

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
BUREAU OF AIR

March 28, 2008

Responsiveness Summary for the  
CAAPP Permit Application for  
Solutia, Inc.  
W. G. Krummrich Plant  
Sauget, IL

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## INTRODUCTION

Solutia, Inc. has applied to the Illinois Environmental Protection Agency (Illinois EPA) for a Clean Air Act Permit Program (CAAPP) permit for its Krummrich Plant, located in Sauget, Illinois. The Krummrich plant is a chemical manufacturing operation with both organic chemical and inorganic chemicals products. Three main products are produced with two of the process having variations of the general class of product. The three main products are Santoflex, phosphorus pentasulfide, and ACL.

This draft permit is addressed to Solutia, Inc. but Solutia is the "operator" of the equipment. Each of the three main processes is owned but a separate corporation. These owners are listed in Section 1.0 of the permit.

This Responsiveness Summary has been prepared by the Illinois EPA as part of the CAAPP application for this source. A Responsiveness Summary for the first Public Notice/Hearing in 2005 was prepared when this revised draft was sent to a second Public Notice in November 2007. This Responsiveness Summary only addresses comment received during the second Public Notice which ended on January 8, 2008.

## BACKGROUND

### Clean Air Act Permit Program (CAAPP)

The Clean Air Act Permit Program (CAAPP) is Illinois' federally approved operating permit program for major stationary sources of emissions and other sources, as required by Title V of the Clean Air Act. Permits issued under the CAAPP are known as "CAAPP permits." Major stationary and other sources covered by Title V of the Clean Air Act are required to apply for and obtain a CAAPP permit. CAAPP permits must include emissions limitations and standards and other requirements under state and federal environmental laws and regulations and related provisions to assure compliance with applicable requirements. CAAPP permits generally do not impose new substantive requirements for control of emissions. Rather, these permits provide for, among other things, testing, monitoring, recordkeeping, and reporting (a portion of which may be 'new' requirements) to assure compliance with existing state and federal emission control requirements. The conditions of CAAPP permits are enforceable by the public, as well as by the state and federal government.

### Public Participation

The draft permit originally went to Public Notice on November 15, 2007 and the notice would normally have ended on December 15, 2007. However, some of the interested parties from the first Public Notice were not notified of the second Public Notice until December 8, 2007 and therefore the comment period was extended until January 8, 2008. During this notice period comments were received from Solutia and from a representative of the Sierra Club and American Bottom Conservancy.

### USEPA Review

The USEPA did not submit any comments during the December 2007-January 2008 notice period.

### **GENERAL DESCRIPTION OF THE PLANT AND THE PROPOSED PERMIT**

The highest emissions from the Solutia operations in 2006 were VOM at 39 tons. Normally this would not require a CAAPP permit but the site is major for HAP emissions.

At the Krummrich plant three main types of products are manufactured.

#### Santoflex Process

Santoflex is a trade name for an organic chemical used as a rubber additive. The process is subject to the MON. There are two "lines" for manufacturing the material. The processes are batch operations and some of the state and federal rules are excluded from applicability because the rules only apply to continuous processes and not batch processes. By making minor changes in the raw materials there can be several types of Santoflex produced. The main process lines are covered in Section 7.1 of the CAAPP permit but three storage tanks are covered in Section 7.2.

#### Phosphorus Pentasulfide Process

This is an inorganic chemical process. The raw materials and the product are all solids and emitted in PM form. Typically there are only minor amounts of visible emissions. There is one HAP material simply referred to as "phosphorus compounds". However, the USEPA is not even studying the phosphorus pentasulfide manufacturing as a possible NESHAP MACT. Phosphorus compounds is probably intended to cover some pesticides that contain phosphorus and not P<sub>2</sub>S<sub>5</sub> manufacturing.

#### ACL Process

This process is subject to the MON not for VOM material that is a HAP but from chlorine emissions, one of the raw materials that is a HAP. The product is a solid and not a VOM or HAP.

### **RESPONSE TO COMMENTS**

Comments by Solutia, the Permittee: (personnel change and typing correction are not listed here but the changes were made)

Comment: Condition 5.3.8, PM<sub>10</sub> Contingency Measure Plan.

Response: This rule is not applicable as Solutia is not in an affected area. The requirement has been deleted as well as the recordkeeping for it in Condition 5.9.2.

Comment: Construction Permit 03090026 not mentioned.

Response: Condition 7.1.6(d) was added to incorporate the limits from construction permit 03090026. The limits were for negligible emission from a bulk bag unloader in the Santoflex process.

Comment: Condition 7.1.8, 7.3.8 and 7.4.8 on opacity readings.

Response: Solutia questioned the addition of weekly opacity observations for PM emitting units and the consequent recordkeeping since those conditions have not appeared in previous permits. The Illinois EPA considers those conditions to be "gap-filling" periodic requirements to assure compliance with an applicable rule that limits opacity. These requirements have been left in the permit.

Comment: Condition 7.4.3 (e)(iii) concerning time malfunction and breakdown.

Response: The state operating permit for this process (AC1) allowed malfunction for up to 72 hours. The CAAPP draft permit did not include a limit on the number of hours. The Illinois EPA's policy on this is that although a limit of 72 puts a maximum value on the time period, it also may be interpreted to allow up to 72 hours when the equipment could be repaired in a shorter time period. For each malfunction the Permittee is required to prove that the control equipment was repaired in the minimum time possible. This condition has not been changed.

Comments by the Sierra Club/American Bottoms Conservancy:

Comment: Condition 5.3.8 PM<sub>10</sub> Contingency Measure Plan

Should the actual annual source-wide emissions of PM<sub>10</sub> equal or exceed 15 tons, then the Permittee shall prepare and submit a contingency measure plan reflecting the PM<sub>10</sub> emission reductions as set forth in 35 IAC 212.701 and 212.703. The Permittee shall submit such plan to the Illinois EPA for review and approval within ninety (90) days after the date this source becomes subject to this requirement. Such plan will be incorporated by reference into this permit and shall be implemented by the Permittee in accordance with 35 IAC 212.704 following notification by the Illinois EPA. The source shall comply with the applicable requirements of 35 IAC Part 212, Subpart U. This permit may also have to be revised or reopened to address this regulation (see Condition 9.12.2).

Question: Is PM<sub>10</sub> being used as a surrogate for PM<sub>2.5</sub>?

Response: See discussion above on Solutia comments regarding Condition 5.3.8. The PM operating plan requirements have been deleted from the permit because Solutia is not in the affected PM<sub>10</sub> nonattainment area. There are no PM<sub>2.5</sub> requirements established at this time.

Comment: Condition 5.6.2 Emissions of Hazardous Air Pollutants Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs. Question: Why are HAPs limits not set? Source is in midst of urban pollution, next to low-income and minority populations.

Response: The HAP limits are constrained by the permit fee limits. That statement about HAP limits not being set is simply a notification that any NESHAP requirements for their type of industry are applicable limits. The statement merely addresses the fact that the source does not have any synthetic limits established and that Solutia is considered to be a major source of HAPs.

Comment: Condition 5.9.2. Is there an auditable document control system in place that will capture changes in documents, e.g. for the particulate matter operating plan?

Response: Condition 5.9.2 is the recordkeeping requirement for Condition 5.3.3. Condition 5.3.3(b) addresses changes to the particulate matter operating program and the field inspector is required to verify compliance with that rule. The source is also required to certify compliance with that rule annually.

Comment: Condition 5.10.1 General Source-Wide Reporting Requirements. The Permittee shall promptly notify the Illinois EPA, Air Compliance Unit, of deviations of the source with the permit requirements within 30 days, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. There are also reporting requirements for unit specific emission units set forth in Section 7 of this permit. Reporting notification should be shorter than 30 days.

Response: The Illinois EPA believes that 30 days is sufficient for the deviations expected under this procedure. This does not change any shorter notifications required under toxic release programs or similar programs. This source does not have malfunction or breakdown provisions so they would be expected to shutdown if there was a malfunction or breakdown. The report would merely provide the excess release information during the short shutdown period and is not anticipated to have extended releases. The 30 days allows a period of time to investigate any releases.

Comment: Condition 5.10.3 mentions shall "promptly" notify if limit exceeded. This is vague - would be better to have a specified time frame, e.g. 30 days.

Response: This condition now requires 30 days as the timeframe.

Comment: Condition 7.1.2 footnote

Although pollution control devices listed in this table exist as noted, the scrubbers are not used to achieve compliance with 35 IAC 219, Subpart V.

Question: Why are scrubbers not used to achieve compliance?

Response: When the permit is issued, it will include MOH requirements. The scrubber had been removed and replaced by thermal oxidizer or adsorbers. Footnote has been removed..

Comment: Condition 7.1.3 b i/ii. Should be written more clearly to indicate that applicability analysis applies when VOM >500 ppmv or is >500 lb/year (irrespective of VOM being <500 ppmv). Currently document splits this limit over two points over 7.1.3 b i and ii.

Response: The condition is a direct quotation of the 35 IAC rule for exemption from the control requirements. The exemption explanation has been added to the condition and in Condition 7.1.5 (a) a statement has been added that the control requirements apply to units not meeting the exemption levels. However, we will try to explain the exemptions in (i). Greater than 500 lb/year only applies if greater than 500 ppmv. The unit is always exempt from control if the emitted concentration is under 500 ppmv. Perhaps this table will explain it even better.

Annual emissions	Emission concentration less than 500 ppmv	Concentration greater than 500 ppmv
Less than 500 lb/yr	Exempt from control (both reasons)	Exempt from control (under 500 lb/yr)
Greater than 500 lb/yr	Exempt from control (under 500 ppmv)	Subject to control (over 500 lb/yr and over 500 ppmv)

Comment: Condition 7.1.3.c Seems to imply discharge limit of >3.6 kg/hr to atmosphere can be exceeded if have vapor recovery system which can remove 85% of emission organics from process (the remainder of which may still exceed 3.6 kg/hr??). The way it is written does not appear to safeguard against a limit of 3.6 kg/hr being exceeded when vapor recovery is in place. Should be an explicit maximum even when vapor recovery process in place.

Response: The rule allows for emissions to exceed 8 lb/hr (3.6 kg/hr) as long as there is 85% control in place. For instance, if precontrol emissions were 100 lb/hr and control was 88%, the post-control emissions would be 12 lb/hr but that would be in compliance. The 8 lb/hr part of the rule is used when there is no control. The rule is under 8 lb/hr "or" 85% or better control and not "and".

Comment: Condition 7.1.3(e). Final compliance date of May 10, 2008, is four months away. SSM Plan should have already been submitted and made a part of this permit.

Response: When the final permit is issued it will be after May 10, 2008 so all references to effectiveness after May 10, 2008 have been deleted from the permit. Guidance for the SSM plan from the USEPA is as follows: The language of 40 CFR 63.6(e)(3)(i) is to ensure that the requirement to prepare and implement a SSM plan is explicitly state with the source's operating permit but the contents of the plan are not to be actually written into the permit. This conclusion follows from the requirements for the SSM plan: the repository for the SSM plan is at the source's location; that revisions to the SSM plan by the owner or operator are not required to be submitted to the EPA; and that the owner or operator is required to keep all previous versions of the SSM plan for a period of 5 years. The requirements to prepare and implement the SSM plan remains enforceable. While there is no need for a source's SSM plan to be submitted with the title V permit application or included in the source's operating permit, the permitting authority may review a copy of the source's SSM plan if desired.

Comment: Condition 7.1.5 a i/ii Seems vague. Appears to read 'if below certain flow rate value then reduce VOM emissions by at least 90% or 20 ppm'. If higher flow rate, would not VOM reductions be of greater focus than if a lower flow rate? If above specified flow rate (calculated from applicability calculations), are there other limits imposed somewhere else within the permit?

Response: The "flow rate (FR)" is a calculated value per 35 IAC 219.500(e) and a low value is the way to demonstrate minimum emissions. This is because lower flow rates can have higher concentrations of VOM.

Comment: Condition 7.1.5 b Vague - define what "good operating practices" are.

Response: The Permittee may choose good operating practices. The current draft did not specify recordkeeping for good operating practices but Condition 7.1.9(h) has been added to require such recordkeeping.

Comment: Condition 7.1.6 b Would be better to explicitly state what the 40 tons/yr applies to, i.e. line 1 and 2. There should be a peak emission level reported on occurrence if exceeded rather than just a rolling average of results.

Response: The affected Santoflex process defined in Condition 7.1.3(a) already includes both lines. The word combined has been added to explain the limit is for the two lines added together and not each individual line.

Comment: Condition 7.1.6 f Vague - define criteria for worst case conditions.

Response: The commenter must have meant 7.1.7(f) since there is no 7.1.6(f). Assuming it is 7.1.7, the Permittee defines worst case conditions when it performs required testing.

Comment: Condition 7.1.8 e Vague - Is there no previous best practice that might indicate what variables and ranges would be appropriate?

Response: The Permittee defines these variables and ranges when it performs required testing.

Comment: Condition 7.1.9 a Does this require average flow rate also as per 7.1.9 b ii?

Response: This is a direct quotation of the applicable rule and appears adequate.

Comment: Condition 7.1.9 e v. Is a maximum spot limit also required in addition to monthly averages?

Response: This record is to verify compliance with Condition 7.1.6 and for the annual emission report. A spot value would not be appropriate.

Comment: Condition 7.1.10 b What about the 500 lb/yr limits that was described in 7.1.3 b i/ii?

Response: This is addressed in 7.1.10(a)(ii).

Comment: There were a number of comments on accuracy of emissions, limits or test measurements. Conditions 5.6, 7.1.6(c), 7.1.8(a), 7.1.9(c), 7.1.9(g) and 7.1.10(d).

Response: The numbers listed are sufficient to determine compliance with any applicable regulations or construction permit conditions. Typically the Illinois EPA requires that numbers be a significant number beyond the rule allowable. For instance, for the 8 lb/hr rule the emissions would have to be measured as 8.1 or 8.7 lb/hr and could not be rounded down to 8. Test method accuracy is specified by the test methodology.