

Golder Associates Inc.

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April 18, 2006

Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

063-7561
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BUREAU OF AIR REGULATION

Attention: Mr. Syed Arif, P.E.

RE: MOSAIC FERTILIZER, LLC, GREEN BAY FACILITY
FDEP FILE NO. 1050053-041-AC/PSD-FL-359
MODIFICATION OF SOUTH AP AND NORTH MAP/DAP PLANTS
ADDITIONAL INFORMATION SUBMITTAL

Dear Mr. Arif:

In follow up to our conversation earlier this week, Golder Associates Inc. (Golder) is submitting additional information regarding the above-referenced Prevention of Significant Deterioration (PSD) application to modify the North and South Ammoniated Phosphates (AP) Plants at the Green Bay facility. As described in Golder's letter to the Department dated November 3, 2005, and authorized in the Department's letter dated November 8, 2005, Mosaic implemented certain changes to the cross-flow scrubber serving the dryer/screens/mills on the South AP Plant. Mosaic then performed one compliance test to determine the effectiveness of the changes. Based on the test results, Mosaic is now proposing revised particulate matter (PM) emission limits for both the South and North AP Plants to resolve this issue with the Department.

The changes to the South AP Plant cross-flow scrubber consisted of modifying the spray nozzles to deliver an improved spray pattern and increasing the number of sprays from 6 to 24 spray nozzles. The changes were designed to improve PM emissions only; no improvement was planned or expected in fluoride (F) emissions.

The results of the three compliance test runs are shown in Table 1, attached. Based on the results of these tests, Mosaic believes that an improvement in PM emissions may result from the scrubber modifications, and there is now greater assurance that the proposed PM emission limits can be met.

The previous statistical analysis of PM compliance tests on the two plants, submitted to the Department in an email to you dated November 3, 2005, was based on EPA's methodology for establishing confidence levels for small data sets. The 95-percent confidence level of PM compliance test averages, based on this methodology, was 0.23 lb/ton P₂O₅ for the South AP Plant, and 0.20 lb/ton P₂O₅ for the North AP Plant. Based on the improvements in the scrubbers as described above, Mosaic is proposing the following BACT limits for PM emissions for the plants:

South AP Plant: 0.21 lb/ton P₂O₅
North AP Plant: 0.19 lb/ton P₂O₅

Mosaic would not be able to accept limits any lower than these.

Although Mosaic has implemented the improved water sprays on the South AP Plant, these data with the improved sprays should not be used to set a BACT limit, since the sprays should be considered as part of the proposed project. The sprays are for the purpose of meeting the BACT

limits set on the basis of the historic PM compliance test data on the plant. The data with the new sprays represent only one compliance test and do not reflect the normal variation that can occur in PM emissions.

Although the improved spray nozzles have not been implemented on the North AP Plant, Mosaic will commit to installing the new spray nozzles as part of the proposed project, after issuance of the construction permit.

It is noted that Mosaic did not implement any changes to the venturi plates in the screens/mills and cooler venturi/cyclonic scrubbers located in the South AP Plant, as described in Golder's November 3 letter. After an engineering evaluation of the modifications to the venturi systems on the Dryer and Screen and Mill (S/M) scrubbers and to the L/G (liquid to gas) ratio for the South AP plant, it was determined that considerable redesign (including installation/modification of new pumps and fans) would need to take place to gain only 1 to 2-percent efficiency in the PM collection. It was concluded that the greatest improvement in scrubbing efficiency would be achieved with changes to the spray configuration in the Cross Flow Scrubber.

Also, Mosaic will not install any venturi plates in the North AP Plant cooler venturi/cyclonic scrubber, as described in the November 3 letter, as there are no venturi plants on these scrubbers. The letter was in error in describing a box that previously held actuated blades. In fact, such a box does not exist on the North AP Plant cooler scrubber, but rather on the low-mole scrubber. Modifications to the low-mole scrubber, while desirable by Mosaic, would not be part of this PSD application and would be completed under a separate Title V construction permit minor modification.

In regard to F emissions, Mosaic is proposing the following BACT limits for the two plants:

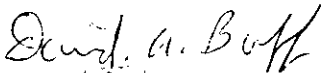
South AP Plant: 0.06 lb/ton P₂O₅
North AP Plant: MAP - 0.044 lb/ton P₂O₅
DAP - 0.0417 lb/ton P₂O₅

Again, based on the historic test data, Mosaic would not be able to accept emission limits any lower than this.

Please call if you have any questions concerning this additional information.

Sincerely,

GOLDER ASSOCIATES INC.



David A. Buff, P.E., Q.E.P.
Principal Engineer
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SEAL

DB/nav

Enclosures

cc: L. Foeller, Mosaic
D. Jellerson, Mosaic

**TABLE 1
COMPLIANCE TEST RESULTS, SOUTH DRY PRODUCTS**

Dates	Run #	Plant Rate		lb/ton PM	lb/hr F	lb/ton F
		TPH P ₂ O ₅	lb/hr PM			
Dryer/Screens/Mills/Cooler Stack						
3/15/2006	1	45	2.5654	0.057	1.0769	0.0239
	2	45	5.5226	0.123	1.0779	0.0240
	3	45	2.6508	0.059	1.4612	0.0325
				Avg. =	0.080	Avg. =
Reactor/Granulator Stack						
3/17/2006	1	45.8	0.7422	0.016	0.793	0.0173
	2	45.8	0.5073	0.011	1.0988	0.0240
	3	45.8	1.2877	0.028	0.8357	0.0182
				Avg. =	0.018	Avg. =
Total Both Stacks						
	1			0.073		0.041
	2			0.134		0.048
	3			0.087		0.051
			Avg. =	0.098		0.047