

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5**

<b>In the Matter of:</b>	)	<b>EPA-5-12-113(a)-IL-05</b>
	)	
<b>Afton Chemical Corporation</b>	)	<b>Proceeding Under Sections 113(a)(1),</b>
<b>Sauget, Illinois</b>	)	<b>(a)(3), and 114(a) (1) of the Clean Air Act</b>
	)	<b>42 U.S.C. §§ 7413(a)(1), (a)(3),</b>
	)	<b>and 7414(a)(1)</b>
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**I. Administrative Consent Order**

1. The Director of the Air and Radiation Division, U.S. Environmental Protection Agency, Region 5, is issuing this Order to Afton Chemical Corporation under Sections 113(a)(1), (a)(3), and 114(a)(1) of the Clean Air Act (Act), 42 U.S.C. §§ 7413 (a)(1), (a)(3), and 7414(a)(1).

**II. Statutory and Regulatory Background**

2. Each state must submit to the Administrator of EPA a plan for attaining and maintaining the National Ambient Air Quality Standards under Section 110 of the Act, 42 U.S.C. § 7410.
3. On April 2, 1996, EPA approved Illinois Rule 35, Illinois Administrative Code (IAC) 219 as part of the federally enforceable State Implementation Plan (SIP) for Illinois. 61 Fed. Reg. 1448.
4. 35 IAC 219.501 of the Illinois SIP requires that synthetic organic chemical manufacturing industry batch and air oxidation processes control volatile organic material emissions to the environment. Afton uses Flare 266/280 to meet the 35 IAC 219.501 control requirements at the 267, 280, and 290 process units. 35 IAC 219.501 states that the flare shall comply with 40 C.F.R. § 60.18.
5. Section 111(b) of the CAA, 42 United States Code (U.S.C.) § 7411(b) requires EPA to publish a list of categories of stationary sources and, within a year after the inclusion of a category of stationary sources in the list, to publish proposed regulations establishing federal standards of performance for new sources within the source category.
6. On October 15, 1973, EPA promulgated the General Provisions for the New Source Performance Standards (NSPS) standards at 40 C.F.R. Part 60, Subpart A, §§ 60.1 - 60.19. 38 FR 28565; the provisions have been subsequently amended.

7. 40 C.F.R. § 60.11(d) requires that “at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.”
8. 40 C.F.R. § 60.18(d) provides that “owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs...”.
9. 40 C.F.R. § 60.18(c)(3)(ii) requires that flare owner/operators only combust gases that meet certain heat content specifications. For steam assisted flares, the minimum heat content for the gases being combusted is 300 British thermal units per standard cubic foot (BTU/scf).
10. On April 8, 1987, EPA promulgated Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, found at 40 C.F.R. Part 60, Subpart Kb. 52 FR 11429. The affected facility to which this subpart applies is generally each storage vessels larger than 75 cubic meters that is used to store volatile organic liquids. 40 C.F.R. § 60.110(b).
11. Afton’s Carbon Disulfide Storage Tank, Tank 125, is an affected facility under Subpart Kb and vents to Flare 266/280.
12. 40 C.F.R. § 60.112b(a)(3)(ii) provides that flares used as a control device pursuant to Subpart Kb must comply with Section 60.18 of Part 60, Subpart A, General Provisions.
13. Section 502(a) of the Act states “After the effective date of any permit program approved or promulgated under this subchapter, it shall be unlawful for any person to violate any requirement of a permit issued under this subchapter, or to operate...a major source...except in compliance with a permit issued by a permitting authority under this subchapter.”
14. 40 C.F.R. § 70.7(b) states “...no part 70 source may operate after the time that it is required to submit a timely and complete application under an approved permit program, except in compliance with a permit issued under a part 70 program.”
15. 40 C.F.R. § 52.23 states "...failure to comply with...any approved regulatory provision of a State implementation plan, or with any permit condition or permit denial issued pursuant to approved or promulgated regulations for the review of new or modified stationary or indirect sources, or with any permit limitation or condition contained within an operating permit issued under an EPA-approved program that is incorporated into the State implementation plan, shall render the person or governmental entity so failing to comply in violation of a requirement of an applicable implementation plan and subject to enforcement action under section 113 of the Clean Air Act."

16. EPA fully approved the Illinois Title V Permit program, effective December 4, 2001. 66 FR 62946. Illinois' Title V Permit program requirements are codified at IAC Title 35, Part 270.
17. The Illinois Environmental Protection Agency (Illinois EPA) issued a Title V Permit to the facility on December 17, 2009.
18. Paragraph 5.4.4 of Afton's Title V permit applies to flares that are used as a control device to meet 40 C.F.R. Part 60 and 63, and SIP Section 219 control requirements. Specifically, it requires flares to meet the heat content specifications in 40 C.F.R. § 60.18.
19. Paragraph 7.10.3(c) of Afton's Title V permit applies to process unit 280 and requires compliance with 35 IAC 219.501. Paragraph 7.10.5(b) states the flare shall comply with 40 C.F.R. § 60.18.
20. Paragraph 7.13.3(c) of Afton's Title V permit applies to process unit 290 and requires compliance with 35 IAC 219.501. Paragraph 7.13.5(b) states the flare shall comply with 40 C.F.R. § 60.18.
21. Paragraph 7.16.3(c) of Afton's Title V permit applies to process unit 267 and requires compliance with 35 IAC 219.501. Paragraph 7.16.5(b) states the flare shall comply with 40 C.F.R. § 60.18.
22. Under Section 113(a)(1) of the Act, 42 U.S.C. § 7413 (a)(1), the Administrator of EPA may issue an order requiring compliance to any person who has violated or is violating a SIP. Under Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3), the Administrator of EPA may issue an order requiring compliance to any person who has violated or is violating the NSPS regulations. The Administrator has delegated this authority to the Director of the Air and Radiation Division.
23. The Administrator of EPA may require any person who owns or operates an emission source to make reports, install, use and maintain monitoring equipment, sample emissions and provide information required by the Administrator under Section 114(a)(1) of the Act, 42 U.S.C. § 7414(a)(1). The Administrator has delegated this authority to the Director of the Air and Radiation Division.

### **III. Findings**

24. Flare 266/280 is a steam assisted flare. Steam is added to the vent gas exiting the flare during certain operating scenarios. This steam addition can occur automatically through control logic, or manually to levels specified by operations personnel.
25. Afton supplied to EPA flare operating data for a period of ten days. During certain times on four of those days, Afton supplied steam to its flare, rendering the flare "steam assisted" during periods where the heating value was not consistently maintained to at least 300 BTU/scf. Afton operates its flare as "steam assisted" but, during the

aforementioned ‘certain times,’ failed to consistently meet a minimum heating value of 300 BTU/scf.

26. EPA alleges the failure of Afton to consistently maintain 300 BTU/scf in the gases to be combusted at the flare is a violation of 40 C.F.R. § 60.18(c)(3)(ii), the Illinois SIP, and its Title V permit.
27. Most flare manufacturers provide design documents and some form of operations and maintenance instruction to flare owners, usually around the time the flare is installed. The flare documents and instructions in Afton’s possession, and provided by Afton’s flare vendor, (“Afton’s Flare Documents”) stated the minimum steam rates and maximum steam capability. Specifically, Afton’s Flare Documents state, “During a flare event, the steam flow to the Upper Steam Ring should be adjusted to the point where smoke is not visible and the flame is a yellow-orange color. Excessive steam injection will cause high noise and can cause a reduction in destruction efficiency. As waste gas flow varies, steam flow should be varied accordingly to avoid over-steaming or smoking.”
28. EPA alleges that Afton’s failure to operate the flare in accordance with manufacturer’s instructions and published guidance documents that prescribe or recommend the amount of steam to add to the flare is a failure to meet the requirement to use good air pollution control practices to minimize emissions found at 40 C.F.R. § 60.11(d) of the NSPS.
29. On September 7, 2011, EPA issued Afton an information request for flare operating data.
30. On February 3, 2012, EPA issued to Afton a Notice of Violation/Finding of Violation (NOV/FOV) alleging the violations in paragraphs 26 and 28 above.
31. On March 16, 2012, representatives of Afton and EPA discussed the February 3, 2012, NOV/FOV.

#### **IV. Compliance Program**

32. No later than 12 months from the effective date of this Order, Afton agrees that it shall achieve compliance with 35 IAC 219.501, 40 C.F.R. § 60.11(d), and the applicable sections of its Title V permit (referenced in paragraphs 18 through 21) at its facility in Sauget, Illinois.
33. Since September 7, 2011, Afton has implemented the following actions and agrees that it shall continue to implement these actions in order to improve the operation of Flare 266/280:
  - a. Maintain 300 BTU/SCF in the Vent Gas when steam assist is used, regardless of whether the steam valve is operated in manual or automatic mode, or the “adduct charge” process is in “hold” mode.
  - b. Add steam to the flare to prevent smoking during the portion of a Unit 280 reactor batch when “adduct” is charged to the reactor. Maintain steam control programming to force the flare steam control valve into the “auto” mode at the

beginning and end of the adduct charge. In addition, if the steam valve is in “manual” mode for more than 30 minutes, the system shall send the operator an alarm to ensure that the valve is not left open in manual mode.

- c. Maintain the steam recipe to reduce steam use during both the first 5000 pounds and the last 1500 pounds of the adduct charge.
- d. Maintain the steam recipe to break up the steam valve control protocol into smaller segments, allowing for finer control during periods where the isobutylene concentration changes considerably.
- e. Instruct process operators to make sure they only use as much steam as is needed to control smoke and to make sure they can see a visible flame.

34. This Order sets forth a program of compliance that Afton agrees it shall follow to correct violations alleged in the February 3, 2012, NOV/FOV. This program consists of:

- a. Operating limitations and requirements in paragraph 35 and the Instrumentation and Process Control Plan, attached as an Appendix;
- b. Permit modification described in paragraph 38; and,
- c. Recordkeeping described in paragraph 39.

35. Afton agrees that it shall comply with the following operating limitations and requirements at the flare:

- a. Ensure the flare complies with all applicable federal, state and local provisions governing flare operation, including, but not limited to, those related to smoke, exit velocity, heating value of the vent gas (NHV<sub>vg</sub>) (e.g. 300 BTU/scf), and adhering to the flare’s design while using good air pollution control practices;
- b. For this section (35), “One-Hour Rolling Average” shall mean the arithmetic average of 12 consecutive averages that are calculated every 5 minutes while waste gas is being vented to the flare.
- c. Ensure the NHV in the Combustion Zone (NHV<sub>cz</sub>) meets a minimum of 300 BTU/scf on a One-Hour Rolling Average basis whenever the flare is combusting waste gas;
- d. Ensure the steam to vent gas ratio (S/VG ratio) shall remain less than or equal to either 2.5 on a mass basis or 3.0 on a volume basis, on a One-Hour Rolling Average basis whenever the flare is combusting waste gas.
- e. Ensure the addition of supplemental gas and steam required to meet the S/VG, NHV<sub>vg</sub>, and NHV<sub>cz</sub> limits above shall be automated to the greatest extent possible; and
- f. Whenever the flare is combusting waste gas, measure and record 5 minute averages, and the associated One-Hour Rolling Average, for the following parameters for Flare 266/280:
  - i. Steam flow in lb/hr and scfm;
  - ii. Vent gas flow in lb/hr and scfm;
  - iii. Vent Gas Molecular Weight
  - iv. NHV<sub>vg</sub> in BTU/scf
  - v. NHV<sub>cz</sub> in BTU/scf ;
  - vi. Steam to vent gas ratio in pound to pound and scf to scf;
- g. Maintain records of the following for Flare 266/280:

- i. Hours each month when a steam to vent gas ratio or heating value could not be determined due to downtime of the instruments or control system;
- ii. Hours each month of non-operation of the steam flow meter, vent gas flow meter, vent gas molecular weight meter, and calorimeter, and the reason for the non-operation;
- iii. Hours of operation each month that the S/VG ratio exceeds both 2.5 on a mass basis and 3.0 on a volume basis, the cause of each event, and actions Afton took in response to remedy the exceedance; and
- iv. Hours of operation each month that the NHVcz was below 300 BTU/scf, the cause of each event, and actions Afton took in response to remedy the exceedance.

36. A failure to comply with the operating limitations and requirements in paragraph 35 and the Instrumentation and Process Control Plan shall not constitute a violation of such operating limitations and requirements if the noncompliance results from downtime of instruments or equipment due to the following:

- a. Malfunction of an instrument, for an instrument needed to meet the requirement(s);
- b. Maintenance following instrument Malfunction, for an instrument needed to meet the requirement(s);
- c. Scheduled maintenance of an instrument in accordance with the manufacturer's recommended schedule, for an instrument needed to meet the requirement(s);
- d. Quality Assurance/Quality Control activities on an instrument needed to meet the requirement(s).

However, it shall be a violation of the operating limitations and requirements in paragraph 35 and the Instrumentation and Process Control Plan if the sum of the length of these events (a.- d.) exceeds 110 hours in any calendar quarter for any individual instrument. This 110 hour restriction relates only to periods of time during which there is waste gas flow to the flare.

37. Afton agrees that it shall install the equipment, instrumentation, and programming outlined in the Instrumentation and Process Control Plan within 11 months of the effective date of this Order. Afton agrees that it shall meet all other operating limitations and requirements in Section IV of this Order within 12 months of the effective date of this Order.

38. Afton shall apply for a modification to an existing, or apply for a new, federally enforceable non-Title V CAA permit (the Application) that covers Flare 266/280 so that it incorporates the limitations and requirements in Section IV of this Order (Compliance Program). The Application shall be made in accordance with applicable State of Illinois regulations. The Application shall be submitted to the Illinois EPA no later than ten months after the effective date of this Order, and a copy shall be provided simultaneously to EPA. Afton shall make a good faith effort to assist the State of Illinois in permitting these changes and subsequently incorporating these changes into the Title V permit, where appropriate.

39. Recordkeeping:

- a. Afton must keep all pertinent records of the implementation of this Order, including purchase records, work orders and instrument calibrations, for at least three years after the termination of this Order unless a longer time is required by permit or regulation; and,
- b. Afton shall keep the records listed in paragraph 35 f. and g. pertaining to the operation of Flare 266/280 for a period of three years after termination of this Order unless a longer time is required by permit or regulation.

40. Any submittals required under this Order shall be sent to:

Attention: Compliance Tracker (AE-17J)  
Air Enforcement and Compliance Assurance  
Branch  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard  
Chicago, Illinois 60604

**V. General Provisions**

- 41. This Order does not affect Afton's responsibility to comply with other federal, state and local laws.
- 42. This Order does not restrict EPA's authority to enforce the Illinois SIP and Section 111 of the Act, or any other section of the Act. Nothing in this Order limits the EPA's authority to seek appropriate relief, including penalties, under Section 113 of the Act, 42 U.S.C. § 7413, for Afton's violation of the Illinois SIP, NSPS, or Title V of the Act.
- 43. Failure to comply with this Order may subject Afton to penalties of up to \$37,500 per day for each violation under Section 113 of the Act, 42 U.S.C. § 7413, and 40 C.F.R. Part 19.
- 44. The terms of this Order are binding on Afton, its assignees and successors. Afton must give notice of this Order to any successors in interest prior to transferring ownership and must simultaneously verify to EPA, at the above address, that it has given the notice.
- 45. Afton may assert a claim of business confidentiality under 40 C.F.R. Part 2, Subpart B, for any portion of the information it submits to EPA. Information subject to a business confidentiality claim is available to the public only to the extent allowed by 40 C.F.R. Part 2, Subpart B. If Afton fails to assert a business confidentiality claim, EPA may make all submitted information available, without further notice, to any member of the public who requests it. Emission data provided under Section 114 of the Act, 42 U.S.C. § 7414, is not entitled to confidential treatment under 40 C.F.R. Part 2, Subpart B. "Emission data" is defined at 40 C.F.R. § 2.301.
- 46. This order is not subject to the Paperwork Reduction Act, 44 U.S.C. § 3501 *et seq.*, because it seeks collection of information by an agency from specific individuals or

entities as part of an administrative action or investigation. To aid in our electronic recordkeeping efforts, please furnish an electronic copy on CD or thumb drive. If not possible, provide your response to this Order without staples; paper clips and binder clips, however, are acceptable.

47. EPA may use any information submitted under this Order in an administrative, civil judicial or criminal action.

48. Afton agrees to the terms of this Order. This Order is effective on the date of signature by the Director of the Air and Radiation Division. This Order will terminate two years from the effective date, provided that Afton has complied with all terms of the Order throughout its duration.

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Date

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Afton Chemical Corporation

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Date

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George T. Czerniak  
Acting Director  
Air and Radiation Division





**CERTIFICATE OF MAILING**

I, Loretta Shaffer, certify that I sent the Administrative Consent Order, EPA Order No. EPA-5-12-113(a)-IL-05, by certified mail, return receipt requested, to:

Kindra L. Kirkeby  
Assistant Counsel- Environmental  
NewMarket Services Corporation  
330 S. Fourth Street  
Richmond, VA 23219  
(804)788-5513

I also certify that I sent a copy of the Administrative Consent Order, EPA Order No. EPA-5-12-113(a)-05, by first-class mail to:

Ray Pilapil, Manager  
Compliance and Systems Management Section  
Illinois Environmental Protection Agency  
1021 North Grand Avenue  
Springfield, Illinois 62702

On the \_\_\_\_\_ day of \_\_\_\_\_ 2012.

\_\_\_\_\_  
Loretta Shaffer  
AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: \_\_\_\_\_

Standard bcc's:

Official File Copy w/Attachment (s)

Originating Organization Reading File w/Attachment(s)

Other bcc's:

**Susan Perdomo**

**G:/AECAB/PAS/Docs Routed for Signature/MNOH/Dickens**