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January 21, 2008

Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

Attention: Ms. Trina Vielhauer, Chief

**RE: Mosaic Fertilizer, LLC
Draft Permit No. 1050059-055-AC
Best Available Retrofit Technology (BART) for New Wales Plant
Comments on Draft BART Permit**

RECEIVED

JAN 24 2008

BUREAU OF AIR REGULATION

Dear Ms. Vielhauer:

Mosaic Fertilizer, LLC has received the Florida Department of Environmental Protection's (FDEP) draft permit package dated November 28, 2007 regarding Best Available Retrofit Technology (BART) at the New Wales Plant. The package includes the public notice, Technical Evaluation and Preliminary Determination (TE&PD), and the draft permit. Mosaic, Golder Associates Inc., and Mosaic's legal counsel have reviewed the draft permit package. We have also considered the Department's comments during our meeting of January 11 in Tallahassee to review the draft BART permit. Our comments on the draft permit package are presented below. We ask that the Department consider and incorporate each of these comments in issuing the final BART permit, and we look forward to discussing these issues further with you and your staff.

Technical Evaluation and Preliminary Determination

Page 2 of 25, Project Description: The table of BART-eligible emissions units (EUs) contains three EUs (008, 017 and 053) for which is it stated "Therefore, this plant should have been exempted from BART review." This statement should be clarified that these EUs are not subject to BART review, or should be removed from the table.

Page 4 of 25, Regulatory Authority: 1st paragraph- This "project" is not subject to all regulations as indicated. Individual emissions units or the facility as a whole may be subject to the listed regulations, but not due to the BART project.

Pages 7-11, Baghouse Controls: In the discussion on BART for the baghouses, lower visible emissions (VE) limits are set at 5% opacity for each baghouse. The BART regulations in 40 CFR 51.301 defines BART as follows:

Best Available Retrofit Technology (BART) means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

There is no rationale for including VE limits as BART. It has been demonstrated and is recognized that VE from baghouses do not correlate well with mass emissions. VE is related more to particle size than mass quantity. Given an equal amount of mass emissions, fine particles will cause much higher visible emissions than large particles. Lowering the VE limit on the baghouses will have no effect on actual PM mass emissions, and therefore actual visibility conditions in the Class I area. The BART regulations in 40 CFR 51.308(e) requires the Department to consider the predicted visibility improvement of any conditions imposed:

A) The determination of BART must be based on an analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each BART-eligible source that is subject to BART within the State. In this analysis, the State must take into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

Therefore, the Department should appropriately consider the level of visibility improvement, if any, associated with each BART determination.

An additional major concern is that 5% opacity would have to be met at all times with each and every baghouse (excluding startup, shutdown or malfunction for up to 2 hours in a 24-hour period). Although baghouses typically achieve a 5% opacity level, this is a very low opacity limit, and if any PM emissions are observed, it is likely over the 5% opacity.

Based on all the above concerns, and since VE limits do not translate directly to visibility improvement at the Class I areas, the VE limits should be removed from the permit.

There is also concern with specifying a 0.01 gr/acf design specification exhaust loading for these baghouses, many of which were installed in the 1970's. While these baghouses were properly designed and maintained, 0.01 gr/acf was not a state-of-the-art design at the time. Vendor information may not even be available to substantiate the original design. Mosaic has contacted their supplier of bags/filters for the baghouses, and the vendors contacted thus far have been unable to confirm that the bags/filter will meet a 0.01 gr/acf outlet loading. Bags are only one factor in determining the removal capabilities of a baghouse. Of equal or greater importance is the overall baghouse design, including the air to cloth ratio (gas flow rate), baghouse cleaning method, frequency of cleaning, etc.

Mosaic has conducted a one-time test on most of the baghouses, and although a number of them demonstrated outlet dust loadings less than or equal to 0.01 gr/acf, several reflected levels between 0.010 and 0.023 gr/acf. These include EUs 026, 030, 038 and 052. One baghouse (EU 025) indicated a grain loading of 0.03 gr/acf. Therefore, each of these baghouses are believed to be capable of meeting a grain loading of 0.03 gr/acf (which was established as RACT in the 1980's).

The general VE limit of 20%, which is currently imposed on these baghouses, is sufficient to assure proper operation of the baghouses. The equivalent PM emissions, if necessary, should be calculated and added to each section of the permit "for emission inventory purposes only" and not as emission limits.

Page 11-13, Wet Control Equipment for Particulate Matter, MAP Prill Plant (EU 011):

- All the BART limits should be specified as lb/hr caps and not as lb/ton since the analysis for the visibility impact is based on maximum mass emission rates. A limit at reduced production rate will only have a lesser visibility impact and should not be considered to be a BART limit. The draft permit wording correctly expresses the PM limit on a lb/hr basis.
- Review of the statistical analysis contained in the TE&PD indicates that the analysis is predicting the confidence interval for the mean PM emission rate for those tests results analyzed when comparing to a mean from a similar test result series based on the Student's t-test. This interval cannot be appropriately used to predict the maximum expected PM emission rate. A permit limit should not be determined in this manner since compliance is determined by a single test result. Rather, it is appropriate to use a Process Capability analysis to establish the expected performance of the system. This analysis determines the processes ability to meet a specification in the future based on the past process history provided that there are no process changes. Process performance is indicated as the percentage of the time below a prescribed upper limit. The following limit is proposed in this manner based on 99% performance:
 - Based on a Process Capability analysis for EU 011, Mosaic proposes a permit limit of 7 lb/hr based on a system performance of 99%. This is based on 40 test results from 10/16/81 to 07/12/07, including tests not included in the FDEP database and more recent tests. Note that 3 results included in the analysis were greater than 7 lb/hr. This reduces the current limit from 15 to 7 lb/hr.
- This unit is compared to "similar" DAP/MAP plants at Riverview and Bartow. However, the MAP Prill Plant is a unique plant and should not be compared to MAP/DAP Plants. The processes are entirely different. In a MAP Prill Plant, liquid MAP is introduced at the top of a tall tower, creating liquid droplets. A large volume of air is drawn up the tower, concurrent to the liquid droplets falling within the tower. As the droplets fall through the tower, the moisture evaporates leaving solid particles, referred to a "prills". This process has no comparison to a MAP/DAP plant, which use granulators to create the solid MAP/DAP product.

Pages 13-15, BART Analysis for Combustion Sources, DAP Plant No. 1 (EU 009):

- See comments above regarding lb/ton limits and statistical analysis.
- We believe that requiring the use of natural gas instead of fuel oil except during a natural gas curtailment is beyond the scope of BART. As noted above, no consideration of visibility impact or the cost effectiveness of this requirement has been performed by the Department. This emissions unit has primarily burned natural gas and will continue to do so in the future. No change in the current permit conditions for this unit is warranted.
- Based on the Process Capability analysis, Mosaic proposes a permit limit of 15 lb/hr based on a system performance of 99%. This is based on 8 test results from 03/07/01 to

03/29/07 including 1 test not included in the FDEP database. Testing prior to 03/07/01 is not representative of current operation due to the installation of a new scrubber. This reduces the current limit from 28.6 to 15 lb/hr.

Pages 15-17, BART Analysis for Combustion Sources, AFI Granulation Plant (EU 027):

- See comments above regarding the statistical analysis.
- As for DAP Plant No. 1, we believe that requiring the use of natural gas instead of fuel oil except during a natural gas curtailment is beyond the scope of BART. No consideration of visibility impact or the cost effectiveness of this requirement has been performed by the Department. This emissions unit has primarily burned natural gas and will continue to do so in the future. No change in the current permit conditions for this unit is warranted.
- Based on the Process Capability analysis, Mosaic proposes a permit limit be maintained at 36.8 lb/hr. This limit provides a system performance of only 96%. This is based on 7 test results from 04/06/02 to 03/23/07. Previous testing can not be included due to the removal of three tail gas scrubbers from the system.

Pages 17-21, BART Analysis for Combustion Sources, Multifos A and B Kilns, Dryer and Blending Operation (EU 036):

- See comments above regarding the statistical analysis.
- As discussed above, we believe that requiring the use of natural gas instead of fuel oil except during a natural gas curtailment is beyond the scope of BART, and that no consideration of visibility impact or the cost effectiveness of this requirement has been performed by the Department. This emissions unit has primarily burned natural gas and will continue to do so in the future. No change in the current permit conditions for this unit is warranted.
- Based on the Process Capability analysis, Mosaic proposes a permit limit of 25 lb/hr based on a system performance of 99%. This is based on 38 test results from 02/16/84 to 10/05/07 excluding 2 special tests in the FDEP database when A Kiln was operated as a dryer. This reduces the current limit from 29.83 to 25 lb/hr.
- SO₂ Emissions: The Department presented a BACT analysis of the cost effectiveness for the proposed control in this section. However, the analysis does not consider the impact of visibility. The BART guidelines state that the analysis and the BART determination should consider:

(4) Costs of compliance—

- total annualized costs (\$),
- cost effectiveness (\$/ton),
- and incremental cost effectiveness (\$/ton), and/or any other cost-effectiveness measures (such as \$/deciview);

The BART guidelines further state:

2. Selecting a "best" alternative

1. You have discretion to determine the order in which you should evaluate control options for BART. Whatever the order in which you choose to evaluate options, you should always (1) display the options evaluated; (2) identify the average and incremental costs of each option; (3) consider the energy and non-air quality environmental impacts of each option; (4) consider the remaining useful life; and (5) consider the modeled visibility impacts. You should provide a justification for adopting the technology that you select as the "best" level of control, including an explanation of the CAA factors that led you to choose that option over other control levels.

In regard to the use of visibility impacts in the BART determination process, the BART Guidelines in 40 CFR Part 51, Appendix Y, states:

When making this determination, we believe you [FDEP] have flexibility in setting absolute thresholds, target levels of improvement, or *de minimis* levels since the deciview improvement must be weighed among the five factors, and you are free to determine the weight and significance to be assigned to each factor. For example, a 0.3 deciview improvement may merit a stronger weighting in one case versus another, so one "bright line" may not be appropriate.

The proposed controls would affect a reduction in visibility impacts at the Class I area from about 0.16 dv to about 0.060 dv, or about 0.10 dv reduction. Based on the capital and annual costs associated with SO₂ scrubbing presented in the application (\$6.5 million capital cost and \$2.4 million/yr annual cost), the cost effectiveness is approximately \$24,000,000/dv reduction.

There have been only two SO₂ tests performed on this emissions unit, one showing 316 lb/hr and the second, more recent test showing 178 lb/hr. There needs to be a series of sulfur dioxide tests conducted to accurately establish the current emissions prior to making the BART determination. Mosaic believes SO₂ emissions from the kilns are a function of the unoxidized sulfur in the raw feed to the kilns. The raw feed to the kilns consists of mainly phosphate rock, soda ash and phosphoric acid. Mosaic proposes to conduct a series of tests on the unit over a minimum period of 6-months in order to determine actual emissions over a long-term period. The sulfur content of the feed will also be measured during each test, as well as weekly over the 6-month period. Mosaic will also review its in-house data to determine if there exists long-term data on the sulfur content of its phosphate rock.

Subsequent to this testing evaluation, Mosaic will present the data to the Department along with a proposed BART technology and emission limit. This information will be presented to the Department no later than July 1, 2008.

Draft Permit

Page 1 of 13, Placard page: refers to location in White Springs, Florida.

Section 3.A. Particulate-Only Emissions Units Controlled by Baghouses

Condition 3: Delete the new opacity limit.

Condition 4: As discussed previously, the existing bags in these baghouses may not be designed or be able to achieve an outlet dust loading of 0.01 gr/acf. It is believed the existing baghouses can meet an outlet loading of 0.03 gr/acf, based on the limited test data as well as typical baghouse design from the period when the baghouses were initially installed (1970's). However, any future replacement of the entire baghouse can be ordered with this specification.

Also, equivalent emissions should be specified for emission inventory purposes only. Please reword as follows:

Each baghouse control system shall be capable of achieving an outlet dust loading of 0.03 grains per actual cubic feet of exhaust, based on either vendor design information or test data. Any baghouse replaced after the effective date of this permit shall meet a design outlet specification of 0.01 grains per actual cubic feet of exhaust. Equivalent mass emissions are for emission inventory purposes only. Compliance.....

Section 3.B. Particulate-Only Emissions Units Controlled by Wet Scrubbers

MAP Prill Plant (EU 011)

Condition 3: As previously discussed, remove the lb/ton limit.

Condition 4: The PM limits should reflect the following:

MAP Prill Plant – 7 lb/hr

Section 3.C. Emissions Units with Combustion

Condition 1: Please delete the second sentence, as the necessity of an SO₂ scrubbing system will be addressed through the proposed Compliance Plan.

Condition 5: The PM limits should reflect the following:

DAP Plant No. 1 – 15 lb/hr

AFI Granulation Plant – 36.8 lb/hr

Multifos A & B Kilns – 25 lb/hr

Reword footnote “b” as follows: “To control sulfur dioxide emissions, the permittee shall continue to fire natural gas as the primary fuel, with No. 6 fuel oil or better grade with a maximum sulfur content of 1% by weight used as a backup fuel.

The SO₂ limit for Multifos should state “to be determined”, with footnote “c” referencing the compliance plan.

Condition 6: As discussed previously, the opacity limit may not be achievable at all times under all operating conditions. Since this stack exhausts kilns and a dryer, and has a wet stack, it is requested that the opacity limit be retained at 20% opacity.

Condition 10: A permitting note should be added that for Multifos this condition is subject to revision based on the Compliance Plan.

Condition 10.b: The recording frequency should be consistent between each emissions unit, i.e., once every 12-hours.

Proposed Compliance Plan

In order to provide time to further investigate the use of an SO₂ scrubber as BART for the Multifos emissions unit (EU 036), a compliance plan is proposed. There have been only two SO₂ tests performed on this emissions unit, one showing 316 lb/hr and the second, more recent test showing 178 lb/hr. There needs to be a series of sulfur dioxide tests conducted to accurately establish the current emissions prior to making the BART determination. Mosaic believes SO₂ emissions from the kilns are a function of the sulfur content of the feed to the kilns. The feed to the kilns consists of mainly phosphate rock, with some soda ash and phosphoric acid.

Mosaic proposes to conduct a series of tests on the unit over a 6-month period in order to determine longer-term variability in emissions. This long term test period is necessary in order to assess the long term variability of the sulfur content of the raw feed, as well as the variability of the calcination and scrubbing process itself. The sulfur content of the raw feed will be measured during each test, as well as at least once weekly during the 6-month period. Mosaic will also review its in-house data to determine if there exists long-term data on the sulfur content of its phosphate rock.

Subsequent to this testing evaluation, Mosaic will present the data to the Department along with a proposed BART technology and emission limit. This information will be presented to the Department no later than 7 months following issuance of the BART permit. The proposed compliance plan is presented below:

1. Within the 6 month period following permit issuance, the permittee shall conduct a minimum of nine (9) stack test runs for SO₂ emissions on the Multifos stack. During testing, the permittee shall monitor and record the sulfur content of the raw feed to the kilns, the input process rate, scrubber parameters, fuel usage, and other process parameters.
2. At least 30 days prior to conducting the stack testing required above, the permittee shall submit a testing protocol to the Department, specifying the sampling and test procedures, sampling frequency, parameters to be monitored, quality assurance measures, and stack test report contents.
3. The permittee shall provide at least 15 days notice to the Department prior to conducting the stack testing.
4. During the 6-month test period, the permittee shall take samples of the raw feed to the kilns at least weekly, and analyze them for sulfur content.
5. No later than seven (7) months following issuance of this permit, the permittee shall submit the results of the testing program, an estimate of SO₂ emissions from the Multifos emissions unit, and a report with the proposed BART determination.

Alternative BART Compliance Strategy

Based on our discussions, the Department may consider alternative strategies which achieve equivalent or greater visibility reductions in the Class I area as those achieved by the draft BART permit. Alternatives could include non-BART emission units. Mosaic will continue to evaluate such alternatives and inform the Department of any strategies which they may like to pursue. This may

include the possibility of lowering the deciview impact of the BART-eligible source to below the exemption criteria of 0.5 deciview, in order to become exempt from BART. Proposed permit language to allow for this is provided below.

“Prior to expiration of this BART permit, the applicant may apply to the Department for an alternative BART compliance strategy which achieves equal or greater visibility reduction in the Class I area as achieved by this BART permit. This may include a BART strategy which results in a visibility impact of the BART-eligible source of less than 0.5 deciview, thereby exempting the facility from BART requirements.”

EPA Comments

Mosaic understands that EPA Region 4 has filed comments on the Mosaic Riverview draft BART determination, and may submit comments on the New Wales draft BART determination as well. Mosaic reserves the right to respond to such comments, if filed regarding New Wales, within a reasonable time.

Thank you for consideration of these comments. If you have any questions, please do not hesitate to call me at (352) 336-5600.

Sincerely,

MOSAIC FERTILIZER, LLC



David B. Jellerson
Assistant Vice President
Environmental

DB/all

Enclosures

cc: D. Turley
D. Ahrens
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