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1Q.In reference to the evidence of Dr. Roger Morin, Exhibit RAM-9, provide any2studies made by Dr. Morin to determine the accuracy of the analyst forecasts used3by Dr. Morin in the schedule.4

- A. Extensive academic researches in the past two decades have documented and confirmed
 repeatedly the overwhelming superiority of analysts' earnings forecasts over the
 univariate time-series forecasts. This latter category includes many *ad hoc* forecasts from
 statistical models, ranging from the naive methods of simple averages, moving averages,
 etc. to the sophisticated time-series techniques such as the Box-Jenkins modeling
 techniques.
- 12 In other words, this literature suggests that analysts' earnings forecasts incorporate all the 13 public information available to the analysts and the public at the time the forecasts are 14 released. Furthermore, these forecasts are statistically more accurate than forecasts solely 15 based on historical earnings, dividends, book value equity, and the like.
- This finding is based on researches on data from 1950s to 1980s. Important papers
 include Brown and Rozeff (1978), Cragg and Malkiel (1982), Harris (1986), Vander
 Weide and Carleton (1988), and Lys and Sohn (1990).
- More recent studies provide evidence that analysts make biased forecasts and misinterpret the impact of new information. For example, several studies in the early 1990s suggest that analysts either systematically under-react or over-react to new information. Easterwood and Nutt (1999) discriminate between these different reactions and reported that analysts under-react to negative information, but over-react to positive information.
- 28 However, it should be pointed out that these new studies do not necessarily contradict the 29 earlier literature upon which finding 1 is based. As a matter of fact, the earlier researches 30 focused on whether analysts' earnings forecasts are better at forecasting future earnings 31 than historical averages are, whereas the recent literature investigates whether the 32 analysts' earnings forecasts are unbiased estimates of future earnings. It is possible that 33 even if the analysts' forecasts are biased, they are still closer to the future earnings than 34 the historical averages are, although this hypothesis has not been tested in the recent 35 studies.

Summary of Papers Reviewed

- 39 Lawrence D. Brown and Michael S. Rozeff, 1978, The Superiority of Analyst
 40 Forecasts as Measures of Expectations: Evidence from Earnings, Journal of Finance,
 41 Vol. XXXIII, No. 1, pp. 1 to 16
- 43 Using data (1951 to 1975) from 50 non-utility firms, the authors compared forecasting
 44 errors between forecasts reported in Value Line Investment Survey and forecasts from a
 45 sophisticated time-series methodology (Box-Jenkins). They concluded that "Value Line

1	Investment Survey consistently makes significantly better earnings forecasts than the BJ
2	[Box-Jenkins] and naive time series models." (p.13)
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4	J. Cragg and B. G. Malkiel, Expectations and the Structure of Share Prices, National
5	Bureau of Economic Research, University of Chicago Press, 1982
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7	See quotation below from Harris (1986).
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9	Robert S. Harris, 1986, Using Analysts' Growth Forecasts to Estimate Shareholder
10	Required Rates of Return, Financial Management, Spring 1986, pp. 58 - 67
11	
12	The main focus of this paper was to derive required return on equity using expected
13	rather than historical earnings growth rates. Harris used IBES consensus earnings
14	forecasts as a proxy for investor expectation. In his review of the literature on financial
15	analysts' forecasts (FAF), Harris wrote:
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17	Moreover, a growing body of knowledge shows that analysts' earnings
18	forecasts are indeed reflected in stock prices. Such studies typically
19	employ a consensus measure of FAF calculated as a simple average of
20	forecasts by individual analysts. Elton, Gruber, and Gultekin show that
21	stock prices react more to changes in analysts' forecasts of earnings than
22	they do to changes in earnings themselves, suggesting the usefulness of
23	FAF as a surrogate for market expectations. In an extensive NBER study
24	using analysts' earnings forecasts, Cragg and Malkiel conclude, "the
25	expectations formed by Wall Street professionals get quickly and
26	thoroughly impounded into the prices of securities. Implicitly, we have
27	found that the evaluations of companies that analysts make are the sorts of
28	ones on which market valuation is based." (p.59, footnote omitted)
29	
30	James H. Vander Weide and Willard T. Carleton, 1988, Investor Growth Expectations:
31	Analysts vs. History, The Journal of Portfolio Management, Spring 1988, pp. 78 - 82
32	
33	This paper updated the study by Cragg and Malkiel (1982), which suggests that the stock
34	valuation process embodies analysts' forecasts rather than historically based growth
35	figures such as the ten-year historical growth in dividends per share or the five-year
36	growth in book value per share. (The Cragg and Malkiel study is based on data for the
37	1960s).
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39	In this paper, the authors used data from 1971-1983 for approximately sixty-five utility
40	firms. They "found overwhelming evidence that the consensus analysts' forecasts of
41	future growth is superior to historically oriented growth measures in predicting the
42	firm's stock price." Their results "also are consistent with the hypothesis that investors
43	use analysts' forecasts, rather than historically oriented growth calculations, in making
44	stock buy-and-sell decisions." (p. 81)
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1	Thomas Lys and Sungkyu Sohn, 1990, The Association between Revisions of Financial
2	Analysts' Earnings Forecasts and Security-Price Changes, Journal of Accounting and
3	<i>Economics</i> , vol. 13, pp. 341 - 363
4	
5	Using virtually all publicly available analyst earnings forecasts for a sample of 58
6	companies in the 1980 - 86 period (over 23,000 individual forecasts by 100 analyst
7	firms), the authors showed that stock returns responded to individual analyst earnings
8	forecasts, even when they were closely preceded by earnings forecasts made by other
9	analysts or by corporate accounting disclosures.
10	
11	John C. Easterwood and Stacey R. Nutt, 1999, Inefficiency in Analysts' Earnings
12	Forecasts: Systematic Misreaction or Systematic Optimism? Journal of Finance,
13	<u>Vol. LIV, No. 5, pp. 1777 - 1797</u>
14	
15	Using actual and IBES data from 1982 - 1995, the authors regressed the analysts' forecast
16	errors against either historical earnings changes or analysts' forecasting errors in the prior
17	years. Their results show that analysts tend to under-react to negative earnings
18	information, but over-react to positive earnings information.