

Exhibit VV

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

**IN RE ROYAL DUTCH/SHELL
TRANSPORT SECURITIES LITIGATION**

Civil Action No. 04-374 (JAP)

REBUTTAL EXPERT REPORT

of

GREGG A. JARRELL*

December 22, 2006

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I. INTRODUCTION AND SUMMARY OF OPINIONS

1. I have previously submitted an Expert Report dated November 3, 2006 in this matter on issues relating to market efficiency, materiality, causation and per share damages. My opinions included the market effect of the alleged misrepresentations and omissions, the materiality of certain facts misrepresented or omitted, and the per share damages under Section 10(b) of the Securities Exchange Act of 1934 suffered by investors. I have been asked by Plaintiffs' Counsel to respond to opinions expressed by Mr. Daniel R. Fischel ("Mr. Fischel") in his Expert Report dated November 3, 2006 ("Fischel Expert Report") relating to market efficiency and by Dr. Hans-Jürgen Petersen ("Dr. Petersen") in his Expert Report dated November 3, 2006 ("Petersen Expert Report").¹

2. I conclude that Mr. Fischel's opinion that the Royal Dutch and Shell Transport Equity Securities did not trade in an efficient market, based on the absence of parity in market prices for those securities similar to the parity implied by the 60:40 ownership ratio, relates to "fundamental value efficiency" that is not relevant for the purpose of determining whether the securities traded in an efficient market for securities litigation purposes. The relevant question is whether the Royal Dutch and Shell Transport Equity Securities traded in an "informationally" efficient market. Mr. Fischel does not provide any analysis to support a conclusion that the Royal Dutch and Shell Transport Equity Securities did not trade in an "informationally efficient" market. Neither does Mr. Fischel provide any analysis to contradict the analyses I provided in my Expert Report in support of my conclusion that the Royal Dutch and Shell Transport Equity

¹ My qualifications and compensation were disclosed in my Expert Report. Terms used in this Report are consistent with the definitions provided in my Expert Report.

Securities traded in an efficient market. Therefore, I continue to hold my opinion that the Royal Dutch and Shell Transport Equity Securities traded in an efficient market. Detailed explanations and the bases for these opinions are provided in the sections that follow.

3. I also conclude that Mr. Fischel's illustration that "[e]liminating shares with no out of pocket loss (not including dividends) reduces the total number of shares allegedly suffering a loss by approximately 74% for domestic shares and approximately 31 percent for foreign shares" is based on an assumption that has no economic or legal basis.

4. In addition, Mr. Fischel criticizes the application of the first-in-first-out ("FIFO") method of matching purchases and sales. Whether losses are calculated under FIFO, the last-in-first-out ("LIFO"), or any other matching methodology is a legal issue about which I understand there is no uniformity among the courts. In any event, losses can be calculated based upon the per-share artificial inflation contained in my opening Expert Report, no matter which methodology the Court determines to be appropriate.

5. Mr. Fischel also opines that aggregate damages cannot be calculated accurately. It is my understanding that the issue of aggregate damages is not relevant for the class certification motion before the Court and I have not been asked to opine on aggregate damages.

6. Dr. Petersen does not provide sufficient detail about his analysis, and the assumptions underlying his analysis, to enable me to replicate and critique his analysis. Therefore, I do not understand at this point what specific assumptions Dr. Petersen uses to reach his conclusion that such huge sample sizes would be required to estimate the relative proportion of overall trading by U.S. investors in Shell Transport stock on the London Stock Exchange and in Royal Dutch stock on the Euronext.

7. I understand that discovery in this case is ongoing and has not yet been completed. Therefore, I reserve the right to amend this report in light of the ongoing discovery process and future trial proceedings.

II. ADDITIONAL MATERIALS REVIEWED

8. Exhibit A contains a list of additional materials reviewed during the course of this Rebuttal Report.

III. BASES OF REBUTTAL OPINIONS

9. In my Expert Report, I provided several analyses that are widely accepted as economic and legal evidence of market efficiency for the purpose of class action securities litigation. Specifically, I provided: (i) calculations of average weekly trading volume as a percentage of shares outstanding available to trade for the Royal Dutch and Shell Transport Equity Securities as evidence that those securities were actively traded; (ii) a list of analyst coverage for the two companies as evidence of free flow of news and analysis; (iii) data on significant institutional holdings for Royal Dutch New York Shares and Shell Transport ADRs as evidence of the presence of sophisticated investors who could arbitrage away any mispricing; (iv) data on short interest for Royal Dutch New York Shares and Shell Transport ADRs as evidence of the existence of shorting activity, as well as the absence of very high short interest levels that could impede any arbitrage activity to benefit from any potential mispricing; (v) evidence that news about the two companies was widely disseminated and analyses that any material new company-specific news was quickly and fully reflected in the market prices; (vi) statistical analysis to support the weak-form market efficiency hypothesis that an investor cannot

predict today's stock price on the basis of yesterday's price; and (vii) statistical analyses as evidence that market prices moved in tandem across different stock exchanges.

10. Mr. Fischel concludes that the market for Royal Dutch and Shell Transport Equity Securities was not efficient during the Class Period. Mr. Fischel bases this opinion on a few academic articles that seek to investigate the reason for the absence of the same parity in the relative prices of Royal Dutch and Shell Transport Equity Securities as implied by the 60:40 ownership ratio. Mr. Fischel also presents an analysis showing that "[e]liminating shares with no out of pocket loss (not including dividends) reduces the total number of shares allegedly suffering a loss by approximately 74 percent for domestic shares and approximately 31 percent for foreign shares." I disagree with Mr. Fischel's opinions on the basis of the discussion that follows.

11. Mr. Fischel is addressing a question that is not relevant to determination of market efficiency for the purpose of securities litigation. The academic articles cited by Mr. Fischel attempt to evaluate whether the level of prices for Royal Dutch and Shell Transport Equity Securities are consistent with the 60:40 ownership ratio. However, in the context of securities litigation, the relevant question is whether the prices for Royal Dutch and Shell Transport Equity Securities are "informationally efficient," i.e., whether the prices for Royal Dutch and Shell Transport Equity Securities react to material new information in a consistent and expected manner.

12. In particular, a recent decision dated December 13, 2005 by the United States Court of Appeals for the First Circuit, *In re Polymedica Corp. Securities Litigation*, concluded that an efficient market for application of the fraud-on-the-market theory is "one in which the

market price of the stock fully reflects all publicly available information.”² The Court of Appeals references Lynn A. Stout, “The Mechanisms of Market Inefficiency: An Introduction to the New Finance,” 28 J. Corp.L. 635, 639 (2003), to define “informational efficiency” as market prices fully reflecting all publicly available information when “prices respond so quickly to new information that it is impossible for traders to make trading profits on the basis of that information,” and “is best understood ‘as a prediction or implication about the speed with which prices respond to information.’”³

13. The Court of Appeals further references Stout, supra, to define “fundamental value efficiency” as the market price fully reflecting “all publicly available information when it responds to information not only quickly but accurately, such that ‘market prices mirror the best possible estimates, in light of all available information, of the actual economic values of securities in terms of their expected risks and returns.’”⁴ The Court of Appeals Decision also references Daniel R. Fischel, “Efficient Capital Markets, the Crash, and the Fraud on the Market Theory,” 74 Cornell L. Rev. 907, 913 (1989), “stating that fundamental value efficiency ‘focuses on the extent to which security prices reflect the present value of the net cash flows generated by a firm’s assets.’”⁵

14. The Court of Appeals opined that, for a “stock price in an efficient market [to] fully reflect all publicly available information in order to establish the fraud-on-the-market presumption,” it is not necessary “that stock price must accurately reflect the fundamental value

² *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 14.

³ *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 14.

⁴ *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 15.

⁵ *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 15.

of the stock.”⁶ Put another way, “informational efficiency” relates to the change in market prices of securities in response to material new information to fully reflect such information, and “fundamental value efficiency” relates to the level of market prices to accurately reflect the value of all publicly available information.

15. Clearly, Mr. Fischel and the articles cited by Mr. Fischel in his Expert Report relate to fundamental value efficiency based on the observation that the parity between the prices of Royal Dutch and Shell Transport Equity Securities is not consistent with the 60:40 ownership ratio. Neither Mr. Fischel nor any of the articles cited by Mr. Fischel provides evidence that the prices of Royal Dutch and Shell Transport Equity Securities did not fully reflect all available public information. Also, Mr. Fischel does not discuss why fundamental value efficiency is relevant, and Mr. Fischel’s cites to the academic articles do not address the issue of informational efficiency, in my opinion.

16. The Court of Appeals did recognize that “evidence bearing on a stock’s fundamental value may be relevant to the efficiency determination as, for example, circumstantial evidence that arbitrageurs are not trading in the market, with the result that securities prices do not fully reflect all publicly available information.”⁷ Mr. Fischel does not provide any evidence that arbitrageurs were not trading or were precluded from trading in the Royal Dutch and Shell Transport Equity Securities. Quite the contrary, the following excerpts from academic articles and news stories provide evidence of an immensely active arbitrage market for twin stock in general, and Royal Dutch and Shell Transport Equity Securities in particular:

⁶ *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 16.

⁷ *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005) at 16.

By contrast, the stocks of our twins can be arbitrated easily. They trade on major world stock exchanges, and the twins' stock can both be purchased locally by many investors. For example, a U.S. (Dutch) investor can buy Royal Dutch *and* Shell in New York (Amsterdam).

K.A. Froot and E.M. Dabora, "How are stock prices affected by the location of trade?" *Journal of Financial Economics* 53 (1999) 189-216, at p. 191.

There is also considerable public information about the relative pricing of Royal Dutch and Shell, and 'switch' trades are known by traders as those which seek to take advantage of price disparities between Royal Dutch and Shell.

K.A. Froot and E.M. Dabora, "How are stock prices affected by the location of trade?" *Journal of Financial Economics* 53 (1999) 189-216, at p. 192.

These markets have the potential of being integrated for a number of reasons. First, both Amsterdam and New York are open trading platforms with virtually complete access for foreign investors. Second, no regulatory constraints prevent cross-border arbitrage in cross-listed stocks. Third, Dutch cross-listed stocks are liquid in both Amsterdam and New York trading. Fourth, since Amsterdam and New York trade the same stock for one hour each day, market makers and brokers face considerable cross-Atlantic competition for order flow. The NYSE is likely to meet tough competition from Amsterdam since broker commissions are amongst the lowest in Europe.

E.C.J. Hupperets and A.J. Menkveld, "Intraday analysis of market integration: Dutch blue chips traded in Amsterdam and New York," *Journal of Financial Markets* 5 (2002) 57-82, at pp. 58-59.

Lowenstein (2000) describes arbitrage positions of Long-Term Capital Management (LTCM) in Royal Dutch/Shell. LTCM established an arbitrage position in the twin in the summer of 1997, when Royal Dutch traded at an 8 to 10 percent premium. In total \$2.3 billion was invested, half of which long in Shell and the other half short in Royal Dutch (Lowenstein, p. 99). In the autumn of 1998 large defaults on Russian debt created significant losses for the hedge fund and LTCM had to unwind several positions. Lowenstein reports that the premium of Royal Dutch had increased to about 22 percent and LTCM had to close the position and incur a loss. According to Lowenstein (p. 234), LTCM lost \$286 million

in equity pairs trading and more than half of this loss is accounted for by the Royal Dutch/Shell trade.

A. de Jong, L. Rosenthal and M.A. van Dijk, "The Limits of Arbitrage: Evidence from Dual-Listed Companies," November 2005, at p. 20.

In the mid-1980s, the Wall Street quant Nunzio Tartaglia assembled a team of physicists, mathematicians, and computer scientists to uncover arbitrage opportunities in the equities markets. ... Among other things, Tartaglia's programs identified pairs of securities whose prices tended to move together. They traded these pairs with great success in 1987 - a year when the group reportedly made a \$50 million profit for the firm. Although the Morgan Stanley group disbanded in 1989 after a couple of bad years of performance, pairs trading has since become an increasingly popular "market-neutral" investment strategy used by individual and institutional traders as well as hedge funds.

E. Gatev, W.N. Goetzmann and K.G. Rouwenhorst, "Pairs Trading: Performance of a Relative-Value Arbitrage Rule," *The Review of Financial Studies* v19 n3 (2006) pp. 797-827, at p. 799.

The discrepancy between Royal Dutch and Shell shares is a natural opportunity for arbitrage. In the current case, a trader would short Royal Dutch -- the more expensive stock -- and buy Shell. Regardless of which direction the shares go in, if they move back to parity with one another, the trader profits.

This arbitrage has been a staple of the London Stock Exchange for years, according to David Smith, senior managing director at Cantor Fitzgerald in London. Mr. Smith said he has traded it for clients ever since he began working in the 1970s.

Through much of the 1970s, the divergence between Royal Dutch and Shell shares was driven by limits on dividends in Britain. When those limits were withdrawn in 1979, Shell began paying out a larder-full of unpaid dividends, making Shell the more attractive of the two.

As the U.S. bull market gathered momentum, Royal Dutch shares came into favor because their U.S. American depositary receipts were far more liquid and, more important, were included in the S&P 500 Index. Standard & Poor's decision to remove non-U.S. shares from the index in 2002 pulled a good deal of premium out

of Royal Dutch -- although its liquidity and its representation in many other indexes means that U.S. investors' appetite for stocks in general makes the value sway in relation to Shell. Currency shifts in the British pound and the euro also come into play.

Because Royal Dutch and Shell can trade out of whack for so long, said Mr. Smith, the trick to the arbitrage trade is not to expect too much. "People trade in and out of it on fairly small spreads," Mr. Smith said. "There's a lot of setting up and unwinding."

Investors who place too heavy a bet on the notion that Royal Dutch and Shell should reach parity with one another can be badly burnt - as the hedge fund Long-Term Capital Management is said to have found out.

At the beginning of 1998, Royal Dutch shares were trading at a more than 10% premium to Shell, as wide a spread as seen in recent memory. LTCM, believing that its experience in bond arbitrage would translate into stock arbitrage, bet heavily that the spread would come in, according to reports at the time. It didn't.

"Stock Sleuth: Royal Dutch and Shell Shares Offer Arbitrage Opportunities," *The Wall Street Journal Europe*, March 17, 2004.

17. There appear to be no barriers to entry and these markets constitute a textbook example of perfect competition.
18. In my opening Expert Report, I provided, in addition to many other widely-accepted criteria for determining market efficiency, evidence supporting the fact that the changes in the prices of Royal Dutch and Shell Transport Equity Securities were consistent with "informational efficiency." I tested how quickly material new information was impounded in the prices of Royal Dutch and Shell Transport Equity Securities by checking the statistical significance of trading days following a trading day on which the return for Royal Dutch and Shell Transport Equity Securities was statistically significant at the 99% significance level. The results of this analysis indicated that the "news released on the big-news days was generally

impounded into the stock price within a day or two for both Royal Dutch New York Shares and Shell Transport ADRs.”⁸

19. I also analyzed the one-day stock price reactions in Royal Dutch and Shell Transport Equity Securities to earnings announcements and observed a generally positive correlation between earnings surprises and stock price response. This evidence supported a conclusion that the Royal Dutch and Shell Transport Equity Securities quickly responded to material new information.

20. In my Expert Report, I also presented several correlation analyses that demonstrated that the change in the market prices for Royal Dutch and Shell Transport Equity Securities was highly correlated, supporting the conclusion that the stock prices generally moved in tandem, resulting in minimal price mismatches that could be exploited through arbitrage.

21. I also presented autocorrelation analyses that supported the conclusion that the market prices for Royal Dutch New York Shares and Shell Transport ADRs fully reflected publicly available information, and that there was “no evidence that market investors could have earned returns above trading costs using any trading strategy based on the time-series behavior of past returns for the two stocks.”⁹

22. I also presented data which showed that the amount of short interest for Royal Dutch New York Shares during the Class Period was between 0.5% and 1.3% of Average Royal Dutch New York Shares Outstanding, and for Shell Transport ADRs during the Class Period was between 0.7% and 10.2% of the Average Shell Transport ADRs Outstanding. These short

⁸ Jarrell Expert Report at ¶62.

⁹ Jarrell Expert Report at ¶71.

interest statistics provide evidence of the existence of some arbitrage activity. However, the short interest is not at such high levels so as to preclude any further arbitrage activity.

23. In addition, the following excerpts indicate that the academic literature also supports the conclusion of informational efficiency for Royal Dutch and Shell Transport Equity Securities:

The results of test for Royal Dutch / Shell are shown in panel A of table 3. In no case are the returns significantly different from one another.

L. Rosenthal and C. Young, "The seemingly anomalous price behavior of Royal Dutch / Shell and Unilever N.V. / PLC," *Journal of Financial Economics* 26 (1990), 123-141 at p. 134.

Finally, the evidence we present on intramarket trading rules implies that the securities of each parent are consistently priced across the markets in which they are traded. That is, for an individual security, the law of one price prevails.

L. Rosenthal and C. Young, "The seemingly anomalous price behavior of Royal Dutch / Shell and Unilever N.V. / PLC," *Journal of Financial Economics* 26 (1990), 123-141 at p. 141.

This argument assumes that the law of one price holds around the world for each stock. Our data support this assumption, as each individual stock trades for approximately the same price in all markets at the same time.

K.A. Froot and E.M. Dabora, "How are stock prices affected by the location of trade?" *Journal of Financial Economics* 53 (1999) 189-216, at p. 191.

Small differences in coefficients (particularly in the 1-day regressions) occur, however, due to transient deviations from the law of one price for any given stock.

K.A. Froot and E.M. Dabora, "How are stock prices affected by the location of trade?" *Journal of Financial Economics* 53 (1999) 189-216, at p. 199.

Dickey Fuller tests show that both markets are integrated for each stock, since the midquote series are cointegrated of order one at

99% confidence level. In other words, the midquote series are integrated of order one and the cointegrating relation, which is the difference between midquotes in Amsterdam and New York, is stationary.

E.C.J. Hupperets and A.J. Menkveld, "Intraday analysis of market integration: Dutch blue chips traded in Amsterdam and New York," *Journal of Financial Markets* 5 (2002) 57-82, at p. 73.

This shows that prices in both markets move in lockstep during the hour of overlap.

E.C.J. Hupperets and A.J. Menkveld, "Intraday analysis of market integration: Dutch blue chips traded in Amsterdam and New York," *Journal of Financial Markets* 5 (2002) 57-82, at pp. 73-74.

ADR prices closely follow the prices of the ordinary shares for all DLC parents. This implies that differences between the log deviations from parity based on the ADR prices and those based on the ordinary share prices are minor and correlations are nearly equal to 1. This is illustrated by Figure 3, which shows the log deviations from parity for Royal Dutch/Shell on the basis of the prices of the ADRs as well as the ordinary share prices. It is striking that the ordinary shares move in near-perfect lockstep with their ADRs (which trade in different markets, time zones, and currencies), while the relative prices of the ADRs (which both trade at the NYSE and represent claims on the same underlying cash flows) display large deviations from theoretical parity.

A. de Jong, L. Rosenthal and M.A. van Dijk, "The Limits of Arbitrage: Evidence from Dual-Listed Companies," November 2005, at p. 23.

24. Mr. Fischel does not present any analysis to test whether the Royal Dutch and Shell Transport Equity Securities traded in an "informationally efficient" market. Therefore, Mr. Fischel does not dispute or contradict my analyses or my conclusions relating to market efficiency presented in my Expert Report.

25. Therefore, based on the above discussion, I conclude that Mr. Fischel has failed to prove that the Royal Dutch and Shell Transport Equity Securities did not trade in an efficient

market, and I continue to hold my opinion that the Royal Dutch and Shell Transport Equity Securities traded in an efficient market.

26. On page 8 of the Fischel Expert Report, Mr. Fischel notes that “the prices for both Royal Dutch and Shell Transport shares have risen after the end of the Class Period to levels above the prices on most of the days during the Class Period,” and opines that “[t]herefore, many investors who purchased during the Class Period and decided to hold after the Class Period have suffered no out of pocket loss.” In footnote 10 on page 8 of the Fischel Expert Report, Mr. Fischel states that “[e]liminating shares with no out of pocket loss (not including dividends) reduces the total number of shares allegedly suffering a loss by approximately 74 percent for domestic shares and approximately 31 percent for foreign shares.” Exhibit H to Mr. Fischel’s report provides some details of the assumptions on which this calculation is based on. Note 6 on Exhibit H to Mr. Fischel’s report states that “[a]ll shares purchased during the Class Period that were held until the closing price attained a value greater than or equal to the purchase price are treated as having zero Out-of-Pocket Losses. The analysis extends through July 19, 2005.”

27. Mr. Fischel does not state the basis of this assumption. In my opinion, this assumption has no economic or legal basis. An economist would base the calculation of out-of-pocket loss on the price on the day when it is determined that the alleged misrepresentations and omissions were fully disclosed for a stock traded in an efficient market. However, Congress decided to extend that period to ninety days in the PSLRA. Section 21D(e)(1) of the PSLRA (15 U.S.C. §78u-4(e)(1)) provides that the maximum amount of recoverable damages for securities purchased during the class period and retained through the 90-day period following the day on which the alleged misstatements or omissions were corrected (“90-day lookback period”) are

limited to the difference between the purchase price paid and the mean trading price of the security for the 90-day lookback period. Section 21D(e)(2) of the PSLRA (15 U.S.C. §78u-4(e)(2)) provides that if the security is sold during the 90-day lookback period, the maximum amount of recoverable damages are limited to the difference between the purchase price paid and the mean trading price for the security during the period beginning on the day on which the alleged misstatements and omissions were corrected and ending on the date of sale.

28. The economic reality is that the PSLRA rules effectively substitute the average prices over a maximum of 90 days after the revelation date for the closing stock price on the revelation date for purposes of damages calculation. In essence, the PSLRA rules use average prices of the stock up to 90 days after the revelation date to establish the “true” post-revelation stock value, rather than rely exclusively on the closing price on the revelation day. This 90-day lookback period cannot be justified with any scientific evidence showing that such long windows are necessary to establish efficient stock prices.

29. So, it is puzzling how Mr. Fischel justifies going beyond even the 90-day period. Indeed, in contradiction to economic evidence on market efficiency and Congress’s PSLRA rules, Mr. Fischel uses in effect a 488-day “lookback” period to compute damages in this case. Mr. Fischel does not offer any reason or justification for this blatant usurpation of Congress’s authority to limit the lookback period to a maximum of 90 days.

30. Specifically, based on a Class Period ending date of March 18, 2004, the 90-day lookback period would end on June 15, 2004. However, Mr. Fischel’s analysis inappropriately tracks shares purchased during the Class Period through July 19, 2005, which is well past the 90-day lookback period, and if the price on the date of sale is higher than the purchase price for

shares sold on or before July 19, 2005, or the price on July 19, 2005 is higher than the purchase price if held through that date, then Mr. Fischel treats such shares as having no out-of-pocket losses. Mr. Fischel's assumption and the analysis based on such assumption is flawed and incorrect and has no economic or legal basis.

31. On pages 8 through 10 of the Fischel Expert Report, Mr. Fischel criticizes the application of the first-in-first-out ("FIFO") method of matching purchases and sales. Whether losses are calculated under FIFO, the last-in-first-out ("LIFO"), or any other matching methodology is a legal issue about which I understand there is no uniformity among the courts. In any event, losses can be calculated based upon the per-share artificial inflation contained in my opening Expert Report, no matter which methodology the Court determines to be appropriate.

32. On pages 4 and 10 through 11 of the Fischel Expert Report, Mr. Fischel opines that aggregate damages cannot be calculated accurately. It is my understanding that the issue of aggregate damages is not relevant for the class certification motion before the Court and I have not been asked to opine on aggregate damages.

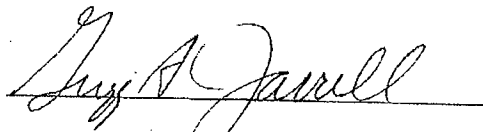
33. In the Petersen Expert Report, Dr. Petersen presents various scenarios of sample size necessary to estimate the total amount of trading by U.S. persons and entities as a percentage of total trading to within 2.5% at a conventional 95% confidence level under different assumptions on the proportion of transactions by U.S. persons and entities and their size relative to the size of all transactions.

34. Dr. Petersen does not provide sufficient detail about his analysis, and the assumptions underlying his analysis, to enable me to replicate and critique his analysis. For

example, Dr. Petersen divides the trade size by U.S. persons and entities into three bins: lower third, middle third and upper third. Dr. Petersen does not explain why he selected three bins and what trade size he used as a demarcation point between the bins. Dr. Petersen does not disclose the distribution of trade size within the bins and what sampling technique underlies his sample size, i.e., whether the sample is drawn equally from each of the bins or not. In addition, Dr. Petersen does not disclose whether he is assuming a binomial distribution for the relative proportion of trading by U.S. investors or not.

December 22, 2006

Date



Gregg A. Jarrell

Exhibit A
Additional Materials Reviewed

Report of Daniel R. Fischel dated November 3, 2006.

Report of Hans-Jürgen Petersen dated November 3, 2006.

United States Court of Appeals, First Circuit, decision dated December 13, 2005 *In re Polymedica Corp. Sec. Litig.*, 432 F. 3d 1 (1st Cir. 2005).

United States District Court, District of Massachusetts, Memorandum and Order dated September 28, 2006 *In re Polymedica Corp. Sec. Litig.*, C.A. No. 00-12426-WGY.

K.A. Froot and E.M. Dabora, "How are stock prices affected by the location of trade?" *Journal of Financial Economics* 53 (1999) 189-216.

E.C.J. Hupperets and A.J. Menkveld, "Intraday analysis of market integration: Dutch blue chips traded in Amsterdam and New York," *Journal of Financial Markets* 5 (2002) 57-82.

A. de Jong, L. Rosenthal and M.A. van Dijk, "The Limits of Arbitrage: Evidence from Dual-Listed Companies," November 2005.

E. Gatev, W.N. Goetzmann and K.G. Rouwenhorst, "Pairs Trading: Performance of a Relative-Value Arbitrage Rule," *The Review of Financial Studies* v19 n3 (2006) pp. 797-827.

L. Rosenthal and C. Young, "The seemingly anomalous price behavior of Royal Dutch / Shell and Unilever N.V. / PLC," *Journal of Financial Economics* 26 (1990), 123-141.