§ 7661 - 7661f.

kk. “Ton” or “Tons” shall mean short ton or short tons.

ll. "Uncle Sam Facility" shall mean Mosaic's Facility located at 7250 Highway 44, Uncle Sam, St. James Parish, Louisiana 70792.

mm. "United States" shall mean the United States of America, acting on behalf of U.S. EPA.

nn. "U.S. EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.

IV. COMPLIANCE SCHEDULE AND REQUIREMENTS

8. **A Train**: Mosaic shall equip the A Train with an emissions control technology designed to comply with an SO_2 Short-Term Limit of 1.0 lb/ton. The A Train shall comply with the following SO_2 emission limits and schedules:

a. No later than June 1, 2011, the A Train shall meet an SO_2 Short-Term Limit of 1.5 lb/ton.

b. No later than June 1, 2011, during any Startup, the A Train shall meet an SO_2 limit of 500 ppm averaged over the 4-hour Startup period.

c. No later than June 1, 2011, the A Train shall be subject to a Mass Cap of 603 tons of SO_2. Defendant shall demonstrate compliance with this Mass Cap as of May 31, 2012 (for the 12-month period of June 2011 through May 2012) and thereafter as of the last Day of each month for the immediately preceding consecutive 12-month period, in the manner specified in the CEMS Plan for the A Train.

d. Mosaic shall have a demonstration period from June 1, 2011 ending no later than January 31, 2013 under which it will operate the A Train and demonstrate the capabilities of the emission control technologies installed in accordance with this Paragraph. Mosaic shall provide updated information regarding the status of the demonstration period in its semi-annual

reports submitted pursuant to Subparagraph 25.b.

e. No later than May 1, 2013, the A Train shall meet an SO_2 Short-Term Limit of 1.0 lb/ton except as otherwise specified in Subparagraph 8.g.

f. No later than May 1, 2013, the A Train shall be subject to a Mass Cap of 402 tons of SO_2 except as otherwise specified in Subparagraph 8.g. Defendant shall demonstrate compliance with this Mass Cap on April 30, 2014 (for the 12-month period of May 1, 2013 through April 30, 2014); and thereafter as of the last Day of each month for the immediately preceding consecutive 12-month period. In the interim period of May 2013 to March 2014, the A Train shall comply with the monthly Mass Caps specified in Appendix D.

g. If Mosaic elects to comply with this Paragraph 8 by installing an Amine Based Regenerative Gas Absorption System on the A Train and, through the demonstration period specified in Subparagraph d above, Mosaic determines that it is technically infeasible, using the Amine Based Regenerative Gas Absorption System, to meet the Short-Term Limit of 1.0 lb/ton in Subparagraph 8.e above, Mosaic may propose to U.S. EPA and LDEQ less stringent emission limits. Mosaic's proposal for less stringent emission limits must be submitted no later than March 31, 2013; otherwise, Subparagraphs 8.e and 8.f will remain in full force and effect. If Mosaic elects to invoke this Subparagraph, Mosaic will propose a Short-Term Limit, and U.S. EPA in consultation with LDEQ will evaluate the proposal and either approve Mosaic's proposal or establish a Short-Term limit in the following manner:

i. Mosaic shall propose a Short-Term Limit that reflects the lowest feasible emission rate from the A Train using the Amine Based Regenerative Gas Absorption System in accordance with the manufacturer's specification and recommendation for operation, but is in no event greater than 1.5 lb/ton. Mosaic will also propose a Mass Cap that is less

stringent than the Mass Cap in Subparagraph f above by the same proportion as the proposed Short-Term Limit is less stringent than 1.0 lb/ton and will propose proportional adjustments to the interim Mass Caps in Appendix D (*e.g.*, if Mosaic proposes a Short-Term Limit of 20% greater than 1.0 lb/ton, which equals 1.2 lb/ton, it will propose a new Mass Cap of no more than 20% greater than 402 tons, which equals a 485 ton Mass Cap).

ii. Mosaic's proposal shall include a written technically infeasible demonstration report that discusses the results of the demonstration period. In the technically infeasible demonstration report, Mosaic shall present its evidence that it is technically infeasible, using the Amine Based Regenerative Gas Absorption System in accordance with the manufacturer's specifications and recommendations for operation, to meet a Short-Term Limit of 1.0 lb/ton. In the technically infeasible demonstration report, Mosaic shall include:

A) a detailed description, in engineering terms, why a Short-Term Limit of 1.0 lb/ton is technically infeasible on the A Train and why the proposed less stringent emission limit is the lowest feasible emission rate;

B) a detailed description of the relevant events leading up to Mosaic's determination that a Short-Term Limit of 1.0 lb/ton is technically infeasible and that the proposed less stringent emission limit is the lowest feasible emission rate, along with all related correspondence with technology vendors, contractors, or consultants along with any supporting documentation;

C) a description of all efforts taken by Mosaic or its technology vendors, contractors, or consultants to achieve compliance with a Short-Term Limit of 1.0 lb/ton;

D) a description of all potential remedies considered by Mosaic and/or its technology vendors, contractors, or consultants to bring the A Train into compliance

with a Short-Term Limit of 1.0 lb/ton;

E) all CEMS data from the demonstration period; and

F) justifications for the proposed alternative limit, including why it is the most stringent technically feasible limit.

iii. After an opportunity to review Mosaic's request for a less stringent Short-Term Limit and corresponding Mass Cap, U.S. EPA, after consultation with LDEQ, may request, in writing within thirty (30) days of receiving Mosaic's request, any other information U.S. EPA deems necessary in order to evaluate Mosaic's request for less stringent emission limits. If U.S. EPA requests additional information, Mosaic will provide such information within thirty (30) days or such other period as agreed upon by the Parties. Within sixty (60) days of the later of (a) receiving Mosaic's request, or (b) receiving from Mosaic the additional information U.S. EPA requested (if any) after receipt of Mosaic's request, or such other period as agreed upon by the Parties, U.S. EPA, after consultation with LDEQ, shall approve or disapprove the proposed Short-Term Limit and corresponding Mass Cap in writing. If U.S. EPA disapproves Mosaic's proposed Short-Term Limit and corresponding Mass Cap, U.S. EPA will provide written notice to Mosaic in accordance with Section XV establishing the Short-Term Limit and corresponding Mass Cap, but in no event will U.S. EPA require a Short-Term Limit below 1.0 lb/ton or a Mass Cap below 402 tons. U.S. EPA will also establish a proportional Mass Cap and interim Mass Caps, as described in Subparagraph 8.g.i. U.S. EPA will base its decision to approve or disapprove any Short-Term Limit and corresponding Mass Cap proposed by Mosaic or to establish any Short-Term Limit less stringent than 1.0 lb/ton and corresponding Mass Cap less stringent than 402 tons on whether more stringent emission limits are technically infeasible using the Amine Based Regenerative Gas Absorption System based on the criteria

specified in Mosaic's proposal under Subparagraph 8.g.i. consistent with production levels allowable under this Consent Decree.

iv. Mosaic shall comply with its proposed limits upon submission of its technically infeasible demonstration report and until it is required to comply with the emission limits established by U.S. EPA pursuant to Subparagraph 8.g.

v. Within thirty (30) days of receipt of the written notice specified under Subparagraph 8.g.iii, the A Train shall be subject to the EPA-approved or established emission limits. If Mosaic disagrees with U.S. EPA's established Short-Term Limit, it shall invoke dispute resolution, pursuant to Section XI, within the same thirty (30) day period or such other period as agreed upon by the Parties.

9. **D Train:** Beginning no later than October 1, 2011, the D Train Sulfuric Acid Plant shall meet the following SO_2 emission limits, as follows:

a. a Long-Term Limit of 2.2 lb/ton. Mosaic shall commence monitoring its SO_2 emissions from D Train as of October 1, 2011, in accordance with the CEMS Plan for the D Train, but shall have until October 1, 2012, to demonstrate compliance with this Long-Term Limit (for the 12-month period of October 1, 2011 through September 30, 2012);

b. a Mass Cap of 884 tons. Mosaic shall demonstrate compliance with this Mass Cap as of October 1, 2012 (for the 12-month period of October 1, 2011 through September 30, 2012); and thereafter as of the first of each month for the immediately preceding consecutive 12-month period, in the manner specified in the CEMS Plan for the D Train; and

c. a Short-Term Limit of 3.5 lb/ton.

10. Acid Mist Emission Limits: The A Train shall comply and the D Train shall continue to comply with the NSPS, Subpart H sulfuric acid mist emission limitation of 0.15 lb/ton of

100% Sulfuric Acid Produced, as set forth at 40 C.F.R. § 60.83, no later than the Date of Entry. Compliance with this limit is to be demonstrated using the performance test required by 40 C.F.R. Part 60, Subpart H.

11. NSPS Applicability: No later than June 1, 2011, A Train shall be considered to be an affected facility for purposes of the NSPS, 40 C.F.R. Part 60, Subpart H. D Train shall continue to be considered an affected facility for purposes of the NSPS, 40 C.F.R. Part 60, Subpart H. Upon NSPS applicability, each Sulfuric Acid Plant shall comply with all applicable requirements for affected facilities under the NSPS 40 C.F.R. Part 60, Subparts A and H, or with the requirements of this Consent Decree (if more stringent). Satisfactory compliance with notice and compliance demonstration obligations set forth in this Consent Decree shall be deemed to satisfy all applicable initial notification and compliance demonstration requirements of NSPS Subparts A and H.

12. Best Practices: At all times after the Effective Date of this Consent Decree, including periods of Startup, Shutdown, and Malfunction, Defendant shall to the extent practicable maintain and operate each of its Sulfuric Acid Plants, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, consistent with 40 C.F.R. § 60.11(d).

13. O & M Plans: Mosaic shall implement the O&M Plan for A Train no later than June 1, 2011 and for the D Train no later than October 1, 2011. The O&M Plans describe the operating and maintenance procedures necessary to: (i) minimize the frequency of Sulfuric Acid Plant Shutdowns (thereby reducing the number of Startups of each Sulfuric Acid Plant); and (ii) to the extent practicable, maintain and operate each of its Sulfuric Acid Plants, including associated air pollution control equipment, in a manner consistent with good air pollution control

practices for minimizing the quantity of emissions of all pollutants subject to emission standards as of the Effective Date of this Consent Decree at all times, including during periods of Start-up, Shutdown, and Malfunction. No less frequently than once every three years, Mosaic shall review, and update as necessary, the O&M Plan for these Sulfuric Acid Plants and submit the updated plan to U.S. EPA and LDEQ. Upon submission of each O&M Plan, Mosaic shall immediately implement the O&M Plan. U.S. EPA and/or the LDEQ may provide comments and/or recommendations with respect to each O&M Plan.

14. **Emissions Monitoring:**

a. Installation, Certification, and Calibration: By no later than the following dates, Mosaic shall implement the CEMS Plan specified in subparagraph c below:

i. A Train: June 1, 2011

ii. D Train: October 1, 2011

b. CEMS Operation: After the dates set forth above, Mosaic shall maintain and operate the CEMS. Except during CEMS breakdowns, repairs, calibration checks, and zero span adjustments, the CEMS shall be in continuous operation and shall be used at each of the Sulfuric Acid Plants to demonstrate compliance with the SO_2 emission limits established in Paragraphs 8 and 9 of this Consent Decree.

c. SO_2 CEMS Plan: CEMS Plans that describe how Mosaic shall monitor compliance with the SO_2 emission limits established in Paragraphs 8 and 9 of this Consent Decree, including the methodology that they shall use to demonstrate compliance in the event of CEMS downtime lasting longer than 24 hours, are attached in Appendices B and C for the A Train and the D Train, respectively. Mosaic shall implement the CEMS Plans at the A and D Trains. The monitoring methods specified in these CEMS Plans are deemed approved as

appropriate alternative monitoring methods for purposes of NSPS, pursuant to 40 C.F.R. § 60.13(i).

d. CEMS Breakdown: Mosaic shall take reasonable steps to avoid CEMS breakdowns and minimize CEMS downtime. This shall include, but is not limited to, operating and maintaining the CEMS in accordance with best practices and maintaining an on-site inventory of spare parts or other supplies necessary to make rapid repairs to the equipment.

15. **Performance Testing:**

a. Dates. Mosaic shall conduct the performance tests required in this Paragraph 15 by no later than the following dates:

i. A Train: June 1, 2011

ii. D Train: September 30, 2011

iii. E Train: December 31, 2010 and December 31, 2012

b. Acid Mist. Mosaic, shall conduct a performance test measuring the emission rate of acid mist in accordance with the applicable requirements of 40 C.F.R. Part 60, Appendix A, Reference Method 8, or an alternative method approved by U.S. EPA. These performance tests shall be used to demonstrate compliance with the acid mist emission limit established in Paragraph 10 and may serve as the NSPS performance test required under 40 C.F.R. § 60.8. Mosaic shall take all steps necessary to assure accurate measurements of 100% Sulfuric Acid Produced during each test run.

c. SO_2 Emission Limits. Mosaic, shall conduct a performance test measuring the emission rate of SO_2 in accordance with the applicable requirements of 40 C.F.R. Part 60, Appendix A, Reference Method 8, and Part 60, Appendix B, Performance Specification 2, or an alternative method approved by U.S. EPA. If applicable, this test may also serve as the NSPS

performance test required under 40 C.F.R. § 60.8. Mosaic shall take all steps necessary to assure accurate measurements of 100% sulfuric acid production during each test run.

d. Advance Notification. By no later than 30 days before any performance test required by this Paragraph 15 is conducted, or such other period agreed upon by the Parties, Mosaic shall provide notice of its intent to conduct such test to U.S. EPA and the LDEQ, using the procedures specified in Section XV (Notices). This notification must include the scheduled date of the test, an emissions test protocol, a description of the planned operating rate and operating conditions, and the procedures that will be used to measure 100% Sulfuric Acid Produced. If U.S. EPA or LDEQ requires any adjustment of the testing protocol or operating conditions, Mosaic shall make such adjustments and conduct the performance test in conformity with U.S. EPA's and/or LDEQ's requirements.

e. Report of Results. By no later than 60 Days after conducting a performance test required under this Paragraph 15, or such other period as agreed upon by the Parties, Mosaic shall submit to U.S. EPA and to LDEQ, pursuant to the requirements of Section XV (Notices), a report documenting the results of the performance tests.

16. **Cessation of Operation:**

a. Upon the cessation of operation of the A or D Train, Defendant shall surrender all air pollution permits for the A or D Train to the permitting authority. Defendant shall not file any application for emission reduction credits as a result of such cessation of operation. Defendant shall not use any emission reductions resulting from such cessation of operation in any netting calculation. Defendant shall not sell any emission credits obtained as a result of emission reductions and resulting from such cessation of operation.

b. Provided that Defendant has complied with the requirements of Subparagraph

a above, then upon the cessation of operation of A or D Train, that Sulfuric Acid Plant shall cease to be subject to the provisions of this Consent Decree applicable to the Sulfuric Acid Plant from which the operations are ceased, except for the obligation to pay any stipulated penalties and civil penalty, if not previously paid, that may be due pursuant to Sections VIII or IX with respect to that Sulfuric Acid Plant and the recordkeeping requirement in Paragraph 74.

V. ENVIRONMENTAL MITIGATION PROJECTS/ADDITIONAL INJUNCTIVE RELIEF

17. Mosaic shall implement the environmental mitigation projects ("Projects") and additional injunctive relief described in this Section. By entering into this Consent Decree, Mosaic certifies that it is not, to its knowledge, otherwise required by law to perform the Projects described in this Section, and that Mosaic will not use any Project or portion thereof, to satisfy any obligations that it may have under other applicable requirements of law.

a. E Train. Mosaic shall take the following measures to reduce and demonstrate reductions in emissions at the E Train.

i. By no later than December 30, 2010, Mosaic shall install cesium promoted catalyst in the fourth bed of the E Train converter. Mosaic shall select catalyst trade named "SCX 2000" manufactured by MECS, Inc., "VK 69" manufactured by Haldor Topsoe, or equivalent catalyst approved by U.S. EPA in writing no later than June 30, 2010.

ii. By no later than June 30, 2012, Mosaic shall evaluate the performance of the E Train converter and heat exchangers and make any improvements it deems necessary to reduce emissions, improve conversion, or otherwise improve performance of the E Train to comply with the Mass Cap specified in this paragraph. Such steps may include, but are not limited to, replacing heat exchangers and/or catalyst.

iii. By no later than July 1, 2012, the E Train shall be subject to a Mass

Cap of 1,832 tons per year of SO_2. Mosaic shall demonstrate compliance with this annual Mass Cap as of July 1, 2013 (for the 12-month period of July 1, 2012 through June 30, 2013) and thereafter as of the first of each month for the immediately preceding consecutive 12-month period.

iv. Mosaic shall conduct performance tests of the E Train by the dates and in the manner specified in Paragraph 15 of this Consent Decree.

b. Mulberry Sulfuric Acid Plant. Mosaic has ceased acid production at, and shall within six (6) months of the Effective Date of this Consent Decree, permanently terminate the acid production at the Mulberry Sulfuric Acid Plant and submit an application to the permitting authority to specify that the Mulberry Sulfuric Acid Plant is permanently shut down. Emission reductions generated by shutting down the Mulberry Sulfuric Acid Plant shall not be considered as creditable contemporaneous emissions decreases for the purpose of obtaining netting credits under the CAA's NSR and PSD programs. In the event of any future resumption of acid production at the Mulberry Sulfuric Acid Plant, that emissions unit will be considered to have zero emissions of all regulated pollutants under NSR or PSD as its baseline actual emissions for purposes of NSR or PSD permitting.

VI. PERMITS

18. Defendant shall obtain all required federal, state, or local permits necessary for performing any compliance obligation under this Consent Decree, including without limitation permits for construction of pollution control technology and the installation of equipment. Defendant may seek relief under the provisions of Section X (Force Majeure) of this Consent Decree for any delay in the performance of any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation if Defendant

has submitted timely and administratively complete applications and has taken all other actions necessary to obtain such permit(s) or approval(s). No later than August 1, 2013 or, in the event that Mosaic chooses to invoke Subparagraph 8.g., 90 Days after receiving the written notice of the final emission limits as specified in Subparagraph 8.g. for the A Train Sulfuric Acid Plant and by no later than January 1, 2012, for the D Train Sulfuric Acid Plant, Mosaic shall submit an administratively complete application to the LDEQ permitting authority to incorporate the following requirements into federally-enforceable minor or major NSR permits or other permits (other than Title V permits) which are federally enforceable for each facility:

a. All Short-Term Limits, Long-Term Limits and Mass Caps for SO_2 emissions established in Paragraphs 8 and 9 of this Consent Decree;

b. For the A Train, the emission limit during Startup;

c. For the A Train, the acid mist emission limit established in Paragraph 10 of this Consent Decree;

d. The monitoring requirements established in the CEMS Plans; and

e. For the A Train, the applicability of 40 C.F.R. Part 60, Subparts A and H and all requirements therein.

19. Following submission of the complete permit applications described in Paragraph 18, Defendant shall cooperate with the LDEQ and any applicable local agency. Defendant shall file any applications necessary to incorporate the requirements of those permits into the Title V Permit for the relevant facility in accordance with state Title V rules.

20. Emission Limits and Standards: Prior to termination of the Consent Decree, the following Consent Decree requirements shall be incorporated into the permits required under Paragraph 18 and in the Uncle Sam Facility's Title V operating permit:

a. All Short-Term Limits, Long-Term Limits and Mass Caps for SO_2 emissions established in Paragraphs 8 and 9 of this Consent Decree;

b. For the A Train, the emission limit during Startup;

c. For the A Train, the acid mist emission limit established in Paragraph 10 of this Consent Decree;

d. The monitoring requirements established in the CEMS Plans; and

e. For the A Train, the applicability of 40 C.F.R. Part 60, Subparts A and H and all requirements therein.

21. Mechanism for Title V Incorporation: The incorporation of the requirements of this Consent Decree into Title V Permits shall be in accordance with state Title V rules, including applicable administrative amendment provisions of such rules.

22. Notwithstanding the reference to a Title V permit in this Consent Decree, the enforcement of such permit shall be in accordance with its own terms and the Act. The Title V permit shall not be enforceable under this Consent Decree, although any term or limit established by or under this Consent Decree shall be enforceable under this Consent Decree regardless of whether such term has or will become part of a Title V permit, subject to the terms of Section XIX (Termination) of this Consent Decree. Nothing in this Consent Decree is meant to preclude enforcement of the underlying permit or terms of the underlying permit included in the Title V permit.

23. Using the procedures set forth in Section XV (Notices), Defendant shall provide U.S. EPA with a copy of each application for a federally enforceable permit necessary to implement the requirements of this Consent Decree that is filed after the Effective Date, as well as a copy of any permit proposed as a result of such application, to allow for timely participation in any

public comment opportunity. If, as of the Effective Date, Defendant has received any permit necessary to implement the requirements of this Consent Decree, then no later than 30 days after the Effective Date, Defendant shall submit copies of such permits to U.S. EPA using the procedures set forth in Section XV (Notices). U.S. EPA may excuse in writing all or part of the latter submission if copies of such permits have already been submitted to U.S. EPA prior to the Effective Date.

24. Emission Credit Generation: Defendant shall neither generate nor use any SO_2 or acid mist emission reductions resulting from any Projects conducted pursuant to this Consent Decree for the purpose of obtaining netting credits or offsets in any PSD, major NSR, and/or minor NSR permit or permit proceeding; provided however, that nothing in this Consent Decree is intended to prohibit Defendant from:

a. using emission reductions from the installation of controls required by this Consent Decree in determining whether a project that includes both the installation of controls under this Consent Decree and other construction or modifications (including construction or modifications that affect the facility's production capacity) that occur at the same time and are permitted as a single project triggers PSD and/or NSR requirements;

b. using netting reductions or emission offset credits from units that are covered by this Consent Decree, to the extent that the proposed netting reductions or emission offset credits represent the difference between the emission limits set forth in this Consent Decree and the more stringent emission limits that Defendant may elect to accept for these units in a permitting process;

c. using netting reductions or emissions offset credits from units that are not subject to an emission limitation under this Consent Decree;

d. using netting reductions or emissions offset credits for any pollutants other than SO_2 or sulfuric acid mist.

VII. REPORTING REQUIREMENTS

25. Defendant shall submit the following reports:

a. For each Sulfuric Acid Plant, Defendant shall submit to U.S. EPA and LDEQ, design specifications documenting how Defendant intends to comply with the emission limits established in Paragraphs 8 and 9, no later than one year before the date specified in Paragraphs 8 and 9 for compliance with the applicable SO_2 emissions limit.

b. After the Effective Date and before the termination of this Consent Decree, Defendant shall submit to U.S. EPA and to LDEQ a semi-annual progress report no later than January 31 and July 31 of each year, with the first report due on January 31, 2010. Each semi-annual progress report shall contain the following information with respect to the six months preceding its submission: (1) work performed and progress made toward implementing the requirements of Sections IV and V above; (2) any significant modifications to previously-submitted design specifications of any pollution control system, or to monitoring equipment, required to comply with the requirements of Sections IV and V above; (3) any significant problems encountered or anticipated in complying with the requirements of Sections IV and V above, together with implemented or proposed solutions; (4) a summary of the emissions monitoring and testing data collected pursuant to this Consent Decree including the mass of SO_2 emitted and the quantity of 100% Sulfuric Acid Produced during the reporting period; (5) a description of all periods of Startup, Shutdown, and Malfunction for A and D Trains, including the quantity of SO_2 emitted and the causes of Malfunction(s); (6) the date and time identifying each period during which the CEMS was inoperative except for zero and span checks and the

nature of the system repairs or adjustments; (7) status of permit applications and a summary of all permitting activity pertaining to compliance with this Consent Decree; (8) any reports to LDEQ pertaining to compliance with this Consent Decree; and (9) all changes or updates made to the O&M Plans specified in Paragraph 13.

c. If Defendant violates, or has reason to believe that it may violate, any requirement of this Consent Decree or of any applicable permit, Defendant shall notify the United States and the State Plaintiff of such violation and its duration or anticipated likely duration, in writing, within 35 calendar days of the Day Defendant first becomes aware of the violation or potential violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, Defendant shall so state in the report. Defendant shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day Defendant becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves Defendant of its obligation to provide the notice required by Section X (Force Majeure).

d. Whenever any violation of this Consent Decree or of any applicable permit or any other event affecting Defendant's performance under this Decree, or the performance of a Sulfuric Acid Plant, may pose an immediate threat to the public health or welfare or the environment, Defendant shall notify U.S. EPA and the State, orally or by electronic or facsimile transmission as soon as possible, but no later than 24 hours after Defendant first knew of, or should have known of, the violation or event. This procedure is in addition to the requirements set forth in the preceding reporting provisions.

26. All reports shall be submitted to the persons and in the manner designated in Section XV (Notices).

27. Each report submitted by Defendant under this Section shall be signed by a plant manager, a corporate official responsible for environmental management and compliance, or a corporate official responsible for plant management of the Defendant, and shall include the following certification:

> I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

28. The reporting requirements of this Consent Decree do not relieve Defendant of any reporting obligations required by the Act or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement. The reporting requirements of this Section are in addition to any other reports, plans or submissions required by other Sections of this Consent Decree.

29. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law. All information and documents submitted by Mosaic to the United States or to the State pursuant to this Consent Decree shall be subject to public inspection, unless identified and supported as Confidential Business Information ("CBI") by Mosaic in accordance with 40 C.F.R. Part 2 and other applicable state law.

VIII. CIVIL PENALTY

30. Within thirty (30) Days after the Effective Date of this Consent Decree, Defendant shall pay to the Plaintiffs $2.4 million as a civil penalty, in the following manner:

a. $1.8 million to the United States by FedWire Electronic Funds Transfer ("EFT") to the U.S. Department of Justice ("DOJ") in accordance with instructions to be provided to Defendant, following lodging of the Consent Decree, by the Financial Litigation Unit of the United States Attorney's Office for the Eastern District of Louisiana. At the time of payment, Defendant shall simultaneously send written notice of payment and a copy of any transmittal documentation (which shall reference DOJ case number 90-5-2-1-08957, USAO file number 2006V00316 and the civil action number of this case) to the United States in accordance with Section XV of this Decree (Notices); and

b. $600,000 to the State of Louisiana by certified check made payable to LDEQ and sent to Darryl Serio, Fiscal Director, Office of Management and Finance, LDEQ, P.O. Box 4303, Baton Rouge, Louisiana 70821-4303.

31. If any portion of the civil penalty due to the United States or the State Plaintiff is not paid when due, Defendant shall pay interest on the amount past due, accruing from the Effective Date through the date of payment, at the rate specified in 28 U.S.C. § 1961. Interest payment under this Paragraph shall be in addition to any stipulated penalty due. No amount of the civil penalty or interest paid by Defendant shall be used to reduce its federal or state tax obligations.

IX. STIPULATED PENALTIES

32. Defendant shall be liable for stipulated penalties to the United States and to the State Plaintiff for violations of this Consent Decree as specified below, unless excused under Section X (Force Majeure). Any stipulated penalties due under this Section shall be paid in accordance

with Paragraph 48 below. All transmittal correspondence shall state that any such payment is for payment of stipulated penalties and shall include the same identifying information required by Paragraph 30 (Civil Penalty) above.

33. Failure to Pay Civil Penalty: If Defendant fails to pay any portion of the civil penalty required to be paid under Section VIII (Civil Penalty) when due, Defendant shall pay a stipulated penalty of $1,000 per day for each day that the payment is late. Late payment of the civil penalty shall be made in accordance with Paragraph 30 above. Each stipulated penalty due under this Paragraph shall be paid exclusively to the Party to whom Defendant failed to make timely payment of the full civil penalty due.

34. Short-Term SO_2 Limits set forth in Paragraphs 8 and 9.

a. The following stipulated penalties shall accrue for each violation of the Short-Term SO_2 Limit in any non-overlapping 3-hour period:

Percentage Over the Limit	Penalty per Violation
1 - 50%	$250
51 - 100%	$500
Over 100%	$750

No separate stipulated penalty will apply with respect to the limit on SO_2 emissions under 40 C.F.R. Part 60.

b. Solely in the event of a dispute regarding the Short-Term Limit (and corresponding Mass Cap) for A Train following the demonstration period under Paragraph 8.g, and solely during the period of time between Mosaic's invocation of Dispute Resolution and the Court's decision resolving such dispute, and provided that Mosaic complies with its proposed Short-Term Limit under Paragraph 8.g.i (in accordance with Paragraph 8.g.iv), the stipulated

penalties accruing under this subparagraph shall be reduced in proportion to the percentage by which Mosaic's proposed Short-Term Limit exceeds the Short-Term Limit determined by U.S. EPA under Paragraph 8.g.iii, multiplied by two ("adjusted amount"). In addition, should the Court take more than six months to resolve the dispute following the time the dispute is briefed and submitted for decision, the stipulated penalty during the pendency of the dispute shall accrue at 50% of the adjusted amount in each month after the six months following submission of the dispute until decision by the Court, and at 25% of the adjusted amount in each month after the twelfth month following submission of the dispute. For example, if U.S. EPA determines under Paragraph 8.g.iii that Mosaic's Short-Term Limit for A Train shall be 1.0 lb/ton and Mosaic invokes Dispute Resolution proposing a Short-Term Limit of 1.2 lb/ton, which is 20% higher than 1.0 lb/ton, then Mosaic's stipulated penalty liability for exceeding the 1.0 lb/ton Short-Term Limit shall accrue at 40% (20% x 2) of the otherwise applicable stipulated penalty under Subparagraph 34.a., provided that Mosaic complies with its proposed Short-Term Limit of 1.2 lb/ton during the pendency of the dispute. Thus, in this example, the otherwise applicable stipulated penalty under Subparagraph 34.a. (for a violation ranging between 1 - 50% over the limit) is $250/violation. Should the Court eventually resolve the dispute in U.S. EPA's favor, stipulated penalties for the period of time the dispute was pending would accrue at 40% x $250 = $100 per violation, provided that Mosaic complies with its proposed Short-Term Limit of 1.2 lb/ton during the pendency of the dispute. If the dispute is not resolved until at least six months after submission of the dispute to the Court, the stipulated penalty accrual would be reduced after six months and would accrue at $50 per violation (50% x $100) beginning with the seventh month following submission of the dispute to the Court; if it is not resolved until after twelve months, the stipulated penalty accrual would be further reduced after twelve months and would

accrue at $25 per violation (25% x $100) beginning with the thirteenth month following submission of the dispute to the Court.

35. A Train Startup Limit in Paragraph 8. The following stipulated penalties shall accrue for each violation of the A Train Startup emission limitation specified in Paragraph 8.b:

Percentage Over the Limit	Penalty per Violation
1 - 50%	$250
51 - 100%	$500
Over 100%	$750

36. Long-Term SO_2 Limit as set forth in Paragraph 9. The following penalty shall accrue for each day in violation of the D Train Long-Term Limit:

Period of Noncompliance	Penalty per Violation
1st - 14th day	$1000
15th - 30th day	$1500
31st day and each day thereafter	$2000

e.g., a violation of the Long-Term Limit lasting 40 consecutive days will result in $58,000 in stipulated penalties (*i.e.* ($1000 × 14) + ($1500 × 16) + ($2000 × 10)). No separate stipulated penalty will apply with respect to the limit on SO_2 emissions under 40 C.F.R. Part 60.

37. Mass Cap.

a. For each violation of a Mass Cap identified in Paragraphs 8 and 9, a stipulated penalty of $15,000 per ton or fraction of a ton of SO_2 emitted in excess of the applicable Mass Cap (*e.g.*, exceeding the Mass Cap by 2.1 tons would result in $45,000 ($15,000 x 3) in stipulated penalties.) In no event shall the stipulated penalty exceed $900,000 for any one

month. A Mass Cap violation may occur only one time per month and only when the sum of the SO_2 emitted in the immediately preceding 12 months exceeds the Mass Cap.

b. Solely in the event of a dispute regarding the Mass Cap (and corresponding Short-Term Limit) for A Train following the demonstration period under Paragraph 8.g, and solely during the period of time between Mosaic's invocation of Dispute Resolution and the Court's decision resolving such dispute, and provided that Mosaic complies with the Mass Cap associated with its proposed Short-Term Limit under Paragraph 8.g.i (in accordance with Paragraph 8.g.iv), the stipulated penalties accruing under this subparagraph shall be reduced in proportion to the percentage by which Mosaic's proposed Mass Cap exceeds the Mass Cap determined by U.S. EPA under Paragraph 8.g.iii, multiplied by two ("adjusted amount"). In addition, should the Court take more than six months to resolve the dispute following the time the dispute is briefed and submitted for decision, the stipulated penalty during the pendency of the dispute shall accrue at 50% of the adjusted amount in each month after the six months following submission of the dispute until decision by the Court, and at 25% of the adjusted amount in each month after the twelfth month following submission of the dispute. For example, if U.S. EPA determines under Paragraph 8.g.iii that Mosaic's Mass Cap for A Train shall be 402 tons and Mosaic invokes Dispute Resolution proposing a Mass Cap of 483, which is 20% and 81 tons higher than 402 tons, then Mosaic's stipulated penalty liability for exceeding the 402 tons Mass Cap shall accrue at 40% (20% x 2) of the otherwise applicable stipulated penalty under subparagraph a., provided that Mosaic complies with its proposed Mass Cap of 483 tons during the pendency of the dispute. Thus, in this example, the otherwise applicable stipulated penalty would be 81 tons x $15,000 per violation = $1,215,000. This amount exceeds the $900,000 stipulated penalty limit in subparagraph a. for any month, making the otherwise applicable

stipulated penalty $900,000. In the event of a dispute and should the Court eventually resolve the dispute in U.S. EPA's favor, Mosaic's stipulated penalty limit would accrue at 40% x $900,000 = $360,000 per month, provided that Mosaic complies with its proposed Mass Cap of 483 tons during the pendency of the dispute. If the dispute is not resolved until at least six months after submission of the dispute to the Court, the stipulated penalty accrual would be reduced after six months and would accrue at $180,000 per month (50% x $360,000) beginning with the seventh month following submission of the dispute to the Court; if not resolved until after twelve months, the stipulated penalty accrual would be further reduced after twelve months and would accrue at $90,000 per month (25% x $360,000) beginning with the thirteenth month following submission of the dispute to the Court.

38. Monitoring Requirements. The following stipulated penalties shall accrue per day where the CEMS fails to operate in accordance with any requirement identified in Paragraph 14 and/or the applicable CEMS Plan. This will be calculated over the course of each calendar year (*e.g.*, January 1 – December 31).

Period of Noncompliance (Total days in violation in any calendar year)	Penalty Per Day
1st - 14th day	$1500
15th - 30th day	$2000
31st day and each day thereafter	$2500

e.g., if Mosaic fails to operate a CEMS in accordance with any requirement identified in Paragraph 14 and/or the applicable CEMS Plan for 40 days in any calendar year, consecutive or not, the result will be $78,000 in stipulated penalties (*i.e.* ($1500 × 14) + ($2000 × 16) + ($2500 × 10)).

39. Performance Testing. The following stipulated penalties shall accrue per violation per day for each violation of any requirements identified in Paragraph 15 relating to performance testing:

Period of Noncompliance	Penalty Per Violation Per Day
1st - 14th day	$1000
15th - 30th day	$1500
31st day and beyond	$2000

40. Opacity Limits in the NSPS for A and D Trains. For each violation at the A and D Trains of the opacity requirements of 40 C.F.R. § 60.83(a)(2), as demonstrated by a Method 9 reference test, $40 per six (6) minute average reading in excess of the limit, up to a maximum of $2000 per day.

41. Permitting Requirements. The following stipulated penalties shall accrue per violation per day for each violation of any requirement to submit a complete application for permits as required and on the schedule specified in Section VI (Permits):

Period of Noncompliance	Penalty Per Violation Per Day
1st - 14th day	$1000
15th - 30th day	$1500
31st day and beyond	$2000

42. Environmental Mitigation Projects/Additional Injunctive Relief. Stipulated penalties shall accrue for each violation of any of the requirements set forth in Section V (Environmental Mitigation Projects/Additional Injunctive Relief) as follows: For each violation of the Mass Cap for E Train identified in Paragraph 17.a.iii, a stipulated penalty of $15,000 per ton or fraction of SO_2 emitted in excess of the applicable Mass Cap (using the same calculation methodology

described in Paragraph 37.a above). For each other violation of the requirements of Paragraph 17, the following stipulated penalties shall accrue per violation per day:

Period of Noncompliance	Penalty Per Violation Per Day
1st - 14th day	$1000
15th - 30th day	$1500
31st day and beyond	$2000

43. Reporting Requirements. The following stipulated penalties shall accrue for: failure to submit design specifications within the period specified in Paragraph 25.a of this Consent Decree; failure to submit a semi-annual progress report within the period specified in Paragraph 25.b of this Consent Decree; failure to notify the United States and the applicable State Plaintiff of a violation of, or reason to believe it may violate, this Consent Decree or any applicable permit within the period specified in Paragraph 25.c of this Consent Decree; or failure to notify U.S. EPA and/or the State of an event that may pose an immediate threat to the public health or welfare or the environment within the period specified in Paragraph 25.d of this Consent Decree.

Period of Noncompliance	Penalty Per Violation Per Day
1st - 14th day	$150
15th - 30th day	$250
31st day and beyond	$500

44. The following stipulated penalties shall accrue per violation per day for Defendant's failure to comply with any requirement, not specifically referenced in Paragraphs 32 through 43 above, of this Consent Decree or of any plan or schedule approved under this Consent Decree, within the specified time established by or approved under this Decree:

Period of Noncompliance	Penalty Per Violation Per Day
1st -14th day	$150
15th - 30th day	$250
31st day and beyond	$500

45. Stipulated penalties under this Section shall begin to accrue on the day after performance is due or on the day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree. Defendant shall pay any stipulated penalty within 30 days of receiving the United States' or the State Plaintiff's written demand. The United States and/or the State Plaintiff may seek stipulated penalties under this Section. Where both sovereigns seek stipulated penalties for the same violation of this Consent Decree, Defendant shall pay 50 percent to the United States and 50 percent to the State Plaintiff. Where only one sovereign demands stipulated penalties for a violation, it shall make that demand on its own behalf, and the Defendant shall pay the full amount of the stipulated penalties due for the violation to that sovereign, and Defendant shall not be liable for additional stipulated penalties to any other sovereign for that violation.

46. The United States and the State Plaintiff may each, in the unreviewable exercise of its discretion, reduce or waive stipulated penalties or other relief otherwise due it under this Consent Decree. The determination by one sovereign not to seek stipulated penalties, or subsequently to waive or reduce the amount it seeks, shall not preclude the other sovereign from seeking stipulated penalties up to the full amount owed to that sovereign.

47. Stipulated penalties shall continue to accrue as provided in Paragraph 45 above, during any dispute resolution, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of the United States or the State Plaintiff that is not appealed to the Court, Defendant shall pay accrued penalties determined owed, together with interest, at the rate specified in 28 U.S.C. § 1961, to the United States and/or the State Plaintiff within 30 days of the effective date of the agreement or the receipt of U.S. EPA's or the State Plaintiff's decision.

b. If the dispute is appealed to the Court and the United States and/or the State Plaintiff prevails in whole or in part, Defendant shall pay all accrued penalties that the Court determines Defendant owes, together with interest, at the rate specified in 28 U.S.C. § 1961, within 60 days of receiving the Court's decision or order, except as provided in Subparagraph c, below.

c. If any Party appeals the District Court's decision, Defendant shall pay all accrued penalties owed, together with interest at the rate specified in 28 U.S.C. § 1961, no later than 30 days after the administrative decision or judicial order, judgment or decree resolving the dispute becomes final and not subject to any further appeal.

48. Defendant shall pay stipulated penalties owed to the United States in accordance with Paragraph 30.a, above, or by certified or cashier's check in the amount due, payable to the "U.S. Department of Justice," referencing DOJ No. 90-5-2-1-08957 and United States Attorney's Office file number 2006V00316, and delivered to the office of the United States Attorney, U.S. District Court Eastern District of Louisiana, 500 Poydras Street, New Orleans, LA 70130, (504) 680-3000. Defendant shall pay stipulated penalties owed to the State Plaintiff in the same manner prescribed for payment of the civil penalty in Paragraph 30.b above.

49. No amount of the stipulated penalties to be paid by Defendant shall be used to reduce its federal or state tax obligations.

50. If Defendant fails to pay stipulated penalties according to the terms of this Consent Decree, Defendant shall be liable for interest at the rate specified in 28 U.S.C. § 1961, accruing as of the date payment became due.

51. Subject to the provisions of Section XIII (Effect of Settlement/Reservation of Rights), the Stipulated Penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for Defendant's violation of this Consent Decree or applicable law. If the violations result in excess emissions, the United States and/or the State may elect to seek appropriate relief, including but not limited to compensatory emission reductions equal to or greater than the excess amounts emitted. Where a violation of this Consent Decree is also a violation of the NSPS, Subparts A or H, or the PSD or non-attainment NSR requirements, Defendant shall be allowed a credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

X. FORCE MAJEURE

52. A "Force Majeure Event" is any event beyond the control of Defendant, its contractors, or any entity controlled by Defendant that delays the performance of any obligation under this Consent Decree despite Defendant's best efforts to fulfill the obligation. "Best efforts" includes anticipating any potential force majeure event and addressing the effects of any such event (a) as it is occurring and (b) after it has occurred, to prevent or minimize any resulting delay to the greatest extent possible.

53. "Force Majeure" does not include Defendant's financial inability to perform any obligation under this Consent Decree. Unanticipated or increased costs or expenses associated with the performance of Defendant's obligations under this Consent Decree, or Defendant's failure to make an administratively complete and timely application for any required approval or

permit, shall not constitute circumstances beyond its control, or serve as a basis for an extension of time under this Section X. However, the failure of a permitting authority to issue a necessary construction or operating permit in a timely fashion is an event of force majeure where the failure of the permitting authority to issue the relevant permit is beyond the control of Defendant.

54. If any event occurs which causes or may cause a delay or impediment to performance in complying with any provision of this Consent Decree, Defendant shall notify U.S. EPA and the State Plaintiff: (a) orally or by electronic or facsimile transmission, as soon as possible, but no later than 72 hours after the time Defendant first knew of the event or should have known of the event by exercise of due diligence, and (b) in writing no later than seven Days after the time Defendant first knew of the event or should have known of the event by the exercise of due diligence. In this notice, Defendant shall specifically reference this Paragraph 54 of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, the measures taken or to be taken by Defendant to prevent or minimize the delay, the schedule by which those measures shall be implemented, and the reasons Defendant attributes the delay to a Force Majeure Event (if Defendant does so). Defendant shall take all necessary measures to avoid or minimize such delays. The written notice required by this Paragraph shall be effective upon the mailing of the same by overnight mail or by certified mail, return receipt requested, to U.S. EPA and the State Plaintiff as specified in Section XV (Notice).

55. Failure by Defendant to comply with the notice requirements specified in Paragraph 54 above shall preclude Defendant from asserting any claims of Force Majeure with respect to the particular event involved, unless notice, though delinquent, is provided in sufficient time to allow U.S. EPA and the State Plaintiff to verify the cause and nature of the event in question; except that, in any event, if notice is delinquent, Defendant shall be precluded from asserting any

claims of Force Majeure as justification for failure to comply with any requirement of this Consent Decree for a period of time equal to the time by which notice was delinquent.

56. The United States, after consultation with the State Plaintiff, will notify Defendant in writing regarding the United States' position regarding Defendant's claim of a delay or impediment to performance within forty-five (45) days of receipt of the written Force Majeure notice provided under Paragraph 54**.**

57. If the United States, after consultation with the State Plaintiff, agrees that the delay or impediment to performance has been or will be caused by a Force Majeure Event, the Parties shall stipulate in writing to an extension of the required deadline(s) for all requirement(s) affected by the Force Majeure Event for a period equivalent to the delay actually caused by the Force Majeure Event. Such stipulation shall be filed as a material modification to the Consent Decree pursuant to the procedures of Section XVIII (Modification). Defendant shall not be liable for stipulated penalties for the period of any such extension.

58. If the United States, after consultation with the State Plaintiff, does not accept Defendant's claim of Force Majeure, stipulated penalties will accrue as provided in Section IX (Stipulated Penalties). No later than forty-five (45) days after receipt of the notice provided under Paragraph 56 above, Defendant may invoke formal dispute resolution with respect to the claim of Force Majeure, pursuant to Paragraphs 63 through 72 below, by filing a petition for determination with the Court. If the Court determines that the delay or impediment to performance has been or will be caused by a Force Majeure Event, Defendant shall be excused as to that event(s) and delay (including stipulated penalties) for a period of time equivalent to the delay caused by the Force Majeure Event. Defendant will bear the burden of proving that any delay in satisfying any requirement(s) of this Consent Decree was caused by or will be caused by

a Force Majeure Event.

59. Defendant shall also bear the burden of proving the duration and extent of any delay(s) attributable to such Force Majeure Event. Any extension of one compliance date based on a particular Force Majeure Event may, but shall not necessarily, result in an extension of a subsequent compliance date or dates.

60. Notwithstanding any other provision of this Consent Decree, this Court shall not draw any inferences nor establish any presumptions adverse to either party as a result of Defendant's serving of a force majeure notice or the Parties' inability to reach agreement with respect to the claim of force majeure.

61. In appropriate circumstances, as part of the resolution of any matter submitted to this Court under this Section X, the Parties involved in the dispute may agree to, or the Court may order, extension or modification of the schedule for completion of work under the Consent Decree to account for the delay in the work that occurred as a result of any Force Majeure Event claimed by Defendant that is agreed to by the United States or approved by this Court. Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

62. Potential Force Majeure Events. The Parties agree that, depending upon the circumstances related to an event and Defendant's response to such circumstances, the kinds of events listed below are among those that could qualify as Force Majeure Events within the meaning of this Section: construction, installation, labor, or equipment shortages or delays; acts of God, such as a hurricane; acts of war or terrorism; an order by a government official, government agency, or other regulatory authority. The listing of the foregoing types of events shall neither (1) preclude the United States (or the Court, in the event of a dispute) from

determining that a particular event in one of the enumerated categories does not qualify as a Force Majeure Event (as defined in this Section) in light of the specific facts and circumstances pertaining to the event, nor (ii) preclude the Defendant from invoking force majeure for reasons other than those listed above.

XI. DISPUTE RESOLUTION

63. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. Defendant's failure to seek resolution of a dispute under this Section shall preclude Defendant from raising any such issue as a defense to an action by the United States to enforce any obligation of Defendant arising under this Decree.

64. Except as otherwise expressly provided in this Consent Decree, the dispute resolution procedures set forth in this Section XI shall be available to resolve any and all disputes arising under this Consent Decree, provided that the Party invoking the procedures has made a good faith attempt to resolve the matter with the other Party or Parties involved.

65. The dispute resolution procedure required herein shall be invoked upon the giving of written notice by one of the Parties to this Consent Decree to another advising the other appropriate Party(ies) of a dispute pursuant to Section XI. The notice shall describe the nature of the dispute and shall state the noticing Party's position with regard to such dispute. The Party or Parties receiving such notice will acknowledge receipt of the notice and the Parties shall expeditiously schedule a meeting to discuss the dispute informally no later than fourteen (14) days from the receipt of such notice.

66. Disputes submitted to dispute resolution shall, in the first instance, be the subject of informal negotiations between the Parties. Such period of informal negotiations shall not extend

beyond thirty (30) days from the date of the first meeting between representatives of the Parties, unless the Parties involved in the dispute agree that this period should be shortened or extended.

67. In the event that the Parties are unable to reach agreement during such informal negotiations period, the United States and/or the State Plaintiff, as applicable, shall provide Defendant with a written summary of its/their position regarding the dispute. The position advanced by the United States and/or the State Plaintiff, as applicable, will be considered binding unless, within forty-five (45) Days of Defendant's receipt of the written summary, Defendant invokes formal dispute resolution by filing with the Court a petition which describes the nature of the dispute and Defendant's position on the dispute. Counsel filing a petition invoking formal dispute resolution shall, at the time of filing, notice it for hearing in accordance with the Eastern District of Louisiana local rules. Such petition shall be filed no later than fifty-five (55) Days preceding the notice hearing date. The United States and/or the State of Louisiana shall respond to the petition no later than the eighth calendar day prior to the noticed hearing date.

68. The time periods set out in this Section may be shortened or lengthened, in accordance with the Eastern District of Louisiana local rules, upon motion to the Court of one of the Parties to the dispute, explaining the Party's basis for seeking such a scheduling modification, or by agreement of the Parties to the dispute.

69. In the event that the United States and the State Plaintiff are unable to reach agreement among themselves with regard to the Defendant's claim, the position of the United States shall be the Plaintiffs' final position. A dissenting State Plaintiff may file such other pleadings expressing its position as allowed by the Court.

70. In a formal dispute resolution proceeding under this Section, Defendant shall bear the burden of demonstrating that its position complies with this Consent Decree and the Act. The

Court shall decide the dispute based upon applicable principles of law. The United States reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with the law.

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

72. In appropriate circumstances, as part of the resolution of any matter submitted to this Court under this Section XI, the Parties involved in the dispute may agree to, or the Court may order, an extension or modification of the schedule for completion of work under the Consent Decree to account for the delay in the work that occurred as a result of dispute resolution. Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule. Invocation of dispute resolution with respect to any of Defendant's obligations under this Consent Decree shall not, of itself, excuse or extend the time for performance of any other obligation of Defendant under this Consent Decree.

XII. INFORMATION COLLECTION AND RETENTION

73. The United States, the State Plaintiff, and their representatives, including attorneys, inspectors, contractors, and consultants, shall have the right of entry into any of the Facilities covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to: monitor the progress of activities required under this Consent Decree; verify any data or information submitted to the United States or a State Plaintiff in accordance with the terms of this Consent Decree; obtain samples and, upon request, splits of any samples taken by Defendant or its representatives, contractors, or consultants; obtain documentary evidence, including photographs and similar data; and assess Defendant's compliance with this Consent Decree.

74. Until at least three years after the termination of this Consent Decree, Defendant shall retain, and shall instruct its contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its contractors' or agents' possession or control, or that come into its or its contractors' or agents' possession or control, and that relate in any manner to Defendant's performance of its obligations under this Consent Decree. This information retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, the United States or a State Plaintiff may request copies of any documents, records, or other information required to be maintained under this Paragraph.

75. If Defendant desires to revert to its ordinary document retention policy in regards to documents it is otherwise required to retain, at least 90 Days prior to the expiration of the document retention period, Defendant shall notify the United States and the State of its intention to revert back to its ordinary document retention policy. Should the United States request copies, Defendant may assert that certain documents, records, or other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Defendant asserts such a privilege, it shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Defendant. However, no documents, records, data, or other information created or generated pursuant to the requirements of this Consent Decree shall be withheld on grounds of privilege.

76. Defendant may also assert that information required to be provided under this Section is protected as CBI under 40 C.F.R. Part 2. As to any information that Defendant seeks to protect as CBI, Defendant shall follow the procedures set forth in 40 C.F.R. Part 2.

77. The information retention requirements of Paragraphs 74 and 75 shall survive termination of this Consent Decree and shall be enforceable by this Court even after such termination. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or the State pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of Defendant to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

78. This Consent Decree resolves the civil liability of Defendant to the United States and the State of Louisiana for the violations alleged in the Complaint filed in this action from the date those claims accrued through the date of lodging of this Consent Decree.

79. The United States and the State Plaintiff reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraph 78. This Consent Decree shall not be construed to limit the rights of the United States or the State Plaintiff to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Paragraph 78. The United States and the State Plaintiff further reserve all legal and equitable remedies to address any situation that may present an imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, Defendant's facilities, whether related to the violations addressed in this Consent Decree or

otherwise.

80. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. Defendant is responsible for achieving and maintaining compliance with all applicable federal, state, and local laws, regulations, and permits; and Defendant's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as otherwise expressly provided herein. The United States and the State Plaintiff do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Defendant's compliance with any aspect of this Consent Decree will result in compliance with provisions of the Act, or with any other provisions of federal, state, or local laws, regulations, or permits, except as otherwise expressly provided herein.

81. Nothing in this Consent Decree is intended to preclude Mosaic from increasing production and annual mass emissions at any Sulfuric Acid Plant covered under the Consent Decree following termination of this Consent Decree provided that Mosaic complies with all applicable legal requirements, including as applicable PSD permitting.

82. This Consent Decree does not limit or affect the rights of Defendant or of the United States or the State Plaintiff against or in respect of any third parties, not party to this Consent Decree, nor does it limit or affect the rights of third parties, not party to this Consent Decree, against Defendant, except as otherwise provided by law.

83. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third-party that is not a Party to this Consent Decree.

XIV. COSTS

84. The Parties shall bear their own costs of this action, including attorneys' fees, except

that the United States and the State Plaintiffs shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to enforce this Consent Decree or to collect any portion of the civil penalty or any Stipulated Penalties due but not paid by Defendant.

XV. NOTICES

85. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed to the United States Department of Justice, U.S. EPA Headquarters, and the U.S. EPA Region and the State Plaintiff where the relevant Facility is located, as follows:

Notice or submission to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08957

Notice or submission to the United States or to U.S. EPA:

Air Enforcement Division Director
U.S. Environmental Protection Agency
Office of Civil Enforcement
Air Enforcement Division
1200 Pennsylvania Ave, NW
Mail Code: 2242A
Washington, DC 20460

and

Nathan Frank
U.S. Environmental Protection Agency
Region 5
AE-17J
77 West Jackson. Blvd.
Chicago, IL 60604
including an electronic copy to:
frank.nathan@epa.gov

Notice or submission to the United States or to U.S. EPA that concerns the Uncle Sam Facility:

Jan Gerro
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Suite 1200
Mail Code: 6RC-EA
Dallas, TX 75202

and

Anupa Ahuja
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Suite 1200
Mail Code: 6EN-AA
Dallas, TX 75202

Notice or submission to the State Plaintiff:

Lourdes Iturralde
Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P. O. Box 4312
Baton Rouge, Louisiana 70821-4312

Notice to Mosaic:

Diana M. Jagiella
Senior Environmental and Corporate Counsel
The Mosaic Company
Atria Corporate Center, Suite E490
3033 Campus Drive
Plymouth, MN 55441

and

Jonathan S. Martel
Arnold & Porter LLP
555 Twelfth St., N.W.
Washington, DC 20004

Any Party may, by written notice to the other Parties, change its designated notice recipient(s) or notice address(es) provided above. Notices submitted pursuant to this Section shall be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVI. EFFECTIVE DATE

86. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

XVII. RETENTION OF JURISDICTION

87. The Court shall retain jurisdiction over this case until termination of this Consent

Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Sections XI and XVIII, or effectuating or enforcing compliance with the terms of this Decree.

XVIII. MODIFICATION

88. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by all of the Parties. Where the modification constitutes a material change to any term of this Consent Decree, it shall be effective only upon approval by the Court. The O&M Plans required by Paragraph 13 and the CEMS Plans required by Paragraph 14 may be modified as provided in Paragraph 13 (for the O&M Plans) or upon written agreement of the Parties without Court approval, unless any such modification effects a material change to the terms of this Consent Decree or materially affects the Defendant's ability to meet the requirements or objectives of this Decree.

XIX. TERMINATION

89. After Defendant has maintained continuous satisfactory compliance with the requirements of Section IV (Compliance Schedule and Requirements) and Section V (Environmental Mitigation Projects/Additional Injunctive Relief) for a period of one year after achieving compliance with all of the requirements of this Consent Decree, has obtained all permits required by this Consent Decree, and has paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, Defendant may serve upon the United States and the State Plaintiff a request for termination stating that Defendant has satisfied those requirements, together with all necessary supporting documentation.

90. Following receipt by the United States and the State Plaintiff of Defendant's request for termination, the Parties shall confer informally concerning the request for termination and

any disagreement that the Parties may have as to whether Defendant has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States after consultation with the State Plaintiff agrees that the Decree may be terminated, the Parties shall submit, for the Court's approval, a joint stipulation terminating the Decree.

91. If the United States after consultation with the State Plaintiff does not agree that the Decree may be terminated, Defendant may move the Court for termination. However, Defendant shall not file such a motion until 90 Days after service of its request for termination. On any such motion, Defendant shall bear the burden of proving that the conditions necessary for termination of the Consent Decree have been satisfied.

XX. PUBLIC PARTICIPATION

92. This Consent Decree shall be lodged with the Court for a period of no less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. Final approval by the State Plaintiff is subject to the requirements of La. R.S. 30:2050.7, which provides for public notice of this Consent Decree in newspapers of general circulation and the official journals of parish in which the Uncle Sam Facility is located, an opportunity for public comment, consideration of any comments, and concurrence by the State Attorney General. The United States and the State Plaintiff each reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Defendant consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree unless the United States has notified Mosaic in writing that it no longer supports entry of the Consent Decree.

XXI. SIGNATORIES/SERVICE

93. Each undersigned representative of Defendant and the State Plaintiff, and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice (or his or her designee) certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

94. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis.

95. Defendant agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXII. INTEGRATION

96. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. No other document, except for any plans or other deliverables that are submitted and approved pursuant to this Decree, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Decree or the settlement it represents, and no such extrinsic document or statement of any kind shall be used in construing the terms of this Decree.

XXIII. FINAL JUDGMENT

97. Upon approval and entry of this Consent Decree by the Court, this Consent Decree

shall constitute a final judgment of the Court in this action as to the United States, the State Plaintiff, and Defendant. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

Dated and entered this ___ day of _____, 2009.

UNITED STATES DISTRICT JUDGE

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States and State of Louisiana v. Mosaic Fertilizer, LLC (E.D. La.), relating to alleged violations of the Clean Air Act:

FOR PLAINTIFF UNITED STATES OF AMERICA:

_____

JOHN C. CRUDEN
Acting Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

_____

DAVID ROSSKAM
Senior Counsel
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
(202) 514-3974

_____

JIM LETTEN
United States Attorney for the Eastern District of Louisiana

_____

SHARON D. SMITH
Assistant United States Attorney
500 Poydras Street
Room B210
New Orleans, LA 70130
(504) 680-3004

_____

CYNTHIA GILES
Assistant Administrator
Office of Enforcement and Compliance Assurance

_____

PAMELA J. MAZAKAS
Acting Director
Air Enforcement Division

_____

LAWRENCE E. STARFIELD
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 6

WE HEREBY CONSENT to the entry of the Consent Decree in United States and State of Louisiana v. Mosaic Fertilizer, LLC (E.D. La.), a civil action, subject to the public notice and comment requirements.

PRELIMINARY APPROVAL BY PLAINTIFF, THE STATE OF LOUISIANA, THROUGH THE DEPARTMENT OF ENVIRONMENTAL QUALITY:

_____

PEGGY M. HATCH
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality

_____

Kathy M. Wright (LA Bar Roll # 30804)
Christopher A. Ratcliff, Attorney Supervisor
LA Bar Roll #18675)
Office of the Secretary
Legal Affairs Division
Louisiana Department of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302
Telephone No. (225) 219-3985
Fax. No. (225) 219-4068

Consent Decree Signature Page:
United States and State of Louisiana v. Mosaic Fertilizer, LLC (E.D. La.)

FINAL APPROVAL BY PLAINTIFF, THE STATE OF LOUISIANA, THROUGH THE DEPARTMENT OF ENVIRONMENTAL QUALITY:

_____ Dated: _____

PEGGY M. HATCH
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality

_____ Dated: _____

Kathy M. Wright (LA Bar Roll # 30804)
Christopher A. Ratcliff, Attorney Supervisor
LA Bar Roll #18675)
Office of the Secretary
Legal Affairs Division
Louisiana Department of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302
Telephone No. (225) 219-3985
Fax. No. (225) 219-4068

This Consent Decree has been reviewed, and is concurred in, by the Attorney General of the State of Louisiana, pursuant to the provisions of La. R.S. 30:2050.7.

JAMES D. "BUDDY" CALDWELL

_____
ATTORNEY GENERAL

DATED: _____

Consent Decree Signature Page:
United States and State of Louisiana v. Mosaic Fertilizer, LLC (E.D. La.)

FOR DEFENDANT MOSAIC FERTILIZER, LLC:

_____
Richard L. Mack
Executive Vice President, General Counsel and
Corporate Secretary
The Mosaic Company

The following is the name and address of Settling Defendant's agent for service (if different from above) and the name and address of Settling Defendant's counsel.

Agent for Service

_____
Diana Jagiella
The Mosaic Company
Senior Environmental and
Corporate Counsel
3033 Campus Drive, Suite E490
Plymouth, MN 55441

Counsel

_____
Diana Jagiella
The Mosaic Company
Senior Environmental and
Corporate Counsel
3033 Campus Drive, Suite E490
Plymouth, MN 55441

APPENDIX A

OPERATION AND MAINTENANCE PLAN
FOR
A AND D SULFURIC ACID PLANTS
MOSAIC FERTILIZER, LLC
UNCLE SAM, LOUISIANA

Mosaic Fertilizer, LLC
7520 Highway 44
Uncle Sam, Louisiana 70792

August 2009

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1.0 PURPOSE OF PLAN

This Operation and Maintenance (O&M) Plan is for the "A Train" and "D Train" Sulfuric Acid Plants (SAPs) located at the Mosaic Fertilizer, LLC Uncle Sam phosphate fertilizer manufacturing facility in Uncle Sam, Louisiana. The O&M Plan is prepared for the purpose of documenting the operation and maintenance procedures and systems, which are used to minimize emissions to the atmosphere from the SAPs. This includes minimizing the frequency of SAP startups and shutdowns, and maintaining and operating the SAPs (including air pollution control equipment) to the extent practicable to minimize air emissions. This O&M Plan has been prepared to comply with requirements of a new source review settlement (Consent Decree - Civil Action No. ____). Specifically, the Consent Decree, Paragraph 13, O&M Plans, states the following:

> *The O&M Plans describe the operating and maintenance procedures necessary to: (i) minimize the frequency of Sulfuric Acid Plant shutdowns (thereby reducing the number of startups of each Sulfuric Acid Plant); and, (ii) to the extent practicable maintain and operate each of the Sulfuric Acid plants, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing the quantity of emissions of all pollutants subject to emission standards as of the Effective Date of this Consent Decree at all times, including during periods of Start-up, Shutdown, and Malfunction.*

The O&M Plan is a compilation of the Uncle Sam Plant's approach for exercising good air pollution control practices for minimizing sulfur dioxide (SO_2) and sulfuric acid mist (SAM) emissions from the SAPs, as well as the operating and maintenance practices and systems to minimize shutdown of the SAPs (and, therefore, startups of the SAPs). The Plan is designed to prevent, detect, and correct malfunctions or equipment failures, which could result in SAP shutdown or excess emissions. The Plan has as a goal minimizing the number of shutdowns of the SAPs, as well as preventative maintenance procedures to maximize operation and minimize emissions between shutdowns (i.e., during normal operation). This Plan provides for:

- Continuous operation of the SAPs between scheduled maintenance turnarounds;
- Scheduled turnarounds;
- Preventative maintenance procedures;

- Predictive maintenance procedures;
- Startup/shutdown procedures;
- Malfunction procedures;
- Spare parts; and
- Plan updates.

2.0 SULFURIC ACID PLANT OVERVIEW

The Uncle Sam plant has a total of three independent SAPs: A Train, D Train, and E Train. A Train is a single absorption SAP with a maximum operating rate of 2,000 tons per day (TPD) of 100-percent sulfuric acid (H_2SO_4). The contact process is used to manufacture the H_2SO_4. In the contact process, molten elemental sulfur is burned with clean, dry air to form SO_2. The SO_2-laden gas is then passed through a heat recovery boiler before entering the converter. In the converter, the majority of the SO_2 in the gas stream is converted to sulfur trioxide (SO_3). The A Train converter has four catalyst beds (passes). After each pass, the gases pass through heat recovery devices (heat exchangers, economizers, and/or superheaters). After the converter, the SO_3-laden gas stream is passed through an absorbing tower where the SO_3 is absorbed into H_2SO_4 and combined with water to form additional H_2SO_4. The gases then pass through a mist eliminator to capture SAM emissions. The gases, now containing trace amounts of SO_2 and SAM, then exit to the atmosphere.

D Train is a double absorption SAP with a maximum operating rate of 2,250 TPD of 100-percent H_2SO_4. E SAP is a double absorption SAP with a maximum operating rate of 3,800 TPD of 100-percent H_2SO_4. The double absorption process is the same as the single absorption process, except that the gases pass through a second absorbing tower where additional SO_3 is absorbed into H_2SO_4 and combined with water to form additional H_2SO_4.

The three SAPs provide H_2SO_4 to the onsite phosphoric acid plants in order to manufacture phosphoric acid.

3.0 OPERATOR TRAINING

Detailed operating/training manuals form the basis of an operator's initial training. This training emphasizes that the SAPs are critical processes with environmental control equipment that requires a high degree of attention and immediate response to assure compliance. New employees receive up to

6 weeks of classroom and up to 6 weeks of job specific training before being assigned to a new unit/area. Area supervisors monitor each trainee's capabilities and progress during the training period. All employees must demonstrate competency (written and oral) to an area supervisor before being released to work the assigned units.

The Uncle Sam plant is operated 24 hours per day, 7 days per week. All units, including the SAPs, have trained operating personnel assigned around-the-clock. These operators are responsible for monitoring the instrumentation system, performing routine checks of operating equipment and vessels, initiating maintenance work orders, troubleshooting operating problems, starting up and shutting down the units, and handling unusual or emergency situations. They report to an area supervisor and a shift supervisor.

In the SAP area, each shift has an "A" operator and a "B" operator. The "A" operator is the most highly-trained operator in the plant and resides in the SAP control room. The "B" operator is less trained/experienced and resides within the SAP area itself (outside).

Mosaic conducts refresher training for unit operators. This is to review existing procedures, any procedural or mechanical changes, and expand understanding of unit operation. Refresher training is required to be performed every 3 years.

In addition, routine safety meetings and weekly staff meetings are used to communicate changes and provide up-to-date operational information. The format and content of this training is determined by area supervisors and may change from year-to-year.

The operating/training manuals are reviewed periodically by the area supervisor and updated as needed.

4.0 ROUTINE OPERATING PROCEDURES

Mosaic maintains standard operating procedures (SOPs) specifically for each of the A and D Trains. These SOPs are tied to Standard Operating Control Limits (SOCLs) for critical pieces of equipment within each SAP. Together, the SOPs and SOCLs form the basis for Mosaic's routine operating procedures. These procedures have the ultimate goal of operating the SAPs efficiently and

continuously and avoiding shutdowns (thereby minimizing startups). The procedures also are designed to minimize the time needed to startup the SAPs, to the extent practicable.

The SOPs for the SAPs contain the following elements:

- Guidelines on monitoring, adjusting, taking readings, awareness, and reporting abnormalities;
- Parameters to be recorded in the operator logs;
- Controlling and calculating SO_2 emissions;
- SO_2 analyzer operation;
- Controlling gas stream conditions;
- Shift change communications;
- Controlling stack appearance (opacity checked daily);
- Controlling acid concentrations;
- Conducting monthly visual stick test for SAM emissions;
- Controlling acid temperatures;
- Controlling acid pump tank levels;
- Responding to lost circulating pumps;
- Controlling boiler water level;
- Hot startup procedures;
- Cold startup procedures;
- Emergency shutdown procedures;
- Unit trip out procedures;
- Normal shutdown procedures; and
- Cooldown procedures.

A number of the procedures include alarm levels, which are tied to the SOCLs. The SOCLs are used by unit operators to detect a malfunction or an abnormal situation that may lead to a malfunction or excess emissions. The procedures include actions that are to be taken in the event that a SOCL is not complied with, possible causes, troubleshooting charts, and when repair work orders are to be implemented. Also included are trip (interlock shutdown) levels and actions to be taken in the event of a plant trip. The SAPs contain a series of interlocks and critical plant trips, which are designed to prevent excess emissions.

5.0 PROCEDURES FOR EXCESS EMISSIONS

Following each period of excess emissions, the Operator or Area Supervisor will complete an Incident Report, indicating the nature of the incident and the initial probable causes. Completion of the Incident Report will trigger the Mosaic Incident Investigation program. This program is designed to:

- Capture environmental incidents;
- Investigate incidents;
- Identify root and contributing causes;
- Identify and evaluate recommended measures to prevent recurrence and reduce the probability and/or severity of a similar recurrence;
- Ensure timely issuance of incident reports;
- Address and resolve incident recommendations; and
- Communicate incidents, their root and contributing causes, and recommended preventive measures to ensure timely and effective follow-up action.

Mosaic will strive to investigate evidence of and correct (either during the next plant turnaround or earlier, as appropriate based on all of the circumstances), material excess emissions identified by plant personnel, including, for example: (a) any exceedances of a permit limit, a New Source Performance Standard (NSPS) limit, and/or a Consent Decree limit; (b) visible emissions from the stack of the A or D Train SAPs in violation of regulatory and/or permit limits; (c) unpermitted, significant leaking or "smoking" sulfuric acid plant equipment, piping, or duct work; and (d) unpermitted, significant releases of process gas to the atmosphere (other than through the plant stack).

Mosaic intends to review and revise these requirements, as appropriate, when the A and D Trains become subject to additional emission limitations and reporting requirements under the Consent Decree.

6.0 TURNAROUND INSPECTIONS AND REPAIRS

Planned major maintenance turnarounds of the SAPs typically occur approximately every 2 years. However, it is Mosaic's ongoing goal to increase the times between turnarounds through its routine

repair, maintenance, and inspection program. Therefore, the time between turnarounds could increase in the future.

Turnarounds represent an opportunity to address operational issues identified from the previous turnaround inspections, as well as operational problems that have developed since the last turnaround and could not be addressed during normal operation. Prior to each planned shutdown, a work list is developed for detailed inspection, repair, and testing of equipment to maximize unit operation until the next planned shutdown.

Maintenance activities that are typically performed during planned unit shutdowns of A and D Trains are listed below. The activities for each planned shutdown are determined by maintenance and operations personnel prior to each shutdown. Where possible, maintenance is performed on the equipment while the unit is still in operation.

Mechanical

- Converter – screen catalyst; inspect vessel, ducts, and support structure; repair as needed.
- Heat exchangers/Economizers/Superheaters – chemical cleaning; inspect shell, tubes, ducts, dampers; repair as needed.
- Waste heat boiler/Converter boiler – chemical cleaning; inspect pressure shell, tubes, ducts, dampers; repair as needed.
- Steam drum – chemical cleaning; inspect internal piping, plates and steam separators, shell, safety valves, etc.; repair as needed.
- Sulfur Furnace – inspect refractory and burner, ducts; repair as needed.
- Filter House – inspect frame and structure.
- Steam turbine – inspect, overhaul as needed.
- Main blower – inspect/repair as needed.
- Absorption Towers – inspect/wash/ repair as needed mist eliminator section, distribution system, structure and packing.
- Stack – inspect ducts, joints, drain; repair as needed.
- Acid coolers – inspect shell and nozzles, condition of water channels; perform eddy current testing; repair as needed.
- Pump tanks – inspect; repair as needed.
- Valves – repair/refurbish as needed.
- Relief valves – service or replace as required.
- Duct leaks, steam leaks, vessel repairs as needed.

- Inspect towers and vessels due for inspection per the ultrasonic thickness testing program for corrosion and integrity of internal attachments.
- Inspect piping due for inspection per the ultrasonic thickness testing program for metal loss (most piping is inspected while the unit is in operation).

Electrical

- Check all interlocks, replace as needed.
- Replace thermocouples (converter and heat exchangers).
- Calibrate field instruments.
- Reset vibration monitors.
- Check rotameters.
- Check sight glasses.
- Check level controls.
- Control valves – rebuild/recondition.
- Check levels controllers.
- Conduct infrared inspections.

Internal inspections during turnarounds can identify action items for the next scheduled turnaround. Upgraded instrumentation can be installed during turnarounds to gain better control over the process to operate more efficiently.

7.0 PREVENTATIVE MAINTENANCE PROGRAM

Mosaic's preventative maintenance (PM) program is designed: (1) to minimize the downtime associated with the A and D Trains, in order to maximize operations and minimize excess emissions and emissions due to startups and shutdowns; and (2) to prevent significant leaks from process equipment in order to protect plant personnel and the surrounding community from potentially hazardous situations and to minimize emission into the atmosphere. Both fixed equipment (i.e., tanks, vessels, ducts, etc.) and rotating equipment (turbines, pumps, motors, etc.) are addressed in the PM program. The PM program includes the following main elements:

- Turbine – check oil level periodically;
- Process Vessels and sulfuric acid piping – External visual and/or ultrasound thickness scan annually;
- Process Vessels – internal inspection (per turnaround cycle);

- Sulfur furnace, boiler shells, and steam drum – External visual inspection annually;
- Sulfur furnace, boiler shells, and steam drum – ultrasound thickness survey and internal inspection (per turnaround cycle);
- Vessels – internal inspections per turnaround cycle;
- Above ground storage tanks – monthly external visual inspection;
- Analyzers – calibrate and clean monthly;
- Interlocks – checked monthly;
- Acid coolers – infrared inspection quarterly;
- Pumps and Motors – inspection frequency based on equipment best practices;
- Critical meters – maintenance monthly; and
- Visual stick test to detect SAM emissions carryover from each drying and absorption tower – monthly.

All maintenance activities, except the results of the visual stick tests, are entered into the Mosaic computerized maintenance management system (CMMS), which is a computer-based software system. The CMMS contains equipment history, storage and requisition data, and spare parts data. Repair work orders are created through the CMMS. Preventative maintenance generates from the CMMS through daily and weekly schedules of repair and maintenance.

7.1 Fixed Equipment

7.1.1 External Visual Inspection

The primary reasons for performing external visual inspections of process vessels, piping, and process tanks are:

- To determine the type, rate, and causes of any deterioration present that may negatively affect their mechanical integrity and/or service performance; and
- To determine if any maintenance work is required to maintain the equipment in a safe operating condition.

Inspections are performed by inspectors qualified in accordance with American Petroleum Institute (API) 510, 570, 653, or American Society of Non Destructive Testing (ASNT SNT TC-1A) depending on the type of inspection conducted or type of equipment or piping being inspected. The external visual inspection results are documented in either an external inspection checklist or as part

of an internal inspection report memo. The report is completed and dated by the inspector(s) performing the external visual inspection. It is reviewed by the inspection supervisor or authorized representative. The completed report is filed in the equipment inspection history file located in the CMMS.

Whenever a condition requiring additional work or an inspection recommendation is submitted by the inspector(s) as a result of the inspection, the inspector(s) initiates a work order.

7.1.2 Internal Visual Inspection

The primary reasons for performing an internal visual inspection are:

- To determine if the essential sections of the vessel are safe to operate until the next inspection;
- To determine the type, rate and causes of any deterioration present which may negatively affect its mechanical integrity; and
- To determine if any maintenance work is required to maintain the process vessel in a safe operating condition.

Inspections are performed by Inspectors qualified in accordance with API 510, 570, 653, or ASNT SNT TC-1A depending on the type of inspection conducted or type of equipment or piping being inspected. Process vessels are visually inspected internally per turnaround cycle. Process storage tanks (Pump tanks) are also inspected internally per turnaround cycle.

Exceptions to this practice occur when this interval is extended due to the satisfactory results of a risk-based inspection assessment or an ultrasonic on-stream survey has substituted the internal inspection as permitted and outlined in the applicable API standard.

The inspection results are documented in an inspection report memo. The report is completed and dated by the inspector(s) performing the internal visual inspection. It is reviewed by the inspection supervisor or authorized representative. The completed report is filed in the equipment inspection history file located in the CMMS.

Whenever a condition requiring additional work or an inspection recommendation is submitted by the inspector(s) as a result of the inspection, the inspector(s) initiates a work request.

7.1.3 Ultrasonic Thickness Survey

A representative number of thickness measurements are taken on process vessels via the ultrasonic thickness techniques for remaining wall thickness every 10 years or at one-half the estimated remaining corrosion-rate life, whichever is less. Ultrasonic thickness surveys are performed on selected piping circuits, as needed, at the discretion of the inspection department. The ultrasonic thickness survey is prompted by a maintenance work order or by a review of the equipment inspection history file or by the "Inspection Due" command in the CMMS.

The ultrasonic thickness surveys are performed by Inspectors qualified in accordance with ASNT SNT TC-1A.

The ultrasonic thickness survey results are documented in an ultrasonic thickness survey data inspection report. The report is completed and dated by the inspector(s) performing the ultrasonic thickness survey. It is reviewed by the Inspection Supervisor or authorized representative. The completed report is filed in the equipment inspection history file located in the inspection department. The data is put into the CMMS history file for that particular equipment.

Whenever a condition requiring additional work or an inspection recommendation is submitted by the inspector(s) as a result of the inspection, the inspector(s) initiate a work request.

7.2 Rotating Equipment

The maintenance department performs detailed preventive maintenance on all pumps and blowers in the A and D Trains. Work orders for preventive maintenance are generated automatically by the CMMS. The preventive maintenance tasks include checking the coupling condition and alignment, changing oil in the equipment along with a visual check of the used oil, checking bearing clearances, checking for excess play in the motor and pump shafts, and checking the condition of the mechanical seal or packing.

The results of the checks are recorded on an equipment inspection sheet. The equipment inspection sheet is located in the maintenance procedures. The sheets are retained for at least 5 years.

7.3 Instrumentation

SAP maintenance personnel test instrumentation for the Emergency Shutdown System (ESS) for proper operation. The testing is conducted in accordance with a written procedure/checklist. All system inputs, outputs, and settings are checked with the system online. Deficiencies are corrected at the time of the inspection where possible or work orders are written, and all data is entered into the CMMS.

8.0 PREDICTIVE MAINTENANCE PROGRAM

The Predictive Maintenance Program (PMP) includes programs for both rotating equipment (pumps, blowers, fans, motors) and fixed equipment (process vessels, piping, process tanks). These programs are used to predict equipment condition and failures so that appropriate preventive measures can be taken, or so repairs can be scheduled prior to a failure. These programs, along with a comprehensive list of plant-wide preventive and predictive maintenance programs, are also detailed in the Mosaic CMMS and the Maintenance Work Flow model.

8.1 Rotating Equipment

8.1.1 Vibration Analysis Program

The vibration analysis program is limited to the steam turbine, main blower, and all pumps in the A and D Trains. It includes routine machinery vibration monitoring, detailed vibration analysis, and repair follow-up work as required. The purpose of the vibration analysis program is to monitor equipment vibration on a regular basis, compare current readings to historical data, and identify potential equipment failures so that proper maintenance can be scheduled before the failure.

The data is collected and analyzed by the maintenance PM group. The PM group consists of two or three experienced technicians under the supervision of the PM Foreman. The technicians receive training on the vibration analysis system and on vibration data collection.

The steam turbine and the main blower are each monitored daily for vibration. Pumps and motors and less critical equipment are monitored monthly. Vibration readings are taken using hand-held piezoelectric accelerometers. Readings are normally taken on all bearing planes (horizontal, vertical, axial). The equipment is monitored according to a specific sequence and the information is stored in

the data collector that the PM technician carries. Local panel readings for vibration and temperature, where applicable, are also entered into the data collector. The data is then uploaded into the vibration analysis computer system.

The PM group enters alarm settings for each reading based on manufacturer recommendations, historical data, and industry guidelines. The analysis software alerts technicians when alarm settings have been reached, indicating the need for detailed analysis. A contractor maintains the PMP computerized system.

Detailed analysis may include collecting more precise data, consulting manufacturers or vibration analysis experts, or using the experience of the PM group. If the analysis indicates that corrective action must be taken, the PM technician writes a work order to correct the deficiency. Baseline data for the program changes if corrective action is taken on the equipment and this is incorporated into the program the next time the equipment is monitored. The vibration data is stored on a network drive for at least 1 year.

The table below provides a brief summary of the rotating equipment vibration analysis program. More detailed information is available in the Mechanical Integrity Program.

Equipment	Frequency	Records Retained	Records Location	Activity Description
Steam Turbine and Main Blower	Daily	Vibration History	Vibration analysis computer files	Monitor vibration and enter into the CMMS.
Pumps	Monthly	Vibration History	Vibration analysis computer files	Pumps are added to the vibration analysis program at the discretion of the Maintenance PM Foreman. The decision is based on the pump type, size, and criticality. Typically, all pumps in the SAPs are monitored except the following: 1. Small pumps such as gear lube oil or injection pumps; 2. Submersible pumps.
Motors	Monthly	Vibration History	Vibration analysis computer files	Motors are added to the vibration analysis program at the discretion of the Maintenance PM Foreman. The decision is based on the size and horsepower rating of the motor, and on the criticality of the equipment being driven. Motors not typically included in the vibration monitoring program include: 1. Small motors (less than 10 hp); 2. Non-process-related motors.

9.0 SPARE PARTS

The Uncle Sam Plant utilizes a computer-based storeroom inventory system, which is integral to the CMMS. Plant operations and maintenance supervisors determine critical spare parts inventory based on supplier recommendations, historical usage, and market conditions (availability). The plant storeroom manager then ensures the required inventory is set-up and maintained by the storeroom inventory system for automatic re-order at the desired minimum-inventory order point. A large number of spare parts are maintained in inventory for the SAPs. They will not be listed in this manual because (a) space required, (b) the list is changed as appropriate, and (c) the current list of parts is readily available to all supervisors on the computerized storeroom inventory system.

10.0 PLAN RESPONSIBILITIES

This O&M Plan will be updated at least every 3 years, as required by the Consent Decree. The O&M Plan for A Train will need to be updated once the SO_2 scrubbing system is installed and operating, in order to reflect operations and maintenance of the SAP and the SO_2 scrubbing unit itself. Since the SO_2 scrubbing unit has not yet been installed and is not operational, an O&M Plan including it cannot be developed at this time.

Improvements from optimization studies and routine process optimizations will be included in any updates to the O&M Plan. The Environmental Manager will be responsible for updating and coordinating the information contained in the plan.

Applicable operation and maintenance records shall be maintained for a period of 5 years in order to demonstrate to the regulatory agencies that the O&M Plan is fully implemented.

APPENDIX B

MOSAIC UNCLE SAM FACILITY: A TRAIN

Continuous Emission Monitoring System ("CEMS") Plan for sulfur dioxide ("SO_2")Emissions
Mosaic Fertilizer
Single Absorption Sulfur Burning Plant with Amine Based Regenerative Gas Absorption System

Principle

This CEMS Plan is the mechanism for determining compliance with all SO_2 emission limits in the Consent Decree for Mosaic's A Train. The methodology described in this CEMS Plan will provide a continuous real-time indication of compliance with the emission limits established in the Consent Decree by continuously determining the emission rate both in terms of pounds of SO_2 emitted per unit of time and pounds of SO_2 emitted per ton of 100% Sulfuric Acid Produced ("lb/ton"). The system will utilize three analyzers: one to measure stack SO_2 concentration, one to measure stack oxygen ("O_2") concentration, and one to measure stack volumetric flow rate. From these data, the emission rate, expressed as both pounds per unit of time and lb/ton, will be directly calculated using Equations 1, 2, and 3 below. For the purposes of this Plan, Standard Conditions are a temperature of 68°F and a pressure of 14.696 psia.

Equation 1:

$$M_{SO_2Stack} = Q_{Stack} \cdot Cs$$

Equation 2:

$$P_{TonsH_2SO_4} = \frac{Q_{Stack} \cdot \left(0.264 - 0.0126 \cdot \%O_2 - 7.61 \cdot Cs\right)}{S}$$

Equation 3:

$$E_{lb/ton} = \frac{M_{SO_2Stack}}{P_{TonsH_2SO_4}} = \frac{Q_{Stack} \cdot Cs \cdot S}{Q_{Stack} \cdot \left(0.264 - 0.0126 \cdot \%O_2 - 7.61 \cdot Cs\right)}$$

Where:

$P_{TonsH_2SO_4}$ = 100% Sulfuric Acid Production, tons per unit of time

M_{SO_2Stack} = Mass SO_2 stack emission rate, lb per unit of time

Q_{Stack} = Volumetric flow rate of stack gas, dry standard cubic feet (DSCF) per unit of time

$\%O_2$ = Stack O_2 concentration, percent by volume dry basis

Cs = Stack SO_2 concentration, lb/DSCF (to convert parts per million ("ppm") by volume, dry basis (ppm) to lb/DSCF, multiply by 1.661×10^{-7})

$E_{lb/ton}$ = lb SO_2 per ton 100% Sulfuric Acid Produced

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

The mass emission rate equation (Equation 1) calculates the SO_2 mass emission rate by multiplying the total stack gas flow rate by the stack SO_2 concentration. The 100% Sulfuric Acid Production Rate equation (Equation 2) is based on a material balance of the contact process and the fact that the ratio of oxygen to nitrogen of the incoming air is fixed. The lb/ton equation (Equation 3) is the ratio of the mass SO_2 emission rate to the 100% Sulfuric Acid Production Rate.

The benefit of using this method is the ability to obtain continuous information regarding the SO_2 mass emission rate, the fact that lb/ton measurements will be "weighted" based on the flow rate during each measurement, and the elimination of errors associated with measuring sulfuric acid flow and using converter inlet Reich testing.

Definitions

Terms used in this CEMS Plan that are defined in the Clean Air Act ("CAA") or in Federal or state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein.

Emissions Monitoring

Emissions monitoring will be accomplished using an O_2 analyzer at the exit stack, an SO_2 analyzer at the exit stack, and a stack flow rate analyzer. Except for analyzer malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), Mosaic continuously will conduct monitoring during all Operating Periods:

- Once every minute, the analyzers will measure the stack SO_2 concentration (lb/DSCF), the stack O_2 concentration (percent by volume, dry) and the volumetric flow rate (DSCF per minute).

- Every 15 minutes, the CEMS will reduce the 15 one-minute measurements generated by each analyzer by taking the arithmetic average of the previous 15 measurements.

- During routine calibration checks and adjustments of the analyzers, the SO_2, O_2, and flow rate measurements will be "frozen" at their pre-calibration level and this measurement will be used to fill in the data gaps that occur pending completion of the calibration checks and adjustments.

- If any one or more than one analyzer is/are not operating for a period of 24 hours or greater, Mosaic will comply with the following requirements to fill in data gaps in the array:

    - Exit stack gas will be sampled and analyzed for SO_2 at least once per hour, during all Operating Periods. Sampling will be conducted by Reich test or other established method (*e.g.*, portable analyzer). The most recent hourly reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

    - O_2 in the exit stack gas will be sampled and analyzed at least once per hour, during all Operating Periods. Sampling will be conducted by Orsat test or other method (*e.g.*, portable analyzer). The most recent hourly reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

    - Stack volumetric flow rate will be estimated using engineering judgment.

- If any one or more than one analyzer is/are not operating for a period of less than 24 hours, Mosaic will either: (i) follow the requirements set forth for a 24-hour or greater period of downtime to fill in the data gaps; or (ii) use the data recorded for the reading immediately preceding the affected analyzer's(s') stoppage to fill in the data gap.

- In order to secure data on a "dry basis," Mosaic may either:
  (i) directly measure the moisture content using a moisture analyzer; or

(ii) for saturated gas streams only, measure the stack temperature using a stack temperature sensor at the time of each SO_2 measurement and determine the moisture content using a psychrometric chart or standard text water vapor pressure correlation.

Emissions Calculations

Rolling 3-Hour Average

For purposes of calculating a rolling 3-hour average, the CEMS will maintain an array of the 12 most recent 15-minute average measurements of each of the three monitored parameters. Every fifteen minutes, it will add the most recent readings to the array and exclude the oldest readings.

The rolling 3-hour average lb/ton SO_2 emission rate (E_{3hravg}) will then be calculated every 15 minutes using Equation 4.

Equation 4:

$$E_{3hravg} = \frac{S \cdot \sum_{i=1}^{12} Q_{Stack\ i} \cdot Cs_i}{\sum_{i=1}^{12} Q_{Stack\ i} \cdot \left(0.264 - 0.0126 \cdot \%O_{2i} - 7.61 \cdot Cs_i\right)}$$

Where:

$\%O_{2i}$ = Arithmetic average of 15 one-minute measurements of stack O_2 concentration, percent by volume dry basis at interval "*i*"

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCF per minute at interval "*i*"

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

E_{3hravg} = 3-hour average lb SO_2 per ton 100% Sulfuric Acid Produced

Startup Stack SO_2 Concentration. Following any Startup, the average stack SO_2 concentration ($C_{4hrStartup}$) during the 4-hour Startup will be calculated using Equation 5.

Equation 5:

$$C_{4hrStartup} = \frac{1}{1.661 \times 10^{-7}} \cdot \frac{\sum_{i=1}^{16} Cs_i Q_{Stack\ i}}{\sum_{i=1}^{16} Q_{Stack\ i}}$$

Where:

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCF per minute at interval "*i*"

$C_{4hrStartup}$ = Average stack SO_2 concentration during the 4-hour Startup, ppm

1.661×10^{-7} = Conversion factor in units of lb/DSCF SO_2 per ppm

Daily Mass of SO_2 Emissions.

For the purposes of calculating the daily mass of SO_2 emissions, the CEMS will maintain an array of all 15-minute average measurements of the SO_2 concentration at the exit stack and the volumetric flow rate of the exit stack taken during all Operating Periods between 6:00 am local time each Day and 6:01 am local time the previous Day.

After 6:00 am local time each Day, the daily mass of SO_2 emissions (M_{SO_2day}) will be calculated using Equation 6.

Equation 6:

$$M_{SO_2day} = \sum_{i=1}^{n} Q_{Stack\ i} \cdot Cs_i \cdot 15\,\text{min}$$

Where:

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCFM at interval "*i*"

M_{SO_2day} = Daily mass emissions of SO_2, lb

n = Number of 15-minute average measurement intervals between 6:00 am local time on a given Day and 6:01 am local time the previous Day.

12-Month Rolling Sum of Mass SO_2 Emissions.

After 6:00 am local time on the last Day of each Month, the 12-Month rolling sum mass of SO_2 emissions ($M_{SO_2 12Mo\ Sum}$) will be calculated using Equation 7:

Equation 7:

$$M_{SO_2 12Mo\ Sum} = \sum_{j=1}^{d} M_{SO_2Day\ j}$$

Where:

$M_{SO_2Day\ j}$ = Daily mass emissions of SO_2 calculated for Day "*j*", lb

d = Number of Days in the preceding 12 calendar months

$M_{SO_2 12Mo\ Sum}$ = 12-Month rolling sum of SO_2 emitted into the atmosphere, lb

Rounding of Numbers resulting from Calculations

Upon completion of the calculations, the final numbers shall be rounded as follows:

E_{3hravg} : Rounded to the nearest tenth.

$C_{4hrStartup}$: Rounded to the nearest whole number (i.e., 1 ppm)

$M_{SO_2 12 Mo\ Sum}$: Rounded to the nearest one-hundredth of a ton (i.e., 20 lb).

The number "5" shall be rounded up. Thus, a short-term rate of 1.05011 shall be rounded to 1.1.

Compliance with Consent Decree SO_2 Limits

Short-Term SO_2 Limits

The Short-Term Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods, Mosaic will be in compliance with the Short-Term SO_2 Consent Decree Limit if E_{3hravg} does not exceed the applicable Short-Term Limit provided or established pursuant to Paragraph 8 of the Consent Decree. Mosaic will determine initial compliance with the Short-Term Limit following Startup 3 hours after the completion of the 4-hour Startup period (*i.e.* after the seventh hour following the commencement of sulfur feed). If Mosaic contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of the applicable Short-Term limit provided or established pursuant to Paragraph 8 of the Consent Decree after the period of the Malfunction(s) end(s), Mosaic shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

New Source Performance Standards ("NSPS") SO_2 Limits

The NSPS Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods, Mosaic will be in compliance with the NSPS Limit if E_{3hravg} does not exceed 4.0 lb of SO_2 per ton of 100% Sulfuric Acid Produced. Mosaic will determine initial compliance with the NSPS Limit following Startup 3 hours after the completion of the 4-hour Startup period (*i.e.* after the seventh hour following the commencement of sulfur feed). If Mosaic contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of 4.0 lb/ton after the period of the Malfunction(s) end(s), Mosaic shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

Startup SO_2 Emission Limits

Mosaic will be in compliance with the SO_2 emission limits during Startup if $C_{4hrStartup}$ during Startup does not exceed 500 ppm.

Mass Cap for SO_2

Mosaic will be in compliance with the Mass Cap each Month that the 12-month rolling sum ($M_{SO_2 12 Mo\ Sum}$) does not exceed the applicable Mass Cap provided or established pursuant to Paragraph 8 of the Consent Decree.

Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction

Mosaic will retain all data generated by its SO_2 analyzer, O_2 analyzer, and stack flow analyzer, including all data generated during Startup, Shutdown, and/or Malfunction ("SSM") of the Sulfuric Acid Plant in accordance with Section XII (Information Collection and Retention) of the Consent Decree.

Analyzer Specifications

The three analyzers will meet the following specifications:

Table 1

Parameter	Location	Range
SO_2, lb/DSCF	Stack	Dual range: Normal: 0 – 500 ppm SO_2 SSM: 0 – 3,600 ppm SO_2
O_2, percentage, dry basis	Stack	Single range: 0 – 20.9 % O_2
Volumetric flow rate, DSCFM	Stack	13% to 125% of the maximum expected volumetric flow rate

The stack SO_2 analyzer will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, 40 C.F.R. Part 60, Appendix B, Performance Specification 2, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

The stack O_2 analyzer will meet 40 C.F.R. Part 60 Appendix B, Performance Specification 3 and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

The volumetric flow rate analyzer will meet 40 C.F.R. Part 60, Appendix B, Performance Specification 6 and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1. Turndown ratio on the volumetric flow rate analyzer is 8/1, which sets the 13% minimum flow range.

Compliance with the NSPS: 40 C.F.R. Part 60, Subpart H

In addition to the requirements in this CEMS Plan, Mosaic also will comply with all of the requirements of the NSPS relating to monitoring except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart H:

- The requirement at 40 C.F.R. § 60.84(a) that the stack SO_2 analyzer have a span value of 1000 ppm. In lieu of this, Mosaic will utilize the span values specified in Table 1above; and

- The procedures specified at 40 C.F.R. § 60.84(b) for converting monitoring data into the units of the applicable standard. In lieu of this, Mosaic will utilize the procedures specified in this CEMS Plan for calculating compliance with the NSPS 3-hour average limit.

APPENDIX C

MOSAIC UNCLE SAM FACILITY: D TRAIN

Continuous Emission Monitoring Systems ("CEMS") Plan for sulfur dioxide ("SO_2") Emissions
Mosaic Fertilizer
Dual Absorption Sulfur Burning Plant

Principle

This CEMS Plan is the mechanism for determining compliance with all SO_2 emission limits in the Consent Decree for Mosaic's D Train. The methodology described in this CEMS Plan will provide a continuous real-time indication of compliance with the emission limits established in the Consent Decree by continuously determining the emission rate both in terms of pounds of SO_2 emitted per unit of time and pounds of SO_2 emitted per ton of 100% Sulfuric Acid Produced ("lb/ton"). The system will utilize three analyzers: one to measure stack SO_2 concentration, one to measure stack oxygen ("O_2") concentration, and one to measure stack volumetric flow rate. From these data, the emission rate, expressed as both pounds per unit of time and lb/ton, will be directly calculated using Equations 1, 2, and 3 below. For the purposes of this Plan, Standard Conditions are a temperature of 68°F and a pressure of 14.696 pounds per square foot absolute ("psia").

Equation 1:

$$M_{SO_2Stack} = Q_{Stack} \cdot Cs$$

Equation 2:

$$P_{TonsH_2SO_4} = \frac{Q_{Stack} \cdot \left(0.264 - 0.0126 \cdot \%O_2 - 7.61 \cdot Cs\right)}{S}$$

Equation 3:

$$E_{lb/ton} = \frac{M_{SO_2Stack}}{P_{TonsH_2SO_4}} = \frac{Q_{Stack} \cdot Cs \cdot S}{Q_{Stack} \cdot \left(0.264 - 0.0126 \cdot \%O_2 - 7.61 \cdot Cs\right)}$$

Where:

$P_{TonsH_2SO_4}$ = 100% Sulfuric Acid Production, tons per unit of time

M_{SO_2Stack} = Mass SO_2 stack emission rate, lb per unit of time

Q_{Stack} = Volumetric flow rate of stack gas, dry standard cubic feet (DSCF) per unit of time

$\%O_2$ = Stack O_2 concentration, percent by volume dry basis

Cs = Stack SO_2 concentration, lb/DSCF (to convert parts per million by volume, dry basis (ppm) to lb/DSCF, multiply by 1.661×10^{-7})

$E_{lb/ton}$ = lb SO_2 per ton 100% Sulfuric Acid Produced

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

The mass emission rate equation (Equation 1) calculates the SO_2 mass emission rate by multiplying the total stack gas flow rate by the stack SO_2 concentration. The 100% Sulfuric Acid Production Rate equation (Equation 2) is based on a material balance of the contact process and the fact that the ratio of

oxygen to nitrogen of the incoming air is fixed. The lb/ton equation (Equation 3) is the ratio of the mass SO_2 emission rate to the 100% Sulfuric Acid Production Rate.

The benefit of using this method is the ability to obtain continuous information regarding the SO_2 mass emission rate, the fact that lb/ton measurements will be "weighted" based on the flow rate during each measurement, and the elimination of errors associated with measuring sulfuric acid flow and using converter inlet Reich testing.

Definitions

Terms used in this CEMS Plan that are defined in the Clean Air Act ("CAA") or in Federal or state regulations promulgated pursuant to the CAA shall have the meaning assigned to them in the CAA or such regulations, unless otherwise defined in the Consent Decree. The terms used in this CEMS Plan that are defined in the Consent Decree shall have the meaning assigned to them therein.

Emissions Monitoring

Emissions monitoring will be accomplished using an O_2 analyzer at the exit stack, an SO_2 analyzer at the exit stack, and a stack flow rate analyzer. Except for analyzer malfunctions, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments), Mosaic continuously will conduct monitoring during all Operating Periods:

- Once every minute, the analyzers will measure the stack SO_2 concentration (lb/DSCF), the stack O_2 concentration (percent by volume, dry) and the volumetric flow rate (DSCF per minute).

- Every 15 minutes, the CEMS will reduce the 15 one-minute measurements generated by each analyzer by taking the arithmetic average of the previous 15 measurements.

- During routine calibration checks and adjustments of the analyzers, the SO_2, O_2, and flow rate measurements will be "frozen" at their pre-calibration level and this measurement will be used to fill in the data gaps that occur pending completion of the calibration checks and adjustments.

- If any one or more than one analyzer is/are not operating for a period of 24 hours or greater, Mosaic will comply with the following requirements to fill in data gaps in the array:

    - Exit stack gas will be sampled and analyzed for SO_2 at least once per hour, during all Operating Periods. Sampling will be conducted by Reich test or other established method (*e.g.*, portable analyzer). The most recent hourly reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

    - O_2 in the exit stack gas will be sampled and analyzed at least once per hour, during all Operating Periods. Sampling will be conducted by Orsat test or other method (*e.g.*, portable analyzer). The most recent hourly reading will be substituted for the four 15-minute average measurements that would otherwise be utilized if the analyzer were operating normally.

    - Stack volumetric flow rate will be estimated using engineering judgment.

- If any one or more than one analyzer is/are not operating for a period of less than 24 hours, Mosaic will either: (i) follow the requirements set forth for a 24-hour or greater period of downtime to fill in the data gaps; or (ii) use the data recorded for the reading immediately preceding the affected analyzer's(s') stoppage to fill in the data gap.

- Stack gases from the D Train are assumed to be dry.

Emissions Calculations

Rolling 3-Hour Average

For purposes of calculating a rolling 3-hour average, the CEMS will maintain an array of the 12 most recent 15-minute average measurements of each of the three monitored parameters. Every fifteen minutes, it will add the most recent readings to the array and exclude the oldest readings.

The rolling 3-hour average lb/ton SO_2 emission rate (E_{3hravg}) will then be calculated every 15 minutes using Equation 4.

Equation 4:

$$E_{3hravg} = \frac{S \cdot \sum_{i=1}^{12} Q_{Stack\ i} \cdot Cs_i}{\sum_{i=1}^{12} Q_{Stack\ i} \cdot \left(0.264 - 0.0126 \cdot \%O_{2i} - 7.61 \cdot Cs_i\right)}$$

Where:

$\%O_{2i}$ = Arithmetic average of 15 one-minute measurements of stack O_2 concentration, percent by volume dry basis at interval "*i*"

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCF per minute at interval "*i*"

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

E_{3hravg} = 3-hour average lb SO_2 per ton 100% Sulfuric Acid Produced

Rolling 365-day Average

For the purposes of calculating the rolling 365-day average lb/ton SO_2 emission rate, the CEMS will maintain an array of all 15-minute average measurements of the SO_2 concentration at the exit stack, O_2 concentration at the exit stack, and the volumetric flow rate of the exit stack taken over all Operating Periods between 6:00 am local time each Day and 6:01 am local time 366 Days prior. Every Day, the 15-minute average measurements taken between 6:00 am local time on that Day and 6:01 am local time the previous will be added to the array and the 15-minute average measurements taken between 6:00 am local time on the oldest Day and 6:01 am local time the Day previous to the oldest Day will be excluded.

After 6:00 am local time each Day, the SO_2 emission rate as lb/ton, averaged over a rolling 365-day period ($E_{365-day\ Avg}$) will be calculated using Equation 5.

Equation 5:

$$E_{365-day\ Avg} = \frac{S \cdot \sum_{i=1}^{n} Q_{Stack\ i} \cdot Cs_i}{\sum_{i=1}^{n} Q_{Stack\ i} \cdot \left(0.264 - 0.0126 \cdot \%O_{2i} - 7.61 \cdot Cs_i\right)}$$

Where:

$\%O_{2i}$ = Arithmetic average of 15 one-minute measurements of stack O_2 concentration, percent by volume dry basis at interval "*i*"

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCF per minute at interval "*i*"

S = the acid production rate factor, 11,800 DSCF/Ton of 100% Sulfuric Acid Produced;

n = the number of 15-minute measurement intervals between 6:00 am local time on a given Day and 6:01 am local time 366 Days prior.

$E_{365-day\ Avg}$ = 365-day rolling average lb SO_2 per ton of 100% Sulfuric Acid Produced on a given Day over all Operating Periods between 6:00 am local time on that Day and 6:01 am local time 366 Days prior.

Daily Mass of SO_2 Emissions.

For the purposes of calculating the daily mass of SO_2 emissions, the CEMS will maintain an array of all 15-minute average measurements of the SO_2 concentration at the exit stack and the volumetric flow rate of the exit stack taken during all Operating Periods between 6:00 am local time each Day and 6:01 am local time the previous Day.

After 6:00 am local time each Day, the daily mass of SO_2 emissions (M_{SO_2day}) will be calculated using Equation 6.

Equation 6:

$$M_{SO_2day} = \sum_{i=1}^{m} Q_{Stack\ i} \cdot Cs_i \cdot 15\,\text{min}$$

Where:

Cs_i = Arithmetic average of 15 one-minute measurements of stack SO_2 concentration, lb/DSCF at interval "*i*"

$Q_{Stack\ i}$ = Arithmetic average of 15 one-minute measurements of stack volumetric flow rate, DSCFM at interval "*i*"

M_{SO_2day} = Daily mass emissions of SO_2, lb

m = Number of 15-minute average measurement intervals between 6:00 am local time on a given Day and 6:01 am local time the previous Day.

12-Month Rolling Sum of Mass SO_2 Emissions.

After 6:00 am local time on the last Day of each Month, the 12-Month rolling sum mass of SO_2 emissions ($M_{SO_2 12Mo\ Sum}$) will be calculated using Equation 7:

Equation 7:

$$M_{SO_2 12Mo\ Sum} = \sum_{j=1}^{d} M_{SO_2day\ j}$$

Where:

$M_{SO_2 day\ j}$ = Daily mass emissions of SO_2 calculated for Day "*j*", lb

d = Number of Days in the preceding 12 calendar months

$M_{SO_2 12 Mo\ Sum}$ = 12-Month rolling sum of SO_2 emitted into the atmosphere, lb

Rounding of Numbers resulting from Calculations

Upon completion of the calculations, the final numbers shall be rounded as follows:

E_{3hravg} : Rounded to the nearest tenth.

$E_{365-day\ Avg}$: Rounded to the nearest hundredth.

$M_{SO_2 12 Mo\ Sum}$: Rounded to the nearest one-hundredth of a ton (*i.e.*, 20 lb).

The number "5" shall be rounded up. Thus, a short-term rate of 2.2511 shall be rounded to 2.3.

Compliance with Consent Decree SO_2 Limits

Short-Term SO_2 Limits

The Short-Term Limit does not apply during periods of Startup, Shutdown, or Malfunction ("SSM"). During all other Operating Periods, Mosaic will be in compliance with the Short-Term SO_2 Consent Decree Limit if E_{3hravg} does not exceed 3.5 lb of SO_2 per ton of 100% Sulfuric Acid Produced. If Mosaic contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of 3.5 lb/ton after the period of the Malfunction(s) end(s), Mosaic shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

New Source Performance Standards ("NSPS") SO_2 Limits

The NSPS Limit does not apply during periods of Startup, Shutdown, or Malfunction. During all other Operating Periods, Mosaic will be in compliance with the NSPS Limit if E_{3hravg} does not exceed 4.0 lb of SO_2 per ton of 100% Sulfuric Acid Produced. If Mosaic contends that emissions during a Malfunction(s) resulted in a calculated 3-hour rolling average emission rate(s) in excess of 4.0 lb/ton after the period of the Malfunction(s) end(s), Mosaic shall recalculate E_{3hravg} to exclude measurements recorded during the period(s) of the claimed Malfunction(s).

Long-Term SO_2 Limits

Mosaic will be in compliance with the Long-Term SO_2 Consent Decree Limit each Day that $E_{365-day\ Avg}$ does not exceed 2.20 lb of SO_2 per ton of 100% Sulfuric Acid Produced.

Mass Cap for SO_2

Mosaic will be in compliance with the Mass Cap each Month that the 12-month rolling sum ($M_{SO_2 12 Mo\ Sum}$) is 884 tons (1,768,000 lb) of SO_2 or less.

Retention of All CEMS Data, including Data during Startup, Shutdown, and Malfunction

Mosaic will retain all data generated by its SO_2 analyzer, O_2 analyzer, and stack flow analyzer, including all data generated during SSM of the Sulfuric Acid Plant in accordance with Section XII (Information Collection and Retention) of the Consent Decree.

Analyzer Specifications

The three analyzers will meet the following specifications:

Table 1

Parameter	Location	Range
SO_2, lb/DSCF	Stack	Dual range: Normal: 0 – 500 ppm SO_2 SSM: 0 – 3,600 ppm SO_2
O_2, percentage, dry basis	Stack	Single range: 0 – 20.9 % O_2
Volumetric flow rate, dry standard cubic feet per minute ("DSCFM")	Stack	13% to 125% of the maximum expected volumetric flow rate

The stack SO_2 analyzer will meet all applicable requirements of 40 C.F.R. §§ 60.11, 60.13, 40 C.F.R. Part 60, Appendix B, Performance Specification 2, and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

The stack O_2 analyzer will meet 40 C.F.R. Part 60 Appendix B, Performance Specification 3 and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

The volumetric flow rate analyzer will meet 40 C.F.R. Part 60, Appendix B, Performance Specification 6 and the Quality Assurance and Quality Control Procedures in 40 C.F.R. Part 60, Appendix F, Procedure 1.

Compliance with the NSPS: 40 C.F.R. Part 60, Subpart H

In addition to the requirements in this CEMS Plan, Mosaic also will comply with all of the requirements of the NSPS relating to monitoring except that, pursuant to 40 C.F.R. § 60.13(i), this CEMS Plan will supersede the following provisions of 40 C.F.R. Part 60, Subpart H:

- The requirement at 40 C.F.R. § 60.84(a) that the stack SO_2 analyzer have a span value of 1000 ppm. In lieu of this, Mosaic will utilize the span values specified in Table 1 above; and

- The procedures specified at 40 C.F.R. § 60.84(b) for converting monitoring data into the units of the applicable standard. In lieu of this, Mosaic will utilize the procedures specified in this CEMS Plan for calculating compliance with the NSPS 3-hour average limit.

Appendix D

A Train Interim Mass Caps between May 2013 and March 2014:

Month	Interim Mass Cap (tons)
May 2013	587
June 2013	570
July 2013	553
August 2013	536
September 2013	520
October 2013	503
November 2013	486
December 2013	469
January 2014	453
February 2014	436
March 2014	419