



DIVISION OF  
CORPORATION FINANCE

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

October 31, 2006

Room 7010

Louis S. Massimo  
Executive Vice President and Chief Financial Officer  
Arch Chemicals, Inc.  
501 Meritt Seven  
Norwalk, CT 06851

**Re: Arch Chemicals, Inc.**  
**Form 10-K for Fiscal Year Ended December 31, 2005**  
**Form 10-Q for the Fiscal Quarter Ended March 31, 2006**  
**Form 10-Q for the Fiscal Quarter Ended June 30, 2006**  
**File No. 001-14601**

Dear Mr. Massimo:

We have reviewed the above referenced filing and have the following comments. Please note that we have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your document. We may ask you to provide us with supplemental information so we may better understand your disclosure. Please be as detailed as necessary in your explanation. After reviewing this information, we may raise additional comments.

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 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 December 31, 2005**

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 28

Critical Accounting Policies, page 48

1. In light of the materiality of your pension and post-retirement benefit plans, please expand your critical accounting policy disclosures in future filings to provide a sensitivity analysis regarding the effect of changes in your material assumptions, such as your discount rates, future compensation levels, expected return on plan assets, and mortality rates.

Item 8. Financial Statements and Supplementary Data, page 53

1. Description of Business and Summary of Significant Accounting Policies, page 58

New Accounting Pronouncements, page 60

2. You state that certain other asset retirement obligations associated with owned or leased buildings and manufacturing facilities have not been recorded because these retirement obligations have an indeterminate settlement date, and accordingly, the retirement obligation could not be reasonably estimated. Please tell us the following:
  - The reasons these obligations have an indeterminate settlement date, including your consideration of paragraph 5 of FIN 47.
  - The carrying value of all buildings and facilities which have an asset retirement obligation associated with it.
  - Of the above amount, the extent to which you have recognized an asset retirement obligation, as compared to the extent to which you have not recognized an asset retirement obligation.

Revenue Recognition, page 62

3. We note that the majority of your products are sold FOB shipping point or on an equivalent basis. Please tell us what this "equivalent basis" is and the percentage of your revenues that are sold on this equivalent basis. If material, for those products that are sold on an equivalent basis, please tell us your basis for recognizing revenue at the time of shipment. As part of your response, please clarify whether, for products sold on an equivalent basis, risk of loss of, and title to, the product is transferred to the customer at the time of shipment.

U.S. Government Contracts, page 62

4. We note that you sell and store products for the U.S. government. Please address the following:
  - Please tell us and disclose, in future filings, when risk of loss of, and title to, the product is transferred to the U.S. government. For example, please clarify whether you recognize revenue for these product sales prior to delivery.
  - Please help us understand whether these sales represent bill and hold sales. If not, please tell us why not. If so, citing relevant accounting literature, please tell us your basis for when you recognize revenue.

20. Commitments and Contingencies, page 91

5. We note the 2004 complaint filed by two parents seeking \$40 million per plaintiff in non-economic damages and \$200 million in punitive damages, as well as your disclosure that you have recorded a \$3 million reserve related to your potential exposure and that you do not expect final resolution of this case, net of insurance recovery, to be material. Please address the following:
  - Please tell us how your accrual for \$3 million regarding your potential exposure meets the criteria in paragraph 8 of SFAS 5, which requires accruals for probable exposures.
  - Please be advised that loss contingencies are to be recognized on a gross basis and not netted with gain contingencies, unless you meet the requirements of FIN 39 for the right of setoff. As such, your loss contingencies and your insurance recoveries should be evaluated separately for accounting and disclosure purposes. Accordingly:
    - Please tell us what your accrual for this exposure would have been at June 30, 2006, December 31, 2005, and December 31, 2004, had you accounted for the exposure on a gross basis (i.e. separately from your insurance recoveries).
    - Please also tell us what your receivable from your insurers would have been under paragraph 17 of SFAS 5 at June 30, 2006, December 31, 2005, and December 31, 2004, had you accounted for the recoveries on a gross basis (i.e. separately from the exposure).
    - Please tell us the range of reasonably possible losses, pursuant to paragraph 10 of SFAS 5, in excess of the amount accrued, had you recognized an accrual on a gross basis.
    - In future filings, please revise your disclosures to discuss your loss contingencies separately from your insurance recoveries. Please also disclose the costs of litigating, as well as the expected timing of payments accrued and unrecognized amounts.

6. With respect to your CCA-related personal injury lawsuits, we note your disclosures that resolution of your cases is not likely to have a material adverse effect on your consolidated financial condition, cash flow or results of operations. Please tell us whether your assessment of materiality is based on amounts net of insurance recoveries. If so, please address the following:
  - Please tell us the impact to your accounting and disclosures, had you evaluated these lawsuits separately from any potential recoveries. Specifically, please tell us the impact to your balance sheet and income statement as of and for the years ended December 31, 2005 and 2004, as well as at and for the six months ended June 30, 2006. Please also tell us whether your statement regarding immateriality would still be appropriate, had you evaluated materiality on a gross basis.
  - Please tell us the range of reasonably possible losses, pursuant to paragraph 10 of SFAS 5, in excess of the amount accrued (if any), had you recognized an accrual on a gross basis.
7. With respect to ACCC's potential penalty against KAWP, please tell us and disclose the likelihood of any loss exposures and the range of reasonably possible losses, pursuant to paragraph 10 of SFAS 5.
8. With respect to the environmental exposures you have retained from Olin and from your acquisition of Hickson, please revise your disclosures in future filings to disclose the range of additional reasonably possible losses (exclusive of any recoveries from insurance or other parties), pursuant to paragraph 10 of SFAS 5.
9. With respect to the additional contingent environmental liabilities of \$10.5 million that you have estimated, please confirm that this amount does not take into account any insurance recoveries. If not, please tell us and disclose in future filings the reasonably possible additional losses separately from any insurance recoveries.

22. Restructuring and Other (Gains) and Losses, page 95

Consolidated Statements of Income, page 55

10. Please tell us the following regarding your sale of your 50% investment in Planar Solutions:
  - We note that you recognized a gain of \$10.2 million in other (gains) and losses, which is a component of income from continuing operations before taxes, equity in earnings of affiliated companies and cumulative effect of accounting change. Given that you accounted for your investment in Planar Solutions as an equity method investment prior to its disposal, please explain

why you did not classify the gain on sale as part of equity in earnings of affiliated companies.

- We note that you have assumed approximately \$7 million of guarantees of Planar Solutions' debt. Please tell us your consideration of FIN 45 in accounting for this guarantee.

Item 9A. Controls and Procedures, page 97

11. We note your disclosure that your chief executive officer and chief financial officer concluded that the Company's disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by the Company in reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time period specified in the rules and forms of the SEC. Please revise, in future filings, your definition to also clarify, if true, that your disclosure controls and procedures were also effective to ensure that information required to be disclosed by you in the reports that you file or submit under the Exchange Act is accumulated and communicated to your management, including your principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Otherwise, please simply conclude that your disclosure controls and procedures are effective or ineffective, whatever the case may be.

Exhibit 31

12. Please confirm that the inclusion of your Chief Executive Officer and Chief Financial Officer's title was not intended to limit the capacity in which such individuals provided the certifications. In the future, eliminate reference to the CEO and CFO's titles in the introductory paragraph of the certifications to conform to the format provided in Item 601(b)(31) of Regulation S-K.

Forms 10-Q for the quarters ended March 31, 2006 and June 30, 2006

General

13. Please address the comments above in your Forms 10-Q, as applicable.

Item 1. Financial Statements, page 2

2. Share-Based Compensation, page 5

14. You state on page 6 that your performance awards are settled in cash and that during the service period, compensation cost is recognized proportionately based

on your estimate of achieving the financial targets. Please confirm to us that you recognize compensation expense for these performance awards based on the fair value, rather than the intrinsic value, of these awards at each reporting date. See paragraph 37 of SFAS 123(R). If so, please tell us why you have not recognized any cumulative effect of a change in accounting principle, pursuant to paragraph 79b of SFAS 123(R).

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please submit all correspondence and supplemental materials on EDGAR as required by Rule 101 of Regulation S-T. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

Louis S. Massimo  
Arch Chemicals, Inc.  
October 31, 2006  
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You may contact Melissa Rocha at (202) 551-3854 or me at (202) 551-3255 if you have questions regarding comments on the financial statements and related matters.

Sincerely,

Nili N. Shah  
Branch Chief