



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549-7010

Mail Stop 7010

March 2, 2007

Via U.S. mail and facsimile

Mr. Paul E. Huck
Vice President and Chief Financial Officer
Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, Pennsylvania 18195

RE: Form 10-K for the fiscal year ended September 30, 2006
Form 10-Q for the period ended December 31, 2006
File No. 1-4534

Dear Mr. Huck:

We have reviewed your response letter dated February 26, 2007 and have the following additional comments. If you disagree with our comment, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

FORM 10-K FOR THE YEAR ENDED SEPTEMBER 30, 2006

General

1. Where a comment below requests additional disclosures or other revisions to be made, please show us in your supplemental response what the revisions will look like. These revisions should be included in your future filings.

Financial Statements

Notes to the Financial Statements

Note 9. Plant and Equipment, page 62

2. We note your response to prior comment 12. You will provide additional disclosures regarding the useful lives of your production facilities by segment. Please consider also providing the corresponding amount of production facilities recorded by segment to make this disclosure more meaningful. Please also disclose the useful lives of your distribution equipment.

Note 19. Commitments and Contingencies

Environmental, page 73

3. We note your response to prior comment 14. You state that certain of the disclosures previously requested and required by SAB Topic 5:Y have been provided in your critical accounting policies. Please provide these disclosures in the notes to your financial statements. Please also provide disclosures in Note 19 regarding the Pace facility, which should include the amounts accrued, reasonably likely losses, and the current stage of the investigation and/or remediation.

FORM 10-Q FOR THE PERIOD ENDED DECEMBER 31, 2006

General

4. Please address the above comments in your interim filings as well.

* * * *

Please respond to these comments within 10 business days, or tell us when you will provide us with a response. Please provide us with a supplemental response letter that keys your responses to our comments and provides any requested supplemental information. Detailed letters greatly facilitate our review. Please file your supplemental response on EDGAR as a correspondence file. Please understand that we may have additional comments after reviewing your responses to our comments.

Mr. Paul E. Huck

March 2, 2007

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If you have any questions regarding these comments, please direct them to Nudrat Salik, Staff Accountant, at (202) 551-3692 or, in her absence, to the undersigned at (202) 551-3769.

Sincerely,

Rufus Decker
Accounting Branch Chief