- 1. In all previous proceedings in which Kentucky-American applied for a general rate adjustment using a fully forecasted test period, the Commission found that "slippage" adjustments were appropriate to account for the effect of capital construction budget variances for the 10 years prior to the forecasted period.
- a. State whether the AG agrees with the use of slippage adjustments in general adjustment rate proceedings in which a fully forecasted test period is used.
- b. Refer to Kentucky-American's Response to Commission Staff's Second Information Request, item 36. State whether the AG agrees with the slippage adjustments set forth in that response.
- c. Explain why the AG witnesses have not proposed slippage adjustments or otherwise included such adjustments in their recommendations.

RESPONSE:

Notice by Counsel: The Attorney General notes that Kentucky-American Water Company has utilized a forward-looking test period in the following cases. Case No. 92-452; Case No. 94-197; Case No. 95-554; Case No. 97-034; Case No. 2000-00120; Case No. 2004-00103; Case No. 2007-00143; and Case No. 2008-00427. Three of these cases, 94-197, 2007-00143, and 2008-00427, were "settled" through the Commission's review of unanimous recommendations and stipulations by the parties. With regard to these three cases, the Attorney General submits that the Orders did not contain specific findings regarding slippage factors or adjustments. For the remaining, "fully-litigated," cases, the Attorney General agrees that slippage factors and adjustment were utilized.

- a. The OAG agrees that in general "slippage" adjustments can be appropriate in rate proceedings that utilize a forecasted test period where there is an established multi-year pattern of utility over-projection of construction expenditures and/or plant additions. The OAG does not agree that "slippage" adjustments should be used to add additional plant to rate base beyond that forecast by a utility. The OAG did not propose a slippage adjustment in KAWC's last rate case, Docket 2008-00427, or in the case before that one, Docket 2007-00143.
- b. No. The OAG does not agree that a "slippage" adjustment should be applied to increase rate base, depreciation expense and the total revenue requirement beyond the utility's

forecast, which is what the "slippage" adjustment listed in KAWC's response to Staff set 2, item 36 would effectively do in the context of the current KAWC rate case. The purpose of "slippage" adjustments are to protect ratepayers from utility overestimations of rate base that can result from utility overestimations of cost, from slippage of inservice dates of plant, from construction delays, capital expenditure deferrals, etc. Where demonstrations of a pattern of utility over-projections have occurred, a "slippage" adjustment, to reduce specific rate base components, is applied for ratemaking purposes as a ratepayer safeguard. Because the utility is sufficiently incented by its shareholders to not underestimate its additions to utility plant, there is no need for a ratepayers safeguard through a "reverse" slippage factor. In fact, in such a situation, it would not be a "slippage" adjustment because it is not relating to the protecting ratepayers from the risks of utility overestimation.

RESPONSE OF THE WITNESS:

c. No "slippage" adjustment appeared to be warranted in the context of the current KAWC rate case. Also see the response to part b.

- 2. AG witness Ralph C. Smith proposes to eliminate Construction Work In Progress ("CWIP") from Kentucky-American's forecasted rate base and to remove the Allowance for Funds Used During Construction ("AFUDC") from forecasted operating revenues.¹
- a. State whether Mr. Smith is aware that the Commission has previously allowed Kentucky-American to include CWIP in rate base but offset the return by including AFUDC in operating revenues.
 - b. State whether Mr. Smith agrees with the statement below:

Generally, regulated utilities recognize the carrying costs of construction in rates through one of two methods: inclusion of CWIP in rate base or accrual of Allowance for Funds Used During Construction ("AFUDC"). This Commission has, in previous Kentucky-American rate proceedings, applied a hybrid approach that combines these two methods. This approach allows Kentucky-American to include all CWIP in rate base while accruing AFUDC on projects taking longer than 30 days to complete. Under this approach, AFUDC revenue is reported "above the line." This approach eliminates the effects of including AFUDC bearing CWIP in rate base. It further allows Kentucky-American to accrue AFUDC as part of an asset's cost where appropriate and to earn a return on CWIP where AFUDC is not accrued.

We are not persuaded by the AG's argument that customers paying the rates approved in this case may never receive service from CWIP included in rate base. Effectively, the only CWIP upon which Kentucky-American will earn a return is that which will be completed and placed into service within 30 days of its construction start date.²

Direct Testimony of Ralph C. Smith at 10-16 and 32 (filed June 11, 2010).

² Case No. 2004-00103, Adjustment of Rates of Kentucky-American Water Company (Ky. PSC Feb. 28, 2005) at 11.

- c. If Mr. Smith does not agree with the statement set forth in item2(b), explain why.
- d. List the events or changing conditions that have occurred since the issuance of the Commission's Order of February 28, 2005 in Case No. 2004-00103 that would require the Commission to reconsider and modify its position on CWIP and AFUDC as expressed in that Order.

- a. Yes.
- b. Mr. Smith agrees that the first paragraph describes how the Commission has addressed CWIP and AFUDC in prior KAWC rate cases, specifically in Case No. 2004-00103. The single largest component of CWIP in the last KAWC rate case, Docket No. 2008-00427, KRS II, has been completed and is providing service. The OAG is not arguing in the current KAWC rate case that customers paying the rates approved in this case "may never receive service from CWIP included in rate base," so that part of the statement does not appear to be applicable to the current case. With respect to the last sentence, the hybrid method allows KAWC to earn a return on <u>all</u> CWIP; KAWC earns a cash return on non-AFUDC CWIP and an AFUDC return on the remaining CWIP.
- c. See response to b, above.
- d. Events and changing conditions since February 28, 2005, that the Commission may want to consider in re-evaluating its ratemaking treatment of CWIP and AFUDC in the current KAWC rate case include the frequent and relatively large rate increases that KAWC's customers have borne between February 2005 and today, the worldwide financial crisis, the worst U.S. recession since the Great Depression, the continuing high level of unemployment, the still fragile economy, the size of KAWC's current rate increase request, KAWC's financial health, KAWC's prospective need to access financial markets during the anticipated rate effective period in the current case, and the fact that many of KAWC's customers are likely to still be struggling to make ends meet as a result of such conditions and could therefore need currently, perhaps more than was the case in 2005, a modest break in the size of their water

rate increase that would result from the exclusion of CWIP and AFUDC in the current KAWC rate case.

3. State the net revenue requirement effect of Mr. Smith's proposal to exclude CWIP from rate base and to remove AFUDC from operating revenues.

RESPONSE:

The approximate net revenue requirement effect of OAG Adjustments B-1 of \$(1,172,277) and C-3 of \$652,067, both are shown on Exhibit RCS-1, Schedule A, page 2 of 2, on lines 8 and 18, respectively, is \$(520,210). That is, the net reduction to the revenue requirement from these two adjustments is approximately \$520,000. This approximate impact does not attempt to include fine-tuning for cash working capital and interest synchronization impacts.

- 4. In his direct testimony, Mr. Smith discusses a "Major Tax Accounting Change" for the method of accounting for repairs and maintenance.³
 - a. Provide a detailed description of the referenced change.
 - b. Explain how this change affects the calculation of deferred income

taxes.

- a. The referenced change involved a major change in the income tax accounting applied by American Water Works Company (AWWC) and its subsidiaries/Transmission and Distribution business segments, including KAWC, for repairs and maintenance expenditures, effective as of January 1, 2008. See the materials included in Attachment RCS-3 filed with Mr. Smith's direct testimony for additional details.
- b. As a result of the change in tax accounting method, AWWC effectively restated past amounts reported on its income tax returns filed by the IRS with certain amounts that were previously being capitalized and depreciated for income tax purposes being expensed for income tax purposes. This resulted in a substantial refund of past income tax payments or a substantial reduction in the income taxes paid in the year the change was implemented and results in a higher annual deduction on the income tax returns going forward as costs that were previously capitalized and depreciated for income tax purposes are now being expensed. As the income taxes are normalized in Kentucky for ratemaking purposes, this resulted in a tax-timing difference in that the Company deducts the costs on its income tax return as a current period expense while the costs are capitalized and depreciated for ratemaking purposes. Given the tax-timing difference and immediate reductions to income taxes paid to the IRS, the Company has use of the funds prior to them being recognized for regulatory accounting purposes. Thus, Accumulated Deferred Income Taxes have increased and this should be recognized and should result in a reduction in rate base. The Company has the use of a cost-free source of funds in the form of Accumulated Deferred Income Taxes which should be reflected as a deduction to rate base. Impacts by component were provided by KAWC to the OAG in the KAWC supplemental information shown on the attachment to this response, PSC-OAG-1-4b.PDF. Mr. Smith's Attachment RCS-2, Schedule B-7 will be updated to reflect the necessary adjustment, which is expected to reduce KAWC's proposed rate base by \$2,392,803 to reflect the full amount of the cost-free source of funds as ADIT that KAWC has the use of, but has not reflected as a deduction to rate base in the derivation of KAWC's rate base.

³ Direct Testimony of Ralph C. Smith at 21 - 27.

- 5. At page 25 of his direct testimony, Mr. Smith states that he is "aware of this issue, involving a major change to a utility's tax accounting method, being raised in some recent electric utility rate cases." For each of the cases to which Mr. Smith is referring:
- a. State the state utility regulatory commission before which the case was brought, the case style and case number, and the name of electric utility involved; and
- b. Provide a copy of all orders from the utility regulatory commission proceeding in which the accounting change was discussed.

- a. Mr. Smith is currently aware of the following recent electric utility rate cases in which similar major change to a utility's tax accounting method for repairs were addressed:
- 1) District of Columbia Public Service Commission, Formal Case No. 1076, Potomac Electric Power Company.
- 2) Utah Public Service Commission, Rocky Mountain Power Company. In the Matter of the Application of Rocky Mountain Power for Authority to Increase its Retail Electric Utility Service Rates in Utah and for Approval of its Proposed Electric Service Schedules and Electric Service Regulations, Docket No. 09-035-23, and In the Matter of the Division of Public Utilities' Review and Audit of Rocky Mountain Power's Deferred Tax Normalization Method, Docket No. 09-035-03, Order Approving Stipulation Regarding Change In Income Tax Treatment Of Repair Deductions And Basis Normalization, issued December 8, 2009.
- 3) Washington Utilities And Transportation Commission, Docket No. UE 090704/UG 090705, Puget Sound Energy, Inc.
- b. See attached for copies of orders in the above-referenced dockets.

- 6. At page 15 of his direct testimony, Mr. Smith states that "[i]t is not appropriate to include CWIP in rate base, particularly as the projects may result in additional revenues or cost savings which have not been reflected in the future test year ended September 30, 2011."
- a. Identify all construction projects that are included in CWIP that will definitely result in additional revenues and provide the calculation of the expected additional revenues that will occur as a result of the identified project(s).
- b. Identify all construction projects that are included in CWIP that will definitely result in cost savings and provide the calculation of the expected cost savings that will occur as a result of the identified project(s).

- a. The referenced statement was general in nature; at this time, we have not identified the specific information requested.
- b. The referenced statement was general in nature; at this time, we have not identified the specific information requested.

7. Explain why, as the Commission has permitted a cash return on CWIP for the jurisdictional electric and gas utilities, it should not afford the same ratemaking treatment to Kentucky-American.

RESPONSE:

The issue of whether a utility requires a cash return on CWIP should be examined in the context of each individual utility rate case. Among the factors that the Commission may want to consider are those cited in Mr. Smith's testimony in the current KAWC rate case.

Additionally, the Commission may want to consider that the calculation of the AFUDC rate proposed by KAWC is its overall rate of return. For electric utilities, the AFUDC rate can be significantly lower than the overall rate of return because, for electric utilities that follow the Uniform System of Accounts (USOA) prescribed by the Federal Energy Regulatory Commission (FERC), low cost short-term debt is applied first to construction in deriving the FERC-prescribed AFUDC rate. Per 18 CFR Chapter 1, Electric Plant Instructions, Components of Construction Cost, Allowance for Funds Used During Construction (AFUDC), provides for the FERC formula for computing AFUDC that effectively computes the AFUDC rate based on first applying short-term debt to construction, such that, to the extent that short-term debt is equal to or exceeds the construction balance, the AFUDC rate would be the short-term debt interest rate. In other words, there may be a difference in the AFUDC procedure that KAWC has applied versus what an electric utility following the Electric Plant Instructions in the FERC USOA would apply. The Commission may want to consider such differences in how AFUDC is calculated by different types of utilities in deciding whether to apply a different treatment for CWIP and AFUDC in the current KAWC rate case.

Additionally, the use of a forward-looking test period rather than an historical test period could be a significant factor for consideration. Specifically, KU and LG&E, in their pending rate applications [Note: Case Numbers 2009-00548 and 2009-549, respectively], are using historical test periods in support of their requests for rate increases. In Kentucky, the majority of rate adjustment applications are supported by historical test periods, and the practices and rationales associated with that type of application do not necessarily transfer over to forward-looking test periods. For years, KAWC was the only Kentucky utility that utilized a forward-looking test period. Because the use of a forward-looking test year, by its very nature, includes in rate base plant that had been under construction but which is projected to be completed during the future test year, that represents a different situation than a determination of rate base for a utility filing using an historic test year.

8. State whether Mr. Smith believes that the use of the 1/8 formula approach to calculate Kentucky-American's cash working capital is a reasonable alternative to the use of a cash working capital study. Explain.

RESPONSE:

No. The 1/8 formula does not consider the actual cash flow of the utility and would produce a cash working capital requirement even in situations where one does not exist.

9. State whether Mr. Smith agrees with the following statement: "To demonstrate that the inclusion of forecasted business development costs are reasonable and appropriately included in Kentucky-American's regulated operations, Kentucky-American must document and separate forecasted management fees from those that are directly assignable and those that are allocated. Explain.

RESPONSE:

In general, yes. KRS 278.190(3) assigns the burden of proof to show that the increased rate or charge is just and reasonable upon the utility. As was pointed out by the Kentucky Public Service Commission in Case No. 9482: Kentucky-American must prove that ratepayers benefit from an expenditure in order to recover the expense through rates. (In the Matter of: Notice of Adjustment of the Rates of Kentucky-American Water Company Effective on and After February 7, 1986, Case No. 9482, Order, 8 July 1986, at page 22.) Additionally, it is necessary for the expense to be essential to the provision of reasonable service. (In the Matter of: Adjustment of Rates of Columbia Gas of Kentucky, Inc., Case No. 10498, Order, 6 October 1989, at page 30.) Incidental or speculative benefit is not sufficient. If Kentucky-American fails to meet its burden of proof, then the expenditure is borne by Kentucky-American's investors.

⁴ See Case No. 2004-00103, Order of Feb. 28, 2005 at 53.

- 10. a. List all state utility regulatory commissions that have adopted consolidated income tax adjustments for ratemaking purposes.
- b. Provide a copy of all orders from the state utility regulatory commissions listed in the response to item 10(a) in which the commission has addressed the use of consolidated income tax adjustments for rate-making purposes.

RESPONSE:

a. We do not have the requested information of "all state utility regulatory commissions that have adopted consolidated income tax adjustments for ratemaking purposes." We are aware in general that the following regulatory jurisdictions have utilized some form of rate recognition for consolidated income tax savings for ratemaking purposes: Pennsylvania, New Jersey, Texas, Connecticut, Oregon, West Virginia and Kentucky.

Mr. Smith also has general knowledge about an "actual taxes paid" doctrine that he understands has been applied in utility ratemaking proceedings, which limits income tax expense to amounts paid. One well-known articulation of the actual taxes paid doctrine is contained in the U. S. Supreme Court decision *In Federal Power Commission v. United Gas Pipe Line Company et al.*, 386 U.S. 237, 87 S.Ct. 1003, 18 L.Ed.2d 18 (1967), where the United States Supreme Court ruled:

In our view what the Commission did here did not exceed the powers granted to it by Congress. One of its statutory duties is to determine just and reasonable rates which will be sufficient to permit the company to recover its costs of service and a reasonable return on its investment. Cost of service is therefore a major focus of inquiry. Normally included as a cost of service is a proper allowance for taxes, including federal income taxes. The determination of this allowance, as a general proposition, is obviously within the jurisdiction of the Commission. Ratemaking is, of course subject to the rule that the income and expense of unregulated and regulated activities should be segregated. But there is no suggestion in these cases that in arriving at the net taxable income of United the Commission violated this rule. Nor did it in our view in determining the tax allowance. United had not filed its own separate tax return. Instead it had joined with others in the filing of a consolidated return which resulted in the affiliated group's paying a lower total tax than would have been due had the affiliates filed on a separate-return basis. The question for the Commission was what portion of the single consolidated tax liability belonged to United. Other members of the group should not be required to pay any part of United's tax, but neither should United pay the tax of others. A proper allocation had to be made by the Commission. Respondents insist that in making the allocation the Commission would violate the statute unless in every conceivable circumstance, including this one, United is allowed an amount for

taxes equal to what it would have paid had it filed a separate return. In their view United should never share in the tax savings inherent in a consolidated return, even if on a consolidated basis system losses exceed system gains and neither the affiliated group nor any member in it has any tax liability. This is an untenable position and we reject it. Rates fixed on this basis would give the pipeline company and its stockholders not only the fair return to which they are entitled but also the full amount of an expense never in fact incurred. In such circumstances, the Commission could properly disallow the hypothetical tax expense and hold that rates based on such an unreal cost of service would not be just and reasonable.

It is true that the avoidance of tax and the reduction of the tax allowance are accomplished only by applying losses of unregulated companies to the income of the regulated entity. But the Commission is not responsible for the use of consolidated returns. It is the tax law which permits an election by an appropriate group to file on a consolidated basis. The members of a group, as in these cases, themselves chose not to file separate returns and hence, for tax purposes, to mingle profits and losses of both regulated and unregulated concerns, apparently deeming it more desirable to attempt to turn the losses of some companies into immediate cash through tax savings rather than to count on the loss companies themselves having future profits against which prior losses could be applied. Such a private decision made by the affiliates, including the regulated member, has the practical and intended consequence of reducing the group's federal income taxes, perhaps to zero, as was true of one of the years involved in the Cities Service case. But when the out-of-pocket tax cost of the regulated affiliate is reduced, there is an immediate confrontation with the ratemaking principle that limits cost of service to expenses actually incurred. Nothing in Colorado Interstate or Panhandle forbids the Commission to recognize the actual tax saving impact of a private election to file consolidated returns. On the contrary, both cases support the power and the duty of the Commission to limit cost of service to real expenses.

386 U.S. at 243-44. Thus, the highest court in the nation has upheld a regulator's decision to "limit cost of service to real expenses" by recognizing the fact that the utility was participating in a consolidated income tax return which resulted in the group paying lower federal income taxes.

b. We do not have all orders where a state utility regulatory commission has addressed the use of consolidated income tax adjustments for rate-making purposes. The OAG reserves the right to cite cases in legal filings in this case, including briefs.

- 11. a. List all state utility regulatory commissions that have rejected or denied consolidated income tax adjustments for rate-making purposes.
- b. Provide a copy of all orders from the state utility regulatory commissions listed in the response to item 11(a) in which the commission has addressed the use of consolidated income tax adjustments for rate-making purposes.

- a. We do not have the requested information. See the OAG response to Staff Request 10 for what we have.
- b. See response to part a.

12. In Case No. 2004-00103, the Commission accepted the AG's proposal to adjust Kentucky-American's forecasted current and deferred income tax expenses to reflect the use of a consolidated tax return because it had previously held that the savings resulting from the filing of a consolidated tax filing was a merger benefit, subject to allocation.⁵ Explain why, as Kentucky-American is no longer an affiliate of either Thames Water Aqua Holdings, Thames Water Aqua US Holdings, Inc., or RWE Aktiengesellschaft, a consolidated income tax adjustment is reasonable and appropriate.

RESPONSE:

The existence of consolidated federal income tax savings in the filing of a consolidated U.S. federal income tax return by American Water Works Company (AWWC) is not dependent upon whether or not AWWC is owned by a foreign entity. See the direct testimony of OAG witness Michael Majoros in prior KAWC rate case, Case No. 2007-00143, the direct testimony of OAG witness Robert Henkes in the last KAWC rate case, Docket No. 2008-00427, and the direct testimony of OAG witness Ralph Smith in the current KAWC rate case.

⁵ <u>Id</u>. at 65-66.

13. Refer to Direct Testimony of Ralph C. Smith at 29-32. State whether Mr. Smith's proposed consolidated income tax adjustment conforms to the federal income tax normalization requirements. Explain.

RESPONSE:

The adjustment uses the effective tax rate method that has been used in other utility rate cases, including previous KAWC rate cases, and approved by the Commission in Case No. 2004-00103. On September 11, 1991, the Subcommittee on Select Revenue Measures of the Committee on Ways and Means of the United States House of Representatives held a hearing on the subject. At the hearing, a statement of the issue and the IRS's present position was given by Michael J. Graetz, Deputy Assistant Secretary of Tax Policy, U.S. Department of Treasury. In the absence of regulations specifically prohibiting consolidated tax adjustments, the IRS's position is that these adjustments can be made without violating the normalization requirements of the Internal Revenue Code.

14. Refer to Direct Testimony of Dr. J. Randall Woolridge at 17. Provide a copy of the case study to which Dr. Woolridge refers in footnote 2.

RESPONSE: Please see the attached document.



Note on Value Drivers¹

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Value-based management assumes that value creation should be a primary consideration in managerial decision making. It requires a thorough understanding of what creates value and why as well as the ability to measure value accurately. The goal of this note is to highlight the determinants of equity value and, in doing so, provide a framework for making financial, strategic, and investment decisions. In particular, the note describes three value drivers: profitability, advantage horizon, and reinvestment. Using both a theoretical model and a numerical example, it shows how each value driver affects equity value and explains why. It also presents empirical evidence to support the relation between the value drivers and value creation.

Theoretical Equity Valuation Model

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Discounted cash flow (DCF) analysis translates future cash flows into current market values. For example, given a stream of equity cash flows (ECF) and a discount rate equal to the cost of equity $(K_{\rm E})$, the market value of equity $(E_{\rm MV})$ is the present value of future equity cash flows:

$$E_{MV} = ECF_1/(1+K_E) + ECF_2/(1+K_E)^2 + \dots$$
 (1)

When the equity cash flows and discount rate are constant over time, this series is a stable perpetuity which can be written as:

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$$E_{MV} = ECF/K_{E}$$
 (2)

Assuming that the equity cash flows are equal to the accounting return on equity (ROE) times the book value of equity (E_{BV}) at the beginning of the period, then equation 2 can be rewritten as:

$$E_{MV} = [(ROE)^{+}(E_{BV})]/K_{E}$$
(3)

where ROE = Net Income/E_W

While the assumption that equity cash flows are equal to accounting earnings is convenient for expositional reasons, this assumption is clearly not valid except in very special circumstances. For example, non-cash items such as depreciation or deferred taxes, and cash-items that do not flow through the income statement such as changes in working capital and fixed assets both cause cash

Professor Benjamin C. Esty prepared this note as the basis for class discussion.

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¹ Much of the material in this note appears in Fruhan (1979), chapter 1.

flows to deviate from reported net income. Nevertheless, this assumption is not a bad approximation and, as will be shown in the next section, seems to generate reasonable empirical predictions.

After dividing each side of equation 3 by the book value of equity, the left side of the equality becomes the market-to-book ratio (the market value of equity divided by the book value of equity):

$$Market/Book = E_{MV}/E_{gV} = ROE/K_{E}$$
(4)

Equation 4 says that a firm's market-to-book ratio equals the ratio of its return on equity to its cost of equity. This simple valuation model, or variations of it, can be used to analyze the relation between profitability, growth, and value.

Profitability

The first value driver, profitability, is immediately clear from equation 4. For a given industry, more profitable firms—those able to generate higher returns per dollar of equity—should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity should sell for less than book value.

<u>Profitability</u>	Value
If ROE > K _E	then Market/Book > 1
If $ROE = K_E$	then Market/Book = 1
If $ROE < K_E$	then Market/Book < 1

One implication of this model is that firms can increase equity value by increasing their return on equity. The Du Pont formula decomposes ROE into three components and provides some guidance on how to increase it:

For example, increasing the profit margin through higher prices or lower costs will increase the ROE. Similarly, increasing the asset turnover by increasing inventory turnover or reducing days receivables will increase the ROE. However, increasing financial leverage has dual, and possibly contradictory, effects. It increases not only the ROE through the Du Pont formula, but also the cost of equity.

A firm's cost of equity, or equivalently investors' expected return on equity, can be estimated using the Capital Asset Pricing Model (CAPM). According to the model, the expected return on equity is a function of a firm's equity beta (β_E) which, in turn, is a function of both leverage and asset risk (β_A) :

$$K_{E} = R_{F} + \beta_{E} (R_{M} - R_{F}) \tag{5}$$
 where:
$$R_{M} = \text{return on the market portfolio}$$

$$R_{F} = \text{risk-free rate of return}$$

$$\beta_{E} = [\beta_{A} - \beta_{D} (D/V)] (V/E) \tag{6}$$
 because:
$$\beta_{A} = \beta_{D} (D/V) + \beta_{E} (E/V) \tag{7}$$
 and
$$Firm \ Value (V) = Debt \ Value (D) + Equity \ Value (E) \tag{8}$$

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Assuming riskless debt, meaning the beta of debt is zero, then equation 6 can be written as:

$$\beta_{E} = \beta_{A} (V/E) \tag{9}$$

As financial leverage (D/V) increases, the ratio of firm value to equity value (V/E) increases, the equity beta increases, and, according to equation 5, the expected return on equity increases. The expected return increases because equity cash flows are riskier: leverage increases debtholders fractional claim on the firm's cash flows. As a result, an increase in leverage can either increase or decrease the ratio in equation 4 depending on whether the return on equity (the numerator) or the cost of equity (the denominator) increases faster.

Advantage Horizon

Equation 4 presents a firm's market-to-book ratio as a stable perpetuity under the assumption that its profitability remains constant forever. An alternative, and more realistic assumption, is that firms generate positive abnormal returns—returns in excess of their cost of capital—for only a limited number of years. The period during which firms generate positive abnormal returns is known as the advantage horizon.

Using a variation of the simple valuation model in equation 4, Appendix 1 derives the market-to-book ratio as an annuity rather than a stable perpetuity. It assumes that a firm's equity returns can be divided into two parts: normal returns equal to the firm's cost of equity (K_E) and abnormal returns equal to the actual ROE less the cost of equity (ROE - K_E). Viewed in this fashion, one can think of abnormal returns and the advantage horizon in the same way Stewart (1991) defines economic value added (EVA) and the competitive advantage period (CAP). Equation A1.8 from the Appendix 1 is:²

Market/Book = 1 + (ROE-
$$K_E$$
) * [(1/ K_E) - (1/(K_E (1+ K_E)ⁿ)] (10)

where the advantage horizon is defined as n years. According to this formula, the greater the spread between a firm's return on equity and its cost of equity (ROE - K_E), the longer the advantage horizon (increasing n), and the sooner abnormal returns occur (positive abnormal returns in early years), the higher the market-to-book ratio. Firms that earn normal returns ($K_E = ROE$) in all periods should have market-to-book ratios equal to one; firms that generate negative abnormal returns during the advantage (disadvantage) period should have market-to-book ratios less than one.

Equation 10 is more realistic than equation 4 because most firms earn positive abnormal returns for only a limited number of years. The presence of positive abnormal returns encourages entry by new firms and increased competition by existing firms. Over time, competition reduces excess returns to the point where firms just earn the expected, or normal, rate of return. Although there is typically an inverse relation between the magnitude of positive abnormal profits and the length of the advantage horizon, this model implies that firms should seek to extend the advantage horizon as long as possible for a given level of profitability.

Ghemawat (1991) refers to this ability to preserve competitive advantage as sustainability and asserts it is a key determinant of value creation. Sustainability, he maintains, depends on a firm's ability to create scarcity value and for the firm's owners to capture or appropriate this value. Threats to scarcity value include imitation and substitution. A firm can defend against imitation by erecting barriers to entry or forestalling entry through aggressive positioning; a firm can defend against substitution by continually improving or augmenting its product. Threats to appropriability include

² This formula is a variation of the accounting-based valuation methods described in Bernard (1994); Palepu, Bernard, and Healy (1996), and Ohlson (1995).

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slack and hold-up both of which result from misaligned incentives. Slack occurs when firms fail to create as much value as they are capable of creating; hold-up occurs when non-owners, instead of owners, capture value. Non-owners are often able to capture value when they provide complementary, and necessary, inputs.

Reinvestment

The third value driver, reinvestment, builds on the other two factors and incorporates the concept of growth. Firms that have attractive investment opportunities, meaning that investments are expected to generate positive abnormal earnings, can create equity value by reinvesting earnings or by investing additional equity. Appendix 2 derives a valuation model which allows for reinvestment of earnings at rate γ where γ equals the retention rate or the fraction of net income reinvested in the firm. The quantity γ ROE is a firm's sustainable growth rate, the rate at which it can grow its assets (or sales if they are proportional to assets) without changing its capital structure or raising external equity. With reinvestment, the valuation model becomes (equation A2.4):

$$Market/Book = [ROE(1 - \gamma)]/(K_E - \gamma ROE)$$
(11)

When a firm pays out all of its earnings as dividends, then the retention rate is zero ($\gamma=0$) and equation 11 reduces to the simple valuation model in equation 4. Assuming a firm has attractive investment opportunities in which it can generate positive abnormal returns (ROE>K_E), then it can increase value by retaining a larger fraction of earnings and investing them in the business. Thus reinvestment and growth creates value only when a firm can generate positive abnormal returns on future investment opportunities. Those firms with the greatest number and the most profitable investment opportunities should have the highest market-to-book ratios provided they are able to fund the projects.

In fact, it is often convenient to think of firm value as consisting of two parts: the present value of <u>assets in place</u> and the present value of <u>future growth opportunities</u> (Myers, 1977). The former require little in the way of additional investment, while the latter are investment opportunities which are expected to earn positive abnormal returns. These investment opportunities are called "real" options because they resemble financial options, particularly call options. They can be interpreted and managed using option pricing theory and valued using option pricing techniques (see Luehrman, 1995).

Numerical Example

Combining equations 10 and 11 produces a single valuation model that incorporates all three value drivers. Exhibit 1 shows this model as well as the relation between a hypothetical firm's market-to-book ratio and the value drivers. The exhibit presents three cases with differing levels of reinvestment ($\gamma = 0\%$, 33%, and 66%). For each case, there is a sensitivity table showing how the market-to-book ratio depends on the advantage horizon and level of profitability (ROE).

Case #1 (no reinvestment) shows that more profitable firms have higher market-to-book ratios—the ratio increases as one reads across the rows. As stated earlier, the impact of the advantage horizon depends on whether a firm generates positive or negative abnormal earnings. The longer a firm can generate positive abnormal earnings, the greater its market-to-book ratio. However, because of discounting, abnormal earnings in later years have a smaller impact on the market-to-book ratio than abnormal earnings in early years. Alternatively, firms that generate negative abnormal earnings have market-to-book ratios less than one. Moreover, their market-to-book ratio falls as the advantage

Note on Value Drivers 297-082

(disadvantage) horizon gets longer. Finally, the market-to-book ratio is equal to one and is independent of the advantage horizon for firms that generate normal earnings (the case where $ROE=K_E$).

Cases #2 and #3 (with reinvestment rates equal to 33% and 66%, respectively) illustrate the impact of reinvestment. Like the advantage horizon, reinvestment creates additional value only for firms that generate positive abnormal earnings. When firms are able to generate positive abnormal returns (ROE = 25%), have a long advantage horizon (30 years), and reinvest a large fraction of earnings ($\gamma = 66\%$), they create significant value. The difference between the market-to-book ratio in the high return/long horizon with no reinvestment (case #1) and with reinvestment (case #3) is large: 1.66 vs. 4.27.

Empirical Evidence

This section presents empirical evidence on the relation between the value drivers and value creation. Despite the assumptions imbedded in the simple valuation models, they do, nonetheless, yield predictions which are consistent with what we observe in practice.

Profitability

The model predicts that there is a relation between a firm's market-to-book ratio and the ratio of its return on equity to its cost of equity. Given a set of firms in a single industry, the model implies that there should be a positive relation between ROE's and market-to-book ratios for these firms assuming their costs of capital are approximately equal. To a first approximation, it is reasonable to assume that firms in the same industry will have similar capital costs because they hold similar assets and, typically, have similar capital structures.

Exhibit 2 shows the relation between market-to-book ratios and firm profitability for two quite different industries: grocery stores and oil field service companies. Whereas the grocery industry is a retail business with high inventories and low margins, the oil-field services industry is a service business with industrial customers and higher margins. Yet in both cases, there is a very clear, positive relation between equity value and ROE's: higher ROE's are associated with higher market-to-book ratios. Fruhan (1996) presents similar evidence for a much wider range of industries including newspapers, telecommunications, and specialty chemicals.

There are at least two reasons why this relation does not hold perfectly. First, not all firms in the same industry have the same leverage or same asset risk. Thus, financial and operating differences cause the cost of equity to differ across firms. Second, accounting data is subject to manipulation by managers. On the one hand, managers provide valuable information through their choice of accounting disclosures and policies. On the other hand, they are biased which may lead them to distort reported numbers. Fortunately, however, most distortions occur through accruals which eventually get reversed. Because accounting data is subject to this kind of manipulation, it is critical to understand whether the reported numbers reflect economic reality. To the extent high ROE's reflect economic reality, and not unreasonable deferral of costs or a one-time aberrations, then the relation shown in exhibit 2 will be stronger. When accounting data does not reflect economic reality, one must undo the distortions before trying to make substantive conclusions about the business or its prospects.

297-082 Note on Value Drivers

Advantage Horizon

Several researchers have studied the length of the advantage horizon. For example, Fruhan (1995) examined a sample of 87 "high-performing" firms defined as those firms with sales of greater than \$200 million and an average ROE of greater than 25% for five consecutive years between 1976-82. He calculated the median ROE for the firms from 1976-78 and from 1989-93, and then compared these medians against the average ROE for firms on the S&P 400 (see Exhibit 3). Whereas the median ROE for the high-performing subgroup was 21% above the average ROE for the S&P 400 in 1976-82, it was only 2% above in the later period. Thus the high-performing firms' abnormal earnings had largely dissipated over the fifteen year interval.

Palepu et al (1996, pp. 5.4-5.7) report similar findings: abnormally high or low ROE's tend to revert to normal levels, roughly between 10-14%, often within five years and usually within ten years.³ The reversion in ROE's is largely due to reversion in profit margins rather than reversion in asset turnover or leverage which remain relatively constant over time. The fact that advantage horizon lasts for five or ten years provides some justification for using five or ten-year projections in discounted cash flow analysis.

In another study, Ghemawat (1991) examined the returns on investment (ROI) for 692 business units from 1971-1980. After sorting the business units by their ROI in 1971, he divided the sample into two equal subgroups and calculated the average ROI for each subgroup over the next ten years. Initially, the top group had an average ROI of 39% compared to 3% for the bottom group. The 36% spread between the two groups decreased to less than 3% by the end of ten years: the average ROI for the top group had decreased to 21.5% while the average ROI for the bottom group increased to 18.0%.

While the evidence consistently shows that the advantage horizon is finite, firms like Coca-Cola, Wal-Mart, and Microsoft have been able to extend their advantage horizons for many years. These firms have been able to create tremendous value for shareholders by sustaining their ability to generate positive abnormal profits.

Reinvestment

The key insight from the model regarding investment is that reinvestment of earnings is value enhancing only when investment opportunities generate expected returns in excess of the cost of equity (ROE>K_E). Because investment opportunities vary across firms and vary over time for the same firm, it is impossible to make conclusive statements on the value of reinvestment. Nevertheless, there is some evidence that reinvestment creates value. Recent studies have shown that firms which announce major capital expenditure or research and development (R&D) programs experience positive abnormal equity returns. The market interprets these announcements as good news and their stock prices usually increase. While it may be the case that firms announce only their most positive NPV investments, Fruhan (1979, Table 1-6) provides evidence from a sample of almost 1500 firms that broadly supports the relation among high profitability, high reinvestment, and high equity valuations.

Acquisitions represent another form of investment for many firms. Jensen and Ruback (1983) review the many studies on acquirer returns surrounding merger announcements. They conclude that, on average, acquirer shareholders do not lose and target shareholders gain from merger

3 See also Freeman, Ohlson, and Penman (1982).

⁴ McConnell and Muscarella (1985) analyze capital expenditure announcements while Chan, Martin, and Kensigner (1990) analyze R&D expenditure announcements.

announcements. Thus, acquisitions create net gains for both firms combined even though they do not increase acquirer shareholder value.

Jensen (1986, 1993) presents an opposing view. He argues that managers often overinvest, i.e. invest in negative net present value projects, especially when their firms generate substantial free cash flow. Their incentive to overinvest results from their compensation being fied, indirectly, to firm size which, in turn, is a function of the amount investment. They are able to over invest because internal control systems such as board oversight are weak. In the absence of effective internal control systems, external forces such as the market for corporate control discipline investment activity. Jensen cites the oil industry in general and the Gulf Oil takeover in particular as examples where takeovers eliminated wasteful capital expenditures. Just as investing in positive NPV projects creates value, so, too, does eliminating negative NPV investments.

Warren Buffet, the prominent investor and chairman of Berkshire Hathaway, acknowledged the problem of overinvestment in his company's 1984 annual report:

Many corporations that show consistently good returns have, indeed, employed a large portion of their retained earnings on an economically unattractive, even disastrous, basis. Their marvelous core businesses camouflage repeated failures in capital allocation elsewhere (usually involving high-priced acquisitions). The managers at fault periodically report on the lessons they have learned from the latest disappointment. They then usually seek out future lessons (Failure seems to go to their heads.). . In such cases, shareholders would be far better off if the earnings were retained to expand only the high-return business; with the balance being paid in dividends or used to repurchase stock...

Although stated in his characteristically droll way, Buffet's point is clear: reinvestment destroys value unless it generates an appropriate risk-adjusted rate of reform

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References

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Exhibit 1: Numerical example of the relation between the value drivers and value creation

Combining equations 10 and 11 yields the following equation:

 $Market/Book = [(1+\gamma ROE) / (1+K_E)]^n + [ROE(1-\gamma) / (K_E - \gamma ROE)] [1 - \{(1+\gamma ROE) / (1+K_E)\}^n]$

This Exhibit shows the hypothetical market-to-book ratios as a function of the three value drivers: profitability, advantage horizon, and re-investment.; assuming the firm has a cost of equity equal to 15%. The three cases differ by the level of reinvestment which varies from 0% to 66%.

Case #1: Reinvestment rate (γ) = 0%

Return on Equity (ROE)

Advantage
<u>Horizon</u>
5 years
15 years
30 years

5%	15%	25%
0.66	1.00	1.34
0.42	1.00	1.58
0.34	1.00	1.66

Case #2: Reinvestment rate $(\gamma) = 33\%$

Return on Equity (ROE)

Advantage
<u>Horizon</u>
5 years
15 years
30 years

5%	15%	25%
0.65	1.00	1.39
0.37	1.00	1.88
0.27	1.00	2.24

Case #3: Reinvestment rate (γ) = 66%

Return on Equity (ROE)

Advantage
<u>Horizon</u>
5 years
15 years
30 years

5%	15%	25%
0.65	1.00	1.45
0.32	1.00	2.43
0.18	1.00	4.27

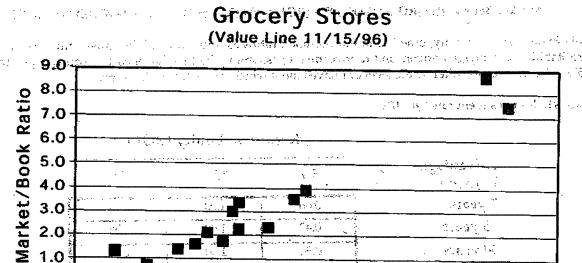
0.0

0%

5%

10%

Exhibit 2: Relation between Return on Equity (ROE) and Market-to-Book Ratio



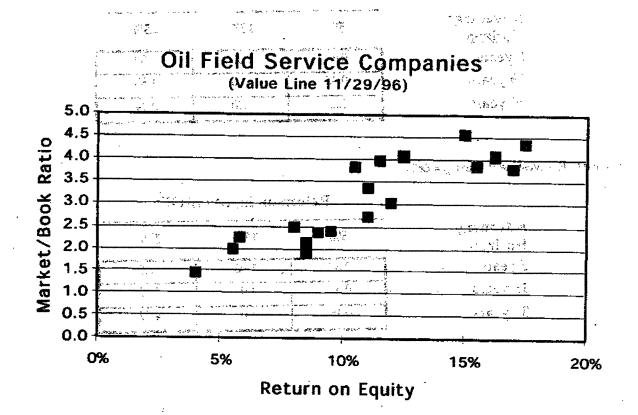
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Return on Equity

20%

25%

15%



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Appendix 1: Equity value and the advantage horizon

Equations 1 and 3 show that a firm's equity market value is a function of its return on equity (ROE) and cost of equity (K_E). Assuming no retention of earnings and constant returns, equity value is:

$$E_{MV} = ROE^*E_{BV} / (1+K_E) + ROE^*E_{BV} / (1+K_E)^2 + \dots$$
 (A1.1)

dividing through by the book value of equity (E_{gy}) yields

Market/Book =
$$E_{MV}/E_{BV}$$
 = ROE/(1+ K_E) + ROE/(1+ K_E)² + . . . (A1.2)

The ROE can be divided into two parts: ROE = $(ROE - K_E) + K_E$. The first term (ROE - KE) consists of "abnormal" earnings, returns to equity in excess of the cost of equity; the second term consists of "normal" earnings because that is the expected return on equity. Substituting back into equation A1.2 yields:

Market/Book =
$$[ROE-K_E) + K_E]/(1+K_E) + [ROE-K_E) + K_E]/(1+K_E)^2 + \dots$$
 (A1.3)

 $Market/Book = (ROE-K_E)/(1+K_E) + ([ROE-K_E)/(1+K_E)^2 + \dots$

$$+K_{E}/(1+K_{E})+K_{E}/(1+K_{E})^{2}+\dots$$
 (A1.4)

Equation A1.4 is the sum of two geometric series, one of normal earnings and one of abnormal earnings. The present value of the normal earnings (using a perpetuity formula) is one:

$$1 = K_E/K_E = K_E/(1+K_E) + K_E/(1+K_E)^2 + \dots$$
(A1.5)

The present value of the abnormal earnings depends on how long the firm expects to earn abnormal earnings. It can be thought of as an annuity: The firm receives a stream of abnormal earnings for a period of n years. The present value of an annuity can be written as:

present value =
$$(ROE-K_E) * [(1/K_E) - (1/(K_E(1+K_E)^n))]$$
 (A1.6)

Combining equations A1.5 and A1.6 yields:

Market/Book = 1 +
$$\{(ROE-K_E)^*[(1/K_E) - (1/(K_E(1+K_E)^n))]\}$$
 (A1.7)

as n approaches infinity, equation A1.7 reduces to equation 4 in the note.

Appendix 2: Equity value and reinvestment

This appendix derives a model of equity valuation as a growing perpetuity. Given a firm with a constant return on equity (ROE), it can either retain its earnings or pay them out to equityholders as dividends. Assuming the firms retains a fraction of earnings (γ) and pays out the remainder, then the market value of equity can be determined as follows.

Time	Total Earnings	Amount Paid Out (ECF)	Amount Retained	Book Value of Equity
t=0				\mathbf{E}_0
t=1	ROE*E ₀	(1-γ)* ROE*E ₀	(γ)* ROE*E ₀	$E_1 = E_0 + (\gamma)^* ROE^*E_0$ $E_1 = E_0 (1 + \gamma ROE)$
t=2	ROE*E ₁ ROE*[E ₀ (1+ γROE)]	$(1-\gamma)^*$ ROE*E ₁ $(1-\gamma)^*$ ROE* E ₀ $(1+\gamma$ ROE)	(γ)* ROE*E ₁ (γ)* ROE* E ₀ (1+ γ ROE)	$E_2 = E_1 + (\gamma)^* ROE^*E_1$ $E_2 = E_1 (1 + \gamma ROE)$ $E_2 = E_0 (1 + \gamma ROE)^2$
t=3	$ ROE^{\bullet}E_{2} $ $ ROE^{\bullet}[E_{0}(1+\gamma ROE)^{2}] $	$(1-\gamma)^* ROE^*E_2$ $(1-\gamma)^* ROE^* E_0 (1+\gamma ROE)^*$	$(\gamma)^* \text{ ROE}^*\text{E}_2$ $(\gamma)^* \text{ ROE}^* \text{ E}_0 (1+\gamma \text{ ROE})^2$	$E_3 = E_2 + (\gamma)^* ROE^*E_2$ $E_3 = E_2 (1 + \gamma ROE)$ $E_3 = E_0 (1 + \gamma ROE)^3$
. t=4	(etc.)			
Growth Rate	η γκοε	γROE	ROE	γROE

Value = discounted present value of payouts (equity cash flows)

$$= \frac{((1-\gamma)^* ROE^*E_0)}{(1+K_E)} + \frac{((1-\gamma)^* ROE^*E_0 (1+\gamma ROE)}{(1+K_E)^2} + \dots$$
 (A2.1)

$$= \frac{((1-\gamma)^{2} ROE^{2}E_{p})}{(1+K_{E})} \{1 + [(1+\gamma ROE)/(1+K_{E})] + [(1+\gamma ROE)/(1+K_{E})]^{2} + \dots \}$$
 (A2.2)

Equation A-2 is a growing perpetuity with growth rate equal to γ ROE. It can be rewritten as:

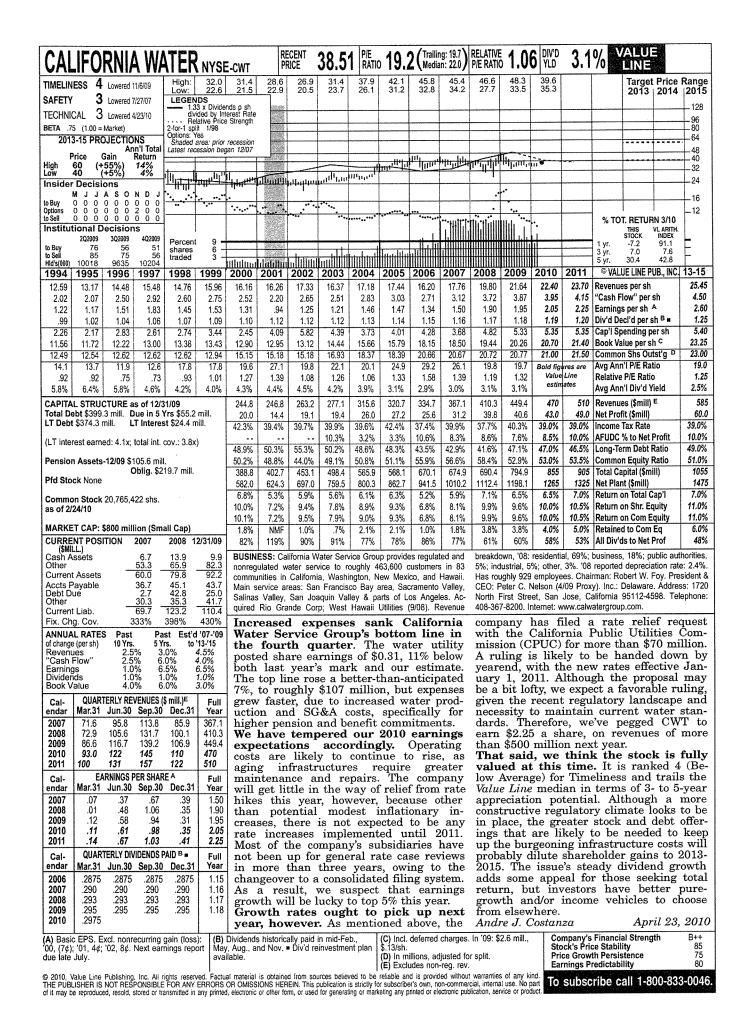
Equity Value =
$$(1-\gamma)^* ROE^*E_{\gamma}$$
 (A2.3)
 $(K_E - \gamma ROE)$

After multiplying through by the book value of equity (E_0) , one gets the ratio of equity at market value to equity at book value $(E_{NV}/E_{BV} = V/E_0)$:

Market/Book =
$$(1-\gamma)^* ROE$$
 (A2.4)
 $(K_E - \gamma ROE)$

15. Refer to Direct Testimony of Dr. J. Randall Woolridge, Exhibit_JRW-4 at 2. For each company in Panels A and B, provide the most recent company profiles as published in *Value Line Investment Survey*.

RESPONSE: Please see the attached documents.



CONN. WATER SE	RVICE	S NDQ-0	TWS REC	ENT 23.	15 TRAILING P/E RATIO		LATIVE 1.03	B DIV'D 3.	970	NE L
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© VALUE LINE PUBLISHING, INC.	11111111111111111111111111111111111111	<u> </u> 2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
SALES PER SH	5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	
"CASH FLOW" PER SH	1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	4 - A B (4 - 00 C
EARNINGS PER SH	1.13	1.12	1.15	1.16 .84	.88	.81	1.05 .87	1.11	1.19	1.15 A.B/1.29 C
DIV'DS DECL'D PER SH CAP'L SPENDING PER SH	.80 1.86	.81 1.98	.83 1.49	1.58	1.96	1.96	2.24	2.44	3.28	
BOOK VALUE PER SH	9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	
COMMON SHS OUTST'G (MILL) AVG ANN'L P/E RATIO	7.65 21.5	7.94 24.3	7.97 23.5	8.04 22.9	8.17 28.6	8.27 29.0	8.38 23.0	8.46 22.2	8.57 18.4	20.1/17.9
RELATIVE P/E RATIO	1.10	1.33	1.34	1.21	1.51	1.57	1.22	1.34	1.23	
AVG ANN'L DIV'D YIELD	3.3%	3.0%	3.0%	3.1% 48.5	3.4% 47.5	3.6% 46.9	3.6% 59.0	3.6% 61.3	4.1% 59.4	Bold figures
SALES (\$MILL) OPERATING MARGIN	45.4 56.1%	45.8 57.7%	47.1 52.1%	48.5 51.0%	48.3%	43.7%	40.8%	49.0%	35.8%	are consensus
DEPRECIATION (\$MILL)	5.0	5.4	5.9	6.0	6.1	5.9	7.2	7.1	6.4	earnings
NET PROFIT (\$MILL) INCOME TAX RATE	8.7 36.1%	8.8 33.8%	9.2 17.9%	9.4	7.2	6.7 23.5%	8.8 32.4%	9,4	10.2	estimates and, using the
NET PROFIT MARGIN	19.1%	19.2%	19.5%	19.4%	15.1%	14.3%	14.9%	15.4%	17.2%	recent prices,
WORKING CAP'L (\$MILL)	d3.3 64.0	d5.1 64.8	d3.9 64.8	d.7 66.4	13.0 77.4	1.2 77.3	8.1 92.3	d3.3 92.2	d13.1 112.0	P/E ratios.
LONG-TERM DEBT (\$MILL) SHR. EQUITY (\$MILL)	71.6	80.7	84.2	88.7	94.9	96.7	100.9	104.2	109.3	
RETURN ON TOTAL CAP'L	7.9%	7.4%	7.5%	7.0%	5.0%	4.9% 6.9%	5.5% 8.7%	5.9% 9.0%	5.5% 9.3%	
RETURN ON SHR. EQUITY RETAINED TO COM EQ	12.1% 3.6%	10.9% 3.1%	10.9% 3.2%	10.6% 3.1%	7.5%	NMF	1.6%	1.9%	2.3%	
ALL DIV'DS TO NET PROF	71%	72%	71%	71%	95%	105%	82%	79%	76%	
ANo. of analysts changing eam. est. in	last 10 days: 0 u	p, 0 down, con	sensus 5-year ea	mings growth n	ot available. ¹⁶ Bi	ased upon 3 ana			The second secon	<i>88.</i>
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12/31/06 .21 .12 .45 12/31/07 .18 .22 .46	.03 .81 .19 1.05	Other Current Liat) 1	2.4 1.3 4.9 19.1	33.1	bulk deliv	reries of en	nergency di	rinking wat	er to businesses
12/31/08 .20 .35 .34	.22 1.11					and reside	ences via tai	nker truck.	As of Dece	mber 3, 2009, it
12/31/09 .13 .27 .66 12/31/10 .15 .29 .47	.13 1.19		M DEBT AND I	QUITY		provided	water to m	fore than 9	vu,uuu cust vanahant C	omers, or about connecticut. Has
Cal- QUARTERLY DIVIDEND	S PAID Full	as of 12		•		225 emp	loyees. Cha	irman, C.I	E.O. & Pre	sident: Eric W.
endar 1Q 2Q 3Q	4Q Year	Total Debt		Due in 5 Yrs	s. \$25.0 mill.	Thornbur	g. Inc.: CT.	Address: 93	3 West Mair	Street, Clinton,
2007 .215 .215 .218	.218 .87	LT Debt \$1 Including (12.0 mill. :ap. Leases N o	ne		-	413. Tel	, ,) 669-86	336. Internet: W.T.
2008 .218 .218 .222 2009 .222 .222 .228	.222 .88 .228 .90	_	capitalized An	(5	1% of Cap'l) 3 mill.	nup://ww	w.ctwater.co		2010	77.1.
2010 .228			Ť					April 23,	2010	
INSTITUTIONAL DECISI	ONS		ability \$14.9 mil			TOTAL S	HAREHOLI	DER RETU	RN	
2Q'09 3Q'0		Pfd Stock \$			'd Paid NMF					iation as of 3/31/2010
to Buy 29 26		Common St	ock 8,573,744 sl			3 Mos.	6 Mos.	1 Yr.	. ЗҮ	rs. 5 Yrs.
to Sell 23 19	16			T.	49% of Cap'l)				% 8.3	7% 12.11%

MIDDLESEX WA	TER NO	Q-MSEX	RE PR	CENT 17.4	14 TRAILING P/E RATIO		RATIVE 1.28	,	1/0	NES
RANKS	18.7 14.6	3 20. 9 13.	04 21.23 73 15.77	21.81 16.65	23.47 17.07	20.50 16.50	20.24 16.93	19.83 12.05	17.91 11.64	18.00 High 16.16 Low
PERFORMANCE 2 Above Average	L	GENDS	7		.1114					
Technical 2 Above Average	Re	Mos Mov Avg Price Strengt	\ :::::!!!!	}	1777H	 	· 	1111	1	18
SAFETY 2 Above Average	3-for-2 s 4-for-3 s	olit 11/03							 	13
BETA .75 (1.00 = Market	14	a indicales recessi	***						•	8
(1.00 - Walker	' <u> </u>			•••		<u> </u>				5
Financial Strength B+						.		•••		3
Price Stability 95									•••	2
•						1		1	1.1	
							1			900
Earnings Predictability 90		التالين								VOL. (thous.
© VALUE LINE PUBLISHING, IN	ic. 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
SALES PER SH	5.87	1	1	6.25	6.44	6.16	6.50	6.79	6.75	Andrews
"CASH FLOW" PER SH EARNINGS PER SH	1.18	1	1	1.28	1.33 .71	1.33	1.49 .87	1.53	1.40	NA/NA
DIV'DS DECL'D PER SH	.62	.6	3 .65	.66	.67	.68	.69	.70	.71	
CAP'L SPENDING PER SH BOOK VALUE PER SH	1.25 7.11	1	1	2.54 8.38	2.18 8.60	2.31 9.82	1.66 10.05	2.12 10.28	1.49 10.33	a
COMMON SHS OUTST'G (MILL)	10.17			11.36	11.58	13.17	13.25	13.40	13.52	
AVG ANN'L P/E RATIO RELATIVE P/E RATIO	24.6 1.26	23.5	30.0 3 1.71	26.4 1.39	27.4 1.45	22.7 1.23	21.6 1.15	19.8 1.19	21.0 1.40	NA/NA
AVG ANN'L DIV'D YIELD	3.89	ŧ	1	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	
SALES (\$MILL)	59.6	61.9	64.1	71.0	74.6	81.1	86.1 47.0%	91.0 46.9%	91.2 42.6%	Bold figures are consensus
OPERATING MARGIN DEPRECIATION (\$MILL)	47.2° 5.3	6 47.1 5.0	% 44.0% 5.6	6.4	7.2	7.8	8.2	8.5	9.2	earnings
NET PROFIT (\$MILL)	7.0	7.8	6.6	8.4	8.5	10.0	11.8	12.2	10.0 34.1%	estimates
NCOME TAX RATE NET PROFIT MARGIN	34.8° 11.7°	1	1	31.1% 11.9%	27.6% 11.4%	33.4% 12.4%	32.6% 13.8%	33.2% 13.4%	10.9%	and, using the recent prices,
WORKING CAP'L (\$MILL)	d.9	d9.3	d13.3	d11.8	d4.5	2.8	d9.6	d40.9	d38.6	P/E ratios.
LONG-TERM DEBT (\$MILL) SHR. EQUITY (\$MILL)	88.1 76.4	87.5 80.6	97.4 83.7	115.3 99.2	128.2 103.6	130.7 133.3	131.6 137.1	118.2 141.2	124.9 143.0	
RETURN ON TOTAL CAP'L	5.6	% 6.0	% 5.0%	5.1%	5.0%	5.1%	5.6%	5.8%	5.0%	
RETURN ON SHR. EQUITY RETAINED TO COM EQ	9.1			8.5%	8.2% .5%	7.5%	8.6% 1.8%	8.6% 1.9%	7.0%	1
ALL DIV'DS TO NET PROF	94%	87%	106%	90%	94%	84%	79%	78%	98%	
Note: No analyst estimates ava	lable.									
ANNUAL RATES		ASSET	S (\$mill.) 2	2008	12/31/09		INDI	JSTRY: W	ater Utility	
of change (per share) 5 Ye Sales 2.0				2.0 3.3 12.8 14.3	4.3 10.6	BUSINES	S: Middl	esex Water	Company	engages in the
"Cash Flow" 4.0 Earnings 3.5		% Inventor	y (Avg cost)	1.2 1.5 1.4 1.5	1.6 5.5	ownership	and operat	tion of regu	ılated water	utility systems
Dividends 1.5 Book Value 5.5	% 1.5	% Current	Assets	17.4 20.6	22.0					egulated waste- ons services and
			Plant							gh its nonregu-
Fiscal QUARTERLY SALES Year 1Q 2Q 3Q		ear & Ed	uip, at cost 3	98.6 436.8 64.7 70.5	453.6 77.1					, Inc. Its water
12/31/07 19.0 21.8 24.	- I	36.1 Net Pro	perty 3	33.9 366.3	376.5					water for resi- prevention pur-
12/31/08 20.8 23.0 25.1 12/31/09 20.6 23.1 25.1		91.0 Other 91.2 Total As		<u>41.4</u> <u>53.1</u> 92.7 440.0	<u>59.6</u> 458.1					d pumping ser-
12/31/10										k. Its other NJ
Fiscal EARNINGS PER S		Accts P		6.5 5.7	4.3					ices to residents ubsidiaries pro-
Year 1Q 2Q 3Q 12/31/06 .15 .25 .28		Pear Debt Du .82 Other		9.0 43.9 11.5 11.9	46.6 9.8	vide water	services to	retail cust	omers in Ne	ew Castle, Kent,
12/31/07 .13 .24 .31	.19	.87 Current		27.0 61.5	60.7	and Susse	x counties.	In March, t	he company	entered into an
		.89 .72								mpany, Inc. and aployees. Chair-
12/31/08 .15 .26 .35 12/31/09 .10 .21 .29	- 1		ERM DEBT AND	EQUITY		man: J. Ri	chard Tom	pkins. Add	ress: 1500 F	Ronson Rd, P.O.
1 :			12/21/00		1	ROY 150), Iselin, N	J 08830. To	el.: 732-634	-1500. Internet:
12/31/09 .10 .21 .29 12/31/10 Cal- QUARTERLY DIVIDE		as o	12/31/09	B	600 0 · 31					
12/31/09 .10 .21 .29 12/31/10 Cal- endar 1Q 2Q 3Q	4Q '	Full fear Total D 69 LT Deb	ebt \$171.5 mill. : \$124.9 mill.	Due in 5 Yrs.	. \$63.0 mill.		w.middlese		-	
12/31/09	4Q 3 .175 5 .178	rear Total D 1.69 Including	ebt \$171.5 mill.	one						W.T.
12/31/09	4Q 3 .175 5 .178	full fear Total D LT Deb 1.70	ebt \$171.5 mill. : \$124.9 mill.	one (47	% of Cap'l)					<i>W.T.</i>
12/31/09 .10 .21 .29 12/31/10 QUARTERLY DIVIDE Colemon 1Q 2Q 3Q 2007 .173 .173 .17 .175 .17 .175 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17 .17	4Q 3 .175 .178 .18	rear Total D LT Deb LT Deb Includion Total D LT Deb Includion Leases	ebt \$171.5 mill. : \$124.9 mill. ig Cap. Leases No	one (47 inual rentals No	% of Cap'l) ne	http://www	v.middlese	April 23,	2010	W.T.
12/31/09 .10 .21 .25 Calendar QUARTERLY DIVIDE 1Q 2Q 3Q 2007 .173 .173 .17 .17 .10 .17 .10 .17 .10 .17 .10 .17 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .10	4Q 13 .175 .178 .18 .18 .18	rear Total D LT Deb Includin .71 Leases Pensio	ebt \$171.5 mill. : \$124.9 mill. ng Cap. Leases No Uncapitalized An	one (47 Inual rentals No II. in '09 vs. \$25.5 Pfd Div'd F	% of Cap'l) ne 5 mill. in '08 Paid \$.2 mill.	http://www		April 23,	2010 RN	W.T.
12/31/09	4Q 13 .175 5 .178 3 .18 SIONS 130 3	rear Total D LT Deb Includin .71 Leases Pensio	ebt \$171.5 mill. \$124.9 mill. Ing Cap. Leases Note that the service of the serv	one (47 Inual rentals No II. in '09 vs. \$25.5 Pfd Div'd F	% of Cap'l) ne 5 mill. in '08	http://www	v.middlese	April 23,	2010 RN nds plus appreci	iation as of 3/31/2010

PENNICHUCK CO	RP NDC	LPNNW	REC PRI	ENT 23.3	36 TRAILING PE RATIO	42.5 P	ERATIO 2.24	PLD 3.	1% YA	
RANKS	20.25 14.49	24.30 17.63	26.25 15.18	22.34 17.99	22.00 18.10	25.90 17.00	26.92 20.05	28.48 14.75	24.80 16.56	23.51 High 19.00 Low
PERFORMANCE 3 Average	LEGE									45
Technical 3 Average	12 Mo	s Mov Avg ce Strenath	and an extension							30
2	4-for-3 split 4-for-3 split	12/01				111	11111111111			22.5
SAFETY 3 Average	Shaded area ind	licates recession	1.11111111	المرالية	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	111111	H-	1,,,,,	11.	T'
BETA .50 (1.00 = Market)	Ш		1:'				<u> </u>	.'		13
		•	٠٠٠.٠٠.					٠.	• •	9
Financial Strength B+										6
									•	
Price Stability 90			1			<u> </u>	 		111	4 3
Price Growth Persistence 50		lı .								
Earnings Predictability 30						11			. IIIII	200 VOL.
	1,111,,						<u> </u>			(thous.
© VALUE LINE PUBLISHING, INC.	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
SALES PER SH	7.15	7.35	6.69	7.15	5.67	5.81	6.99	7.29	7.05	
"CASH FLOW" PER SH	2.09	2.00	1.53	1.57	.89	.99	1.77	2.10	1.43	
EARNINGS PER SH	1.14	1.13	.62	.60	.13	.14	.84	1.11	.55	.72 ^{A,B} /.79 ^C
DIV'DS DECL'D PER SH	.57	.59	.63	.65 1.69	.66 2.60	.66 5.08	.66 4.25	.66 3.45	.70 1.76	
CAP'L SPENDING PER SH BOOK VALUE PER SH	2.58 9.61	1.65 9.55	2.25 9.44	9.37	10.89	10.57	10.78	11.24	11.87	
COMMON SHS OUTST'G (MILL)	3.18	3.19	3.19	3.22	4.19	4.21	4.23	4.25	4.65	
AVG ANN'L P/E RATIO	14.5	18.1	30.3	32.7	NMF	NMF	29.1	20.0	38.9	32.4/29.6
RELATIVE P/E RATIO	.74	.99	1.73	1.73	NMF	NMF	1.54	1.20	2.60	
AVG ANN'L DIV'D YIELD	3.4%	2.9%	3.4%	3.3%	3.3%	3.2%	2.7%	3.0%	3.3%	
SALES (\$MILL)	22.8	23.4	21.4	23.0	23.8	24.5	29.5	31.0	32.8	Bold figures
OPERATING MARGIN	51.0%	44.5%	37.9% 2.9	40.7% 3.1	34.0%	30.7%	39.3%	47.0% 4.2	48.4%	are consensus earnings
DEPRECIATION (\$MILL) NET PROFIT (\$MILL)	3.0 3.6	2.8 3.6	2.9	1.9	3.3	.6	3.6	4.2	2.4	earmings
INCOME TAX RATE	39.1%	37.2%	38.9%	38.4%	38.0%	38.0%	39.2%	36.7%	39.6%	and, using the
NET PROFIT MARGIN	15.9%	15.4%	9.2%	8.4%	2.0%	2.3%	12.1%	15.2%	7.3%	recent prices,
WORKING CAP'L (\$MILL)	3.5	4.6	.4	d11.0	19.2	3.2	2.9	d1.9	.6	P/E ratios.
LONG-TERM DEBT (\$MILL)	27.1	26.9	26.9	16.9	41.3	47.7	58.0	59.6	54.3	
SHR. EQUITY (\$MILL)	30.6	30.4	30.2	30.2	45.6	44.6	45.6	47.8	55.2	
RETURN ON TOTAL CAP'L	8.0%	8.0%	5.1%	5.9%	1.7%	2.2%	4.8% 7.9%	6.2% 9.9%	3.9% 4.3%	
RETURN ON SHR. EQUITY RETAINED TO COM EQ	11.8%	11.8% 5.5%	6.5% NMF	6.4% NMF	1.0% NMF	NMF	1.7%	4.0%	NMF	
ALL DIV'DS TO NET PROF	50%	54%	102%	107%	NMF	NMF	78%	59%	NMF	
ANo. of analysts changing eam, est. in	1	1		1	ot available. ^B Ba	sed upon 3 ana	lysts' estimates.	CBased upon 3 a	analysts' estimate	s.
ANNUAL RATES		Ī			ĺ.			JSTRY: Wa		
of change (per share) 5 Yrs.	1 Yr.	ASSETS (\$n Cash Assets		007 2008 9.0 1.1	12/31/09 1.6					

					,				
ANNUAL RATES						ASSETS (\$mill.)	2007	2008	12/31/09
Sales	Flow" s ds	-	5 Yrs. 	-3 -31 -50 6	.5% .5% .5%	Cash Assets Receivables Inventory (Avg cost) Other Current Assets	9.0 4.7 1.1 1.0 15.8	1.1 5.1 .9	1.6 4.4 .7
, , , , , , , , , , , , , , , , , , , ,					Full	Property, Plant			400.0
Year	1Q	2Q	3Q `	4Q	Year	& Equip, at cost Accum Depreciation	175.6 35.3	187.4 36.1	192.6 37.8
12/31/07	6.0	7.1	9.4	7.0	29.5		140.3		154.8
12/31/08	6.8	7.9	8.4	7.9	31.0		12.5	14.8	13.3
12/31/09 12/31/10	7.0	8.5	9.5	7.8	32.8	Total Assets	168.6	175.0	177.6
Fiscal EARNINGS PER SHARE					Full	LIABILITIES (\$mill.)	1.9	4	1.1
Year	1Q	2Q	3Q	4Q	Year	Accts Payable Debt Due	6.7	.4 6.7	5.9
12/31/06	d.17	.04	.16	.11	.14	Other	4.3	3.7	1.9
12/31/07	.04	.31	.38	.11	.84	Current Liab	12.9	10.8	8.9
12/31/08		.19	.21	.12	1,11				
12/31/09	d.02	.18	.32	.07	.55				
12/31/10	.03	.22	.39			LONG-TERM DEBT AND EQUITY			
Cal- QUARTERLY DIVIDENDS PAID					Full	as of 12/31/09			
endar	1Q	2Q	3Q	4Q	Year	Total Debt \$60.2 mill.	Du	e in 5 Yrs	, \$9.5 mill.
2007	.165	.165	.165	.165	.66	LT Debt \$54.3 mill.			
2008	.165	.165	.165	.165	.66	Including Cap. Lease	s None	(509	% of Cap'l)
2009	.175	.175	.175	.175	.70	Leases, Uncapitalized	Annual r		
2010	.18				<u></u>				
	INSTI	TUTIONAL	DECISIO	NS		Pension Liability \$5.7 mill. in '09 vs. \$6.4 mill. in '08			
1		2Q'09	3Q'09	40	Q'09	Pfd Stock None		Pfd Div'd	Paid None
to Buy		28	19		25	Common Stock 4.651.0	58 shares		

to Sell

Hld's(000)

12

2314

19

2358

10

2520

BUSINESS: Pennichuck Corporation, through its subsidiaries, engages in the collection, storage, treatment, and distribution of potable water for domestic, industrial, commercial, and fire protection service in southern and central New Hampshire. The company also provides non-regulated water management services, including monitoring, maintenance, testing, and compliance reporting services for water systems of various towns, businesses, and residential communities. In addition, it engages in real estate planning, development, and management of residential, commercial, industrial, and retail properties. Further, Pennichuck controls approximately 450 acres of developable land in Nashua and Merrimack, New Hampshire. It serves Nashua, New Hampshire and 10 surrounding municipalities in southern New Hampshire with an estimated total population of 110,000. Has 101 employees. C.E.O. & President: Duane C. Montopoli . Inc.: NH. Address: 25 Manchester Street, Merrimack, NH 03054. Tel.: (603) 882-5191. Internet: http://www.pennichuck.com.

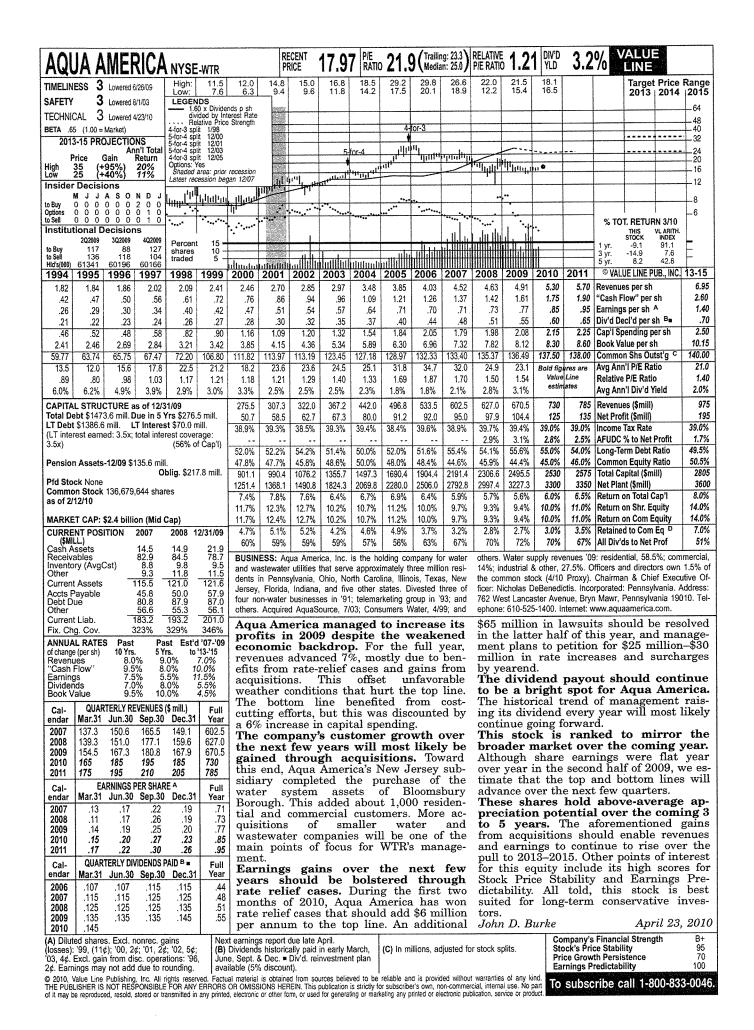
W.T. April 23, 2010

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 3/31/2010

12 27% 9 86% 18 76% 11.61% 5.569	3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
12.27 / 0 0.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.00 / 0 1.0	12.27%	9.86%	18.76%	11.61%	5.56%

(50% of Cap'l)



SJW CORP. NYSE-S	JW		RE(PR	CENT 27.2	7 TRAILING PIE RATIO	33.7 RE	ATIVE 1.77	7 DIV'D 2.	JAVI. SESSIMANNIA	UE NE
RANKS	17.83 11.58	15.07 12.67	14.95 12.57	19.64 14.60	27.80 16.07	45.33 21.16	43.00 27.65	35.11 20.05	30.44 18.22	27.60 High 21.60 Low
PERFORMANCE 3 Average Technical 3 Average	3-for-1 split	s Mov Avg ice Strength 3/04			111	الل	Ш	· •	· .	45 30
SAFETY 3 Average	2-for-1 split Shaded area inc	3/06 dicates recession		111111111	HITT		• • •	'-		22.5
BETA .95 (1.00 = Market)	11011	•	• • •				•••	• • • • • • • • • • • • • • • • • • • •	٠	13 9
Financial Strength B+		•••••	****	• • • • • • • • • • • • • • • • • • • •		•			•••	6
Price Stability 65										4 3
Price Growth Persistence 75 Earnings Predictability 85										2300
Laimings Fredictability 65	1					لتسلس.				
© VALUE LINE PUBLISHING, INC.	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
SALES PER SH "CASH FLOW" PER SH EARNINGS PER SH	7.45 1.49 .77	7.97 1.55 .78	8.20 1.75 .91	9.14 1.89 .87	9.86 2.21 1.12	10.35 2.38 1.19	11.25 2.30 1.04	12.12 2.44 1.08	11.68 2.21 .81	1.04 ^{A.B} /1.13 ^C
DIV'DS DECL'D PER SH CAP'L SPENDING PER SH	.43 2.63	.46 2.06	.49 3.41	.51 2.31	.53 2.83	.57 3.87	.61 6.62	.65 3.79	.66 3.17	
BOOK VALUE PER SH COMMON SHS OUTST'G (MILL)	8.17 18.27	8.40 18.27	9.11 18.27	10.11 18.27	10.72 18.27	12.48 18.28	12.90 18.36	13.99 18.18	13.66 18.50	
AVG ANN'L P/E RATIO RELATIVE P/E RATIO	18.5 .95	17.3 .94	15.4 .88	19.6 1.04	19.7 1.04	23.5 1.27	33.4 1.77	26.2 1.58	28.7 1.92	26.2/24.1
AVG ANN'L DIV'D YIELD SALES (\$MILL) OPERATING MARGIN	3.0% 136.1	3.4% 145.7 63.7%	3.5% 149.7 56.0%	3.0% 166.9 56.4%	2.4% 180.1 55.9%	2.0% 189.2 57.0%	1.7% 206.6 41.8%	2.3% 220.3 42.4%	2.8% 216.1 42.5%	Bold figures are consensus
DEPRECIATION (\$MILL) NET PROFIT (\$MILL)	64.4% 13.2 14.0	14.0	15.2 16.7	18.5 16.0	19.7 20.7	21.3	22.9	24.0	25.6 15.2	earnings estimates
INCOME TAX RATE NET PROFIT MARGIN	34.5% 10.3%	40.4% 9.8%	36.2% 11.2%	42.1% 9.6%	41.6% 11.5%	40.8% 11.7%	39.4% 9.4%	39.5% 9.2%	40.4% 7.0%	and, using the recent prices,
WORKING CAP'L (\$MILL) LONG-TERM DEBT (\$MILL) SHR. EQUITY (\$MILL)	d3.8 110.0 149.4	d4.9 110.0 153.5	12.0 139.6 166.4	13.0 143.6 184.7	10.8 145.3 195.9	22.2 163.6 228.2	d1.4 216.3 236.9	d11.3 216.6 254.3	d4.0 246.9 252.8	P/E ratios.
RETURN ON TOTAL CAP'L RETURN ON SHR. EQUITY	6.7% 9.4%	6.9% 9.3%	6.9% 10.0%	6.5% 8.7%	7.6% 10.6%	7.0% 9.7%	5.7% 8.2%	5.8% 8.0%	4.4% 6.0%	
RETAINED TO COM EQ ALL DIV'DS TO NET PROF ANo. of analysts changing earn, est, in li	4.1% 56%	3.8% 59%	4.7% 53%	3.6% 58%	5.6% 47%	5.2% 46%	57%	3.3% 59%	1.2% 80%	•

Ano. of analysts changing earn. est. in last 10 days: 0 up, 0 down, consensus 5-year earnings growth not available. Based upon 2 analysts' estimates. CBased upon 2 analysts' estimates.

"No. of a	nalysts c	hanging ea	ım. est. in l	ast 10 d	ays: 0 u	p, 0 down, consensus 5-ye	ear earnings	growth no	t available. • E
		ANNUAL	RATES			ASSETS (\$mill.)	2007	2008	12/31/09
of chan	ge (per	share)	5 Yrs.	1	Yr.	Cash Assets	2.4	3.4	1.4
Sales			6.5%		3.5%	Receivables	23.0	24.5	23.3
"Cash F	low"		6.0%		9.5%	Inventory	.8	.9	1.0
Earning			3.0%		5.5%	Other	5.4	3.2	2.3
Dividen			5.5%		2.5%	Current Assets	31.6	32.0	28.0
Book V	alue		8.0%	-	2.5%		0	020.0	
Fiscal	QUA	RTERLY	SALES (\$1	ni(l.)	Full	Property, Plant			
Year	1Q	2Q	3Q	4Q	Year	& Equip, at cost	904.3	958.7	1020.7
						Accum Depreciation	258.8	274.5	302.2
12/31/07		55.1	64.9	47.6	206.6	Net Property	645.5	684.2	718.5
12/31/08	41.3	60.0	69.5	49.5	220.3	Other	90.2	134.7	132.0
12/31/09	40.0	58.2	69.3	48.6	216.1	Total Assets	767.3	850.9	878.5
12/31/10									
Fiscal	EARNINGS PER SHARE Full		E. II	LIABILITIES (\$mill.)					
Year	1Q	2Q	3Q	4Q Year		Accts Payable	9.3	5.8	6.6
rear	102	202	<u> </u>	402	rear	Debt Due	5.6	19.1	6.9
12/31/06	.14	.35	.48	.22	1.19	Other	18.1	18.4	18.5
12/31/07	.12	.29	.43	.20	1.04	Current Liab	33.0	43.3	32.0
12/31/08	.15	.34	.44	.15	1.08				
12/31/09	.01	.23	.43	.14	.81				
12/31/10	.05	.26	.48			LONG-TERM DEBT A	ND EQUIT	rγ	
Cal-	OUAF	TERIVO	IVIDENDS	PAIN	Full	as of 12/31/09			
endar	1Q	2Q	3Q	4Q	Year	Total Debt \$253.8 mill	Duo	in 5 Vre	\$21.5 mill.
						LT Debt \$246.9 mill.	. Due	111 3 113.	φεισ mm.
2007	.151	.151	.151	.151	.60	Including Cap. Lease	s None		
2008	.161	.161	.161	.161	.64			(499	% of Cap'l)
2009	.165	.165	.165	.165	.66	Leases, Uncapitalize	d Annual r	entals Non	ie '
2010	.17								
	INSTITUTIONAL DECISIONS					Pension Liability \$47.	.5 mill. in '0	9 vs. \$42.3	mill, in '08
	11/01/				0:00	Pfd Stock None		Pfd Div'd	Paid None
i		2Q'09	3Q'09	- 4	Q'09	1.10 010011 110110		Dir u	

43

24

8827

to Buy

to Sell

Hld's(000)

40

8694

29

8607

INDUSTRY: Water Utility

BUSINESS: SJW Corporation, through its subsidiaries, engages in the production, purchase, storage, purification, distribution, and retail sale of water. The company offers nonregulated water-related services, including water system operations, cash remittances, and maintenance contract services. SJW also owns undeveloped land; a 70% limited partnership interest in 444 West Santa Clara Street, L.P.; and operates commercial buildings in Arizona, California, Connecticut, Florida, Tennessee, and Texas. As of September 30, 2009, SJW provided water service to approximately 226,000 connections that served a population of approximately one million people in the San Jose area. It also provides water service to approximately 8,700 connections that serve approximately 36,000 residents in a service area in the region between San Antonio and Austin, Texas. Has 375 employees. Chairman: Charles J. Toeniskoetter. Inc.: CA. Address: 110 W. Taylor Street, San Jose, CA 95110. Tel.: (408) 279-7800. Internet: http://www.sjwater.com.

W.T.

April 23, 2010

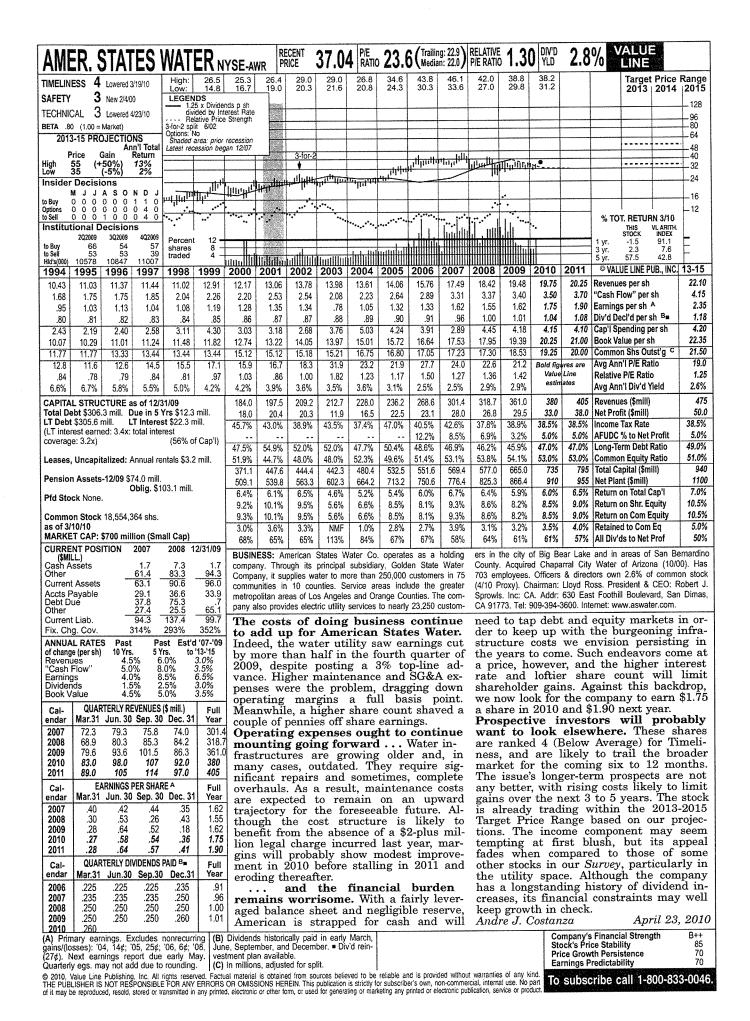
TOTAL SHAREHOLDER RETURN

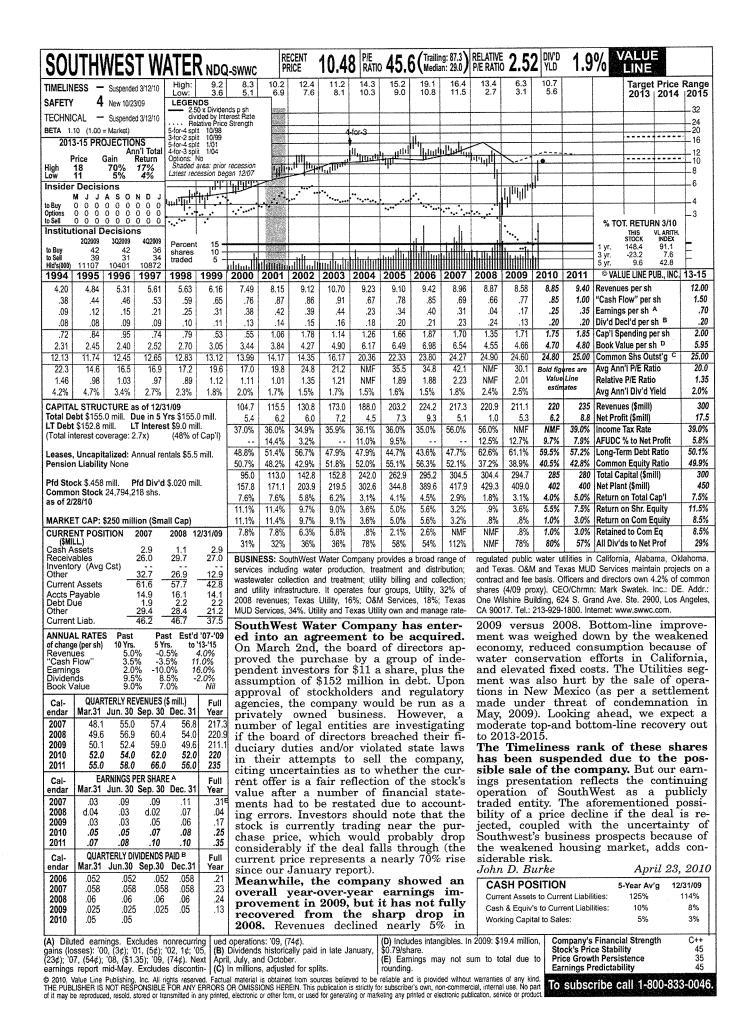
Dividends plus appreciation as of 3/31/2010

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
13.50%	12.94%	3.07%	-32.38%	62.58%

Common Stock 18,499,602 shares

(51% of Cap'l)





YORK WATER CO	NDQ-YO	RW	REC PRI	CENT 13.	36 TRAILING P/E RATIO	21.8 RE	ATIVE 1.15	5 PIV'D 3.	7% VAI	NE L
RANKS	10.22 5.67	13.45 8.20	13.49 9.33	14.03 11.00	17.87 11.67	20.99 15.33	18.55 15.45	16.50 6.23	17.95 9.74	15.00 High 13.04 Low
PERFORMANCE 3 Average	LEGE	NDS		, ,,,,						
Technical 3 Average	· · · · Rel Pri	s Mov Avg ice Strength	•		4		 	1,111,11	سرا الرا	18
SAFETY 3 Average	2-for-1 split 3-for-2 split Shaded area ind	9/06 licates recession	111111111111111111111111111111111111111	발발;;;; +					.11.	13
BETA .65 (1.00 = Market)	11	••	••••	••••			·······			8
Financial Strength B+								•		3
Price Stability 85									,	2
Price Growth Persistence 55			_							L.L
Earnings Predictability 95	.,,,,,,,,,,			111111111111111111111111111111111111111						375 VOL. (thous.
© VALUE LINE PUBLISHING, INC.	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010/2011
REVENUES PER SH	2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	
"CASH FLOW" PER SH EARNINGS PER SH	.59 .43	.57 .40	.65 .47	.65 .49	.79 .56	.77 .58	.86 .57	.88 .57	.95 .64	.68 ^{A,B} /.72 ^C
DIV'D DECL'D PER SH	.34	.35	.37	.39	.42	.45	.48	.49	.51	.00 /./2
CAP'L SPENDING PER SH	.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	**************************************
BOOK VALUE PER SH	3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	
COMMON SHS OUTST'G (MILL)	9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	
AVG ANN'L P/E RATIO RELATIVE P/E RATIO	17.9 .92	26.9	24.5	25.7	26.3	31.2	30.3 1.61	24.6 1.48	21.9 1.46	20.5/19.4
AVG ANN'L DIV'D YIELD	4.3%	1.47 3.3%	1.40 3.2%	1.36 3.1%	1.39 2.9%	1.68 2.5%	2.8%	3.5%	3.6%	
REVENUES (\$MILL)	19.4	19.6	20.9	22.5	26.8	28.7	31.4	32.8	37.0	Bold figures
NET PROFIT (\$MILL)	4.0	3.8	4.4	4.8	5.8	6.1	6.4	6.4	7.5	are consensus
INCOME TAX RATE	35.8%	34.9%	34.8%	36.7%	36.7%	34.4%	36.5%	36.1%	37.9%	earnings
AFUDC % TO NET PROFIT	2.2%	3.7%		**		7.2%	3.6%	10.1%		estimates
LONG-TERM DEBT RATIO	47.7%	46.7%	43.4%	42.5%	44.1%	48.3%	46.5%	54.5%	45.7%	and, using the
COMMON EQUITY RATIO	52.3%	53.3%	56.6%	57.5%	55.9%	51.7%	53.5%	45.5%	54.3%	recent prices,
TOTAL CAPITAL (\$MILL) NET PLANT (\$MILL)	68.6 102.3	69.9 106.7	69.0 116.5	83.6 140.0	90.3 155.3	126.5 174.4	125.7 191.6	153.4 211.4	160.1 222.0	P/E ratios.
RETURN ON TOTAL CAP'L	7.9%	7.4%	8.5%	7.6%	8.4%	6.2%	6.7%	5.7%	6.2%	
RETURN ON SHR. EQUITY	11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	9.2%	8.6%	
RETURN ON COM EQUITY	11.2%	10.2%	11.4%	10.0%	11.6%	9.3%	9.5%	9.2%	8.6%	
RETAINED TO COM EQ	2.5%	1.3%	2.6%	2.1%	3.0%	2.2%	1.7%	1.4%	1.9%	
ALL DIV'DS TO NET PROF	78%	88%	77%	79%	74%	77%	82%	85%	78%	
ANo. of analysts changing earn. est. in I	ast 10 days: 0 t	ıp, û down, cons	ensus 5-year ear	mings growth 6.	0% per year. ^B B	ased upon 4 ana	alysts' estimates.	C _{Based} upon 4	analysts' estimat	tes.
ANNUAL RATES		ACCETO 10-	-:II \	07 2008	12/31/09		INDL	JSTRY: Wa	ter Utility	
of change (per share) 5 Yrs.	1 Yr.	ASSETS (\$n		0 0	12/31/09					

140. Ur ai	ilalysis ci	anging car	n. ost. m sa	31 10 da	ys. 0 u	o, u down, consensus 5-ye	ar earrings	growin o.c	70 per year.	
	A	NNUAL F	RATES			ASSETS (\$mill.)	2007	2008	12/31/09	
of chang	ge (per s	hare)	5 Yrs.	1	Yr.	Cash Assets	.0	.0	.0	
Revenu	es		6.0%	2	.0%	Receivables	5.2	5.9	5.4	
"Cash F	low"		7.5%		.5%	Inventory (Ava cost)	.8	.7	.7	
Earning			5.5%		.5%	Other	.8	.7	1.0	
Dividend			6.0%		.5%	Current Assets	6.8	7.3	7.1	
Book Va	alue		8.5%	13	.0%	Outtent Added	0.0	7.0	1.1	
Fiscal	QUA	RTERLY	SALES (\$n	nill.)	Full	Property, Plant				
Year	1Q	2Q	3Q	4Q	Year	& Equip, at cost	223.1	246.0	260.4	
						Accum Depreciation	31.5	34.6	38.4	
12/31/07	7.4	7.9	8.3	7.8	31.4	Net Property	191.6	211.4	222.0	
12/31/08	7.5	7.8	8.6	8.9	32.8		12.6	21.7	19.7	
12/31/09	8.8	9.2	9.8	9.2	37.0	Total Assets	211.0	240.4	248.8	
12/31/10										
Fiscal	FΔ	RNINGS	PER SHAF	?F	Full	LIABILITIES (\$mill.)				
Year	1Q	2Q	3Q	4Q	Year	Accts Payable	3.2	2.0	1.4	
1001	, , ,			700		Debt Due	15.0	8.7	9.3	
12/31/06	.12	.14	.17	.15	.58	Other	3.2	3.5	3.9	
12/31/07	.12	.15	.15	.15	.57	Current Liab	21.4	14.2	14.6	
12/31/08	.11	.13	.15	.18	.57					
12/31/09	.13	.17	.18	.16	.64					
12/31/10	.14	.18	.19			LONG-TERM DEBT A	ND EQUIT	ſΥ		
Cal-	OHAR	TERIVO	IVIDENDS	PAID	Full	as of 12/31/09				
endar	1Q	2Q	3Q	4Q	Year	Total Debt \$82.6 mill.	Due	in 5 Vrs	\$24.6 mill.	
2007	.118	.118	440	440	.47	LT Debt \$73.2 mill.	Duc	111 0 1110.	Ψ2.4.0 111111.	
1 1			.118	.118	1	Including Cap. Lease	s None			
2008	.121	.121	.121	.121	.48			(469	% of Cap'l)	
2009	.126	.126	.126	.126	.50	Leases, Uncapitalized	Annual re	entals Non	е	
2010 .128 .128										
INSTITUTIONAL DECISIONS						Pension Liability \$8.8	mill. in '09	vs. \$9.8 mi	#. in '08	
		2Q'09	3Q'09		2'09	Pfd Stock None		Pfd Div'd	Paid None	

35

16

12

2477

28

15

2961

to Buy

to Sell

Hld's(000)

BUSINESS: The York Water Company engages in the impounding, purification, and distribution of water in York County and Adams County, Pennsylvania. The company supplies water for residential, commercial, industrial, and other customers. It has two reservoirs, Lake Williams, which is 700 feet long and 58 feet high, and creates a reservoir covering approximately 165 acres containing about 870 million gallons of water; and Lake Redman, which is 1,000 feet long and 52 feet high and creates a reservoir covering approximately 290 acres containing about 1.3 billion gallons of water. In addition, the company possesses a 15-mile pipeline from the Susquehanna River to Lake Redman that provides access to an additional supply of water. As of December 31, 2009, the company served approximately 180,000 residential, commercial, industrial, and other customers in 39 municipalities in York County and seven municipalities in Adams County. Has 111 employees. C.E.O. & President: Jeffrey R. Hines. Inc.: PA. Address: 130 East Market Street, York, PA 17401. Tel.: (717) 845-3601. Internet: http://www.yorkwater.com.

W.T.

April 23, 2010

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 3/31/2010

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
-4.36%	1.00%	15.19%	-10.47%	26.22%
·····		184 (2020) (2010) (2010) (2010)	化二十分分数据 医双氯化二氯化二氯化二氯化二氯化二氯化二氯化	82183 FR - 12 TO B

Common Stock 12,558,724 shares

(54% of Cap'l)

	UMI	WAI	ER N	IYSE-A	WK	PI	ECENT RICE	21.48	3 RATIO	16. 3	3 (Medi	an: NMF	P/E RATIO	0.90) DIV'D YLD	3.9	%	ALUI LINE		
IMELINESS -	_ E											High: Low:	23.7 16.5	23.0 16.2	23.8 20.4				Price	
AFETY (3 New 7/25	5/08	LEGEN		c Ctronoth					İ		LOW.	10.5	10.2	20.4			2013	2014	
ECHNICAL -	E		Options: Y	elative Price Yes area: prior	•														-	80
ETA .65 (1.00			Latest rec	cession beg	gan 12/07															\pm_{50}^{60}
2013-15 PR	ROJECTIC	DNS nn'i Total																	 	40
Price igh 40 (Return 20%																		+30 $+25$
ow 25 (+15%)	9%			\vdash							ļ	441111	 ,,,,,,, ,,,,,	110					 20
nsider Decis M J J		N D J		<u> </u>	-								1	1.11					-	+15
Buy 0 3 0	0 0 0	2 0 0			<u> </u>								ļ .	•.					ļ	 10
	0 0 0																% TO	' T. RETUR	, RN 3/10	-7.5
nstitutional i 202009		ns 4Q2009													•				VL ARITH.	
Buy 137	152	178 77	Percent shares	14 -									П.,				1 yr. 3 yr.	17.9	91.1 7.6	F
lid's(000) 82903	119774	157474	traded	7 -													5 yr.		42.8	Ι.
994 1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		2011	 	JE LINE P	UB., INC.	
											13.08	13.84 d.47	14.61 2.87	13.98 2.89	14.05 2.95	13.95 3.05	Revenue	es per sn low" per :	sh	14. 3.
											d.97	d2.14	1.10	1.25	1.40			s per sh		1.
													.40	.82	.86.			cl'd per s		1.
											4.31 23.86	4.74 28.39	6.31 25.64	4.50 22.91	4.30 22.95			ending p lue per si		4. 24.
	_					••					160.00	160.00	160.00	174.63	185.00	195.00	Commo	n Shs Ou	tst'g C	215.
						••							18.9	15.6	Bold fig.		1	'I P/E Rat		20
			-:	••			••			:-			1.14	1.04 4.2%	Value estin		1	P/E Ratio	-	3.1
APITAL STRU		as of 12/2									2093.1	2214.2	2336.9	2440.7	2600	2725	Revenue		.014	31
otal Debt \$534	42.3 mill. C	Due in 5 \	Yrs \$243.								d155.8	d342.3	187.2	209.9	250		Net Prof			3
T Debt \$5288. Total interest c				mill. of Cap'l)						••			37.4%	37.9%	38.5%	39.0%	Income			40.0
	•	•	•								56.1%	50.9%	12.5% 53.1%	10.0% 56.9%	10.0% 55.5%			% to Net I rm Debt F		15.0 53.0
eases, Uncap ension Asset				.u mili.							43.9%	49.1%	46.9%	43.1%	44.5%	45.0%	, -	n Equity F		47.
fd Stock \$24.			128.2 mill \$2.0 mill.								8692.8	9245.7	8750.2	9289.0	9635	10050	Total Ca	pital (\$mi		112
iu slock 924.	Z 111111. I	riu biv u	φ2.0 пп.	•					•		8720.6 NMF	9318.0 NMF	9991.8	10524	11050 4.0%	11550 4.0%	Net Plan		100	13
ommon Stoci s of 2/25/10	k 174,670	1,026 shs.									NMF	NMF	3.7% 4.6%	3.8% 5.2%	6.0%	6.0%		on Total C on Shr. Ec		6.
											NMF	NMF	4.6%	5.2%	6.0%	6.0%	Return c	n Com E	quity	6.
MARKET CAP: CURRENT POS		2007	2008 1	2/24/00				••			NMF	NMF	3.0% 34%	1.8% 65%	2.0% 62%	2.0%		i to Com Is to Net I		2.5 62
(\$MILL) Cash Assets	Jinon	13.5	9.5	22.3	DITCINI		Lorinan V	Vater Wor	rlen Com			lorgod				L	1	s roughly		<u></u>
Other		416.9	408.2	476.8				valei vvoi id wastew										AG owns		
Current Assets Accts Payable			417.7 149.8	499.1 138.6				in people sts munic										Investors ald L. C		
Debt Due Other	3	316.8	654.8 300.2	54.1 414.7				sis munic ikeep as i										rel Oak		
Current Liab.		774.5 1	104.8	607.4	up almo	ost 90%	of 2008 i	revenues.	New Je	rsey is it	s biggest	market	NJ 0804	3. Telep	none: 85	6-346-82	00. Inten	net: www	.amwate	r.con
ix. Chg. Cov.			198%	225%				er W										being		
NNUAL RATE			st Est'd	1 07-109				ıarter earni							•			efit fi		
f change (per sh				4 001						T MULZ	11 8 8					oo. er	120010	2 1.116		pan
Revenues	,			1.0% 1.0%			cembe		iod, 9	% she		last	to co	me in			end	of gui		
levenues Cash Flow" arnings		 ·	2	1.0% NMF	year'	's mai	cembe rk and	d $16%$	belov	% shew our	ort of estin	last nate.	to cor	me in \$1.40	a sha	e high re thi	end is yea	of gui r.	dance	e ar
Revenues Cash Flow" arnings Dividends			3	1.0%	year' Favo	's mar rable	cemberk and rate	d 16% case	belov rewai	% she w our rds li	ort of estin	last nate. reve-	to cor earn Incr	me in \$1.40 e asin	asha gin	e high re thi frast i	end is year ructu	of gui r. re c	dance osts	e ar ar
Revenues Cash Flow" arnings Dividends Book Value	TERLY RE	VENUES (\$	2: 3: 	1.0% NMF 19.0% 1.5%	year' Favo nues than	s mar rable 5%, expe	cemberk and rate but geted,	d 16% case growth with	belov rewar was incle	% shew our rds lite a lite ement	ort of esting fted in tle lig	last nate. reve- ghter ther	to corearn Increthres	me in \$1.40 e asin a teni Desp	a sha g in ng lo pite i	e high re thi frasti nger- mprov	end is yea: ructu term red re	of gui r. re c grow gulat	dance osts vth, h	ar ar oack
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The Water Utility Industry has not done too well over the last few months. Indeed, investor sentiment has remained weak for most in this group since our January review, as signs of a stabilizing economy, along with difficult operating conditions, caused many on Wall Street to look outside this space for better growth potential. Indeed, the majority of the companies here reported disappointing December-earnings results due to inclement weather and the rising costs of doing business.

Although weather conditions ought to take on more normal patterns this year, and there seems to a more favorable regulatory landscape in place, the group still faces a stiff headwind looking ahead. The Environmental Protection Agency suggests that most water infrastructures are insufficient and are in need of significant repair, if not replacement. In fact, data reveals that nearly half of the water pipes currently in place will be classified as inadequate by the end of the decade, requiring major investment. Unfortunately, most providers do not have the finances to meet these commitments and will be forced to seek outside financing to stay afloat. The Industry, therefore, ranks near the bottom of the Value Line Investment Survey, with growth being limited by greater maintenance costs and the expenses associated with doing so.

Positive Industry Fundamentals

No matter how you slice it, water is one of the biggest necessities of human existence. It is used in virtually every aspect of life, providing the ultimate in job security for those who ensure its safe and effective delivery to fountains and faucets in millions of homes across the United States. And demand is only expected to increase in years to come, with the population likely to continue to grow.

With so much riding on the delivery of water, individual states have put regulatory bodies in place to oversee water utilities, and maintain a balance of power between them and customers. They are responsible for reviewing and ruling on general rate requests made by utilities to help recover costs. Although many of these authorities have tended to be public advocates in the past, the tide has turned more recently, with a more business-friendly approach being implemented of late. Indeed, general rate cases are coming back with more

Composite Statistics: Water Utility Industry												
13	2011	2010	2009	2008	2007	2006						
evenues (\$mill)	4650	4400	3921.8	3913.8	3702.5	3454.1						
et Profit (\$mill)	480	460	384.4	352.7	d183.0	d5.8						
come Tax Rate 3	39.0%	39.0%	38.7%	37.0%	NMF	NMF						
FUDC % to Net Profit 1	5.0%	3.0%	1.1%	1.5%	NMF	NMF						
ong-Term Debt Ratio 5	56.0%	56.5%	55.5%	52.6%	51.0%	54.0%						
ommon Equity Ratio 4	44.0%	43.5%	44.5%	47.4%	49.0%	45.9%						
otal Capital (\$mill) 1	14600	14050	13244.4	12629.1	12985.9	12113.9						
et Plant (\$mill) 1	17575	16925	15815.6	15356.1	14315.2	13308.3						
eturn on Total Cap'l	4.0%	4.5%	4.4%	4.3%	.2%	1.6%						
turn on Shr. Equity	6.0%	6.5%	6.5%	5.9%	NMF	NMF						
eturn on Com Equity	6.0%	6.5%	6.5%	5.9%	NMF	NMF						
etained to Com Eq	2.5%	2.5%	2.2%	2.9%	NMF	NMF						
Il Div'ds to Net Prof	58%	60%	66%	51%	NMF	NMF						
vg Ann'l P/E Ratio		D-14 E	18.9	21.0	NMF	NMF						
elative P/E Ratio	ures are e Line	Valu	1.26	1.26	NMF	NMF						
va Ann'l Div'd Yield	nates	esti	3.5%	2.4%	2.3%	2.0%						

INDUSTRY TIMELINESS: 92 (of 97)

favorable rulings and in a far more-timely manner. The implementation of accounting mechanisms, such as those layed out in the Water Action Plan, should continue to benefit the industry and provide more predictable future results.

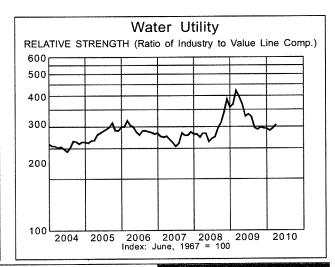
Troubling Costs

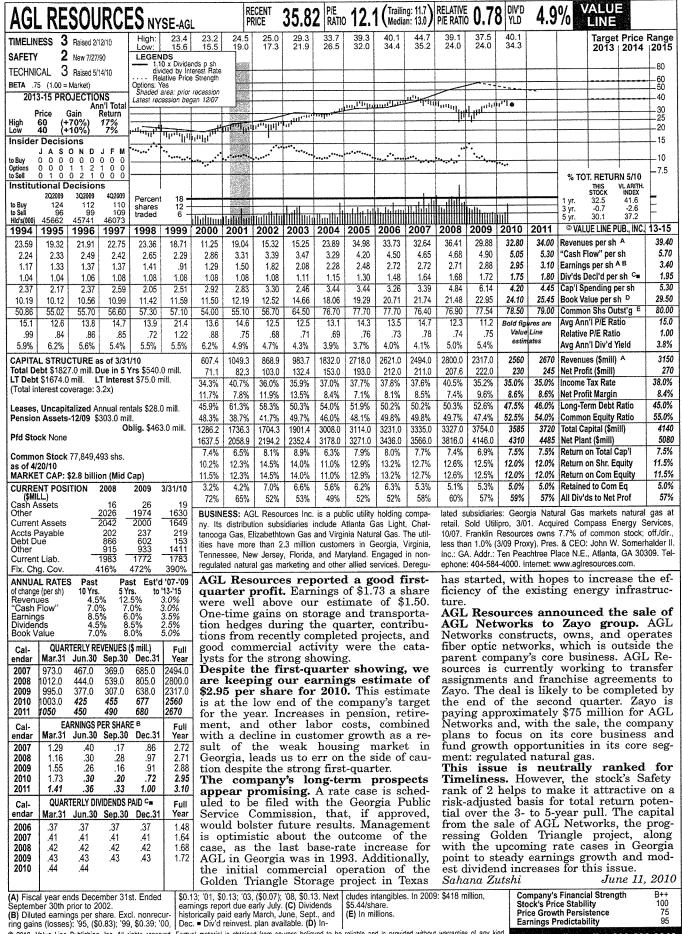
Despite the better regulatory environment, water providers have a difficult road ahead. Many of the current water systems were built decades ago and have grown outdated and require significant maintenance or complete overhauls. This, coupled with the growing threat of bioterrorism, ought to continue driving maintenance and infrastructure costs higher, forcing many cashstrapped companies to seek out financiers. Many smaller operations, meanwhile, unable to meet the capital requirements, are looking to get out. SouthWest Water, for example, has announced that it has accepted a buyout offer from a group of independent investors. As a result, it is likely nearing the end of its days in our Survey. This can be a boon to some of the larger players, such as Aqua America, which has used the consolidation trend as a way to build its business at a relatively low start-up cost. M&A activity ought to remain widespread.

Conclusion

Most investors will probably not want to dive into these waters. The majority of the stock's here lack appreciation potential for both the coming six to 12 months as well as the next 3 to 5 years. That said, Aqua America may pique the interest of some, as its aggressive acquisition strategy will help to drive industryleading growth out to 2013-2015. Meanwhile, we believe that investors may have a bit of false sense of security with this group. Although these stock's healthy dividends have historically provided some shelter during times of economic uncertainty, increasing costs and a dearth of finances may eventually catch up with entities operating in this space, resulting in tempered income generation. Either way, there are better income vehicles to be found elsewhere. As always, though, we suggest that investors look through reports of each individual stock before making a financial commitment.

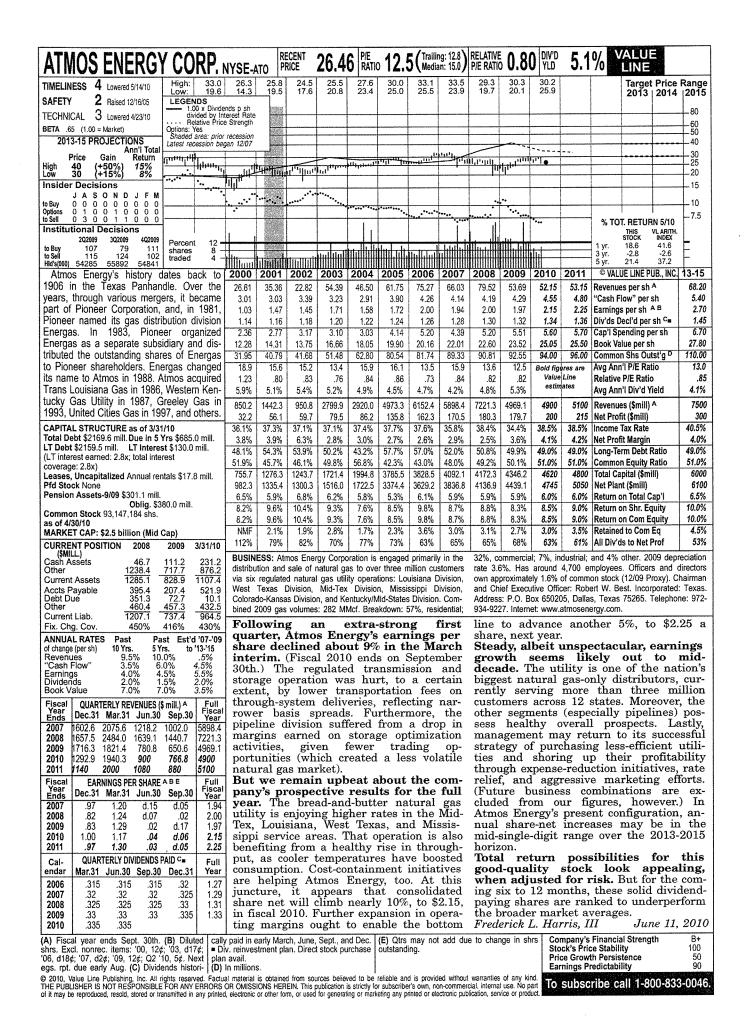
Andre J. Costanza

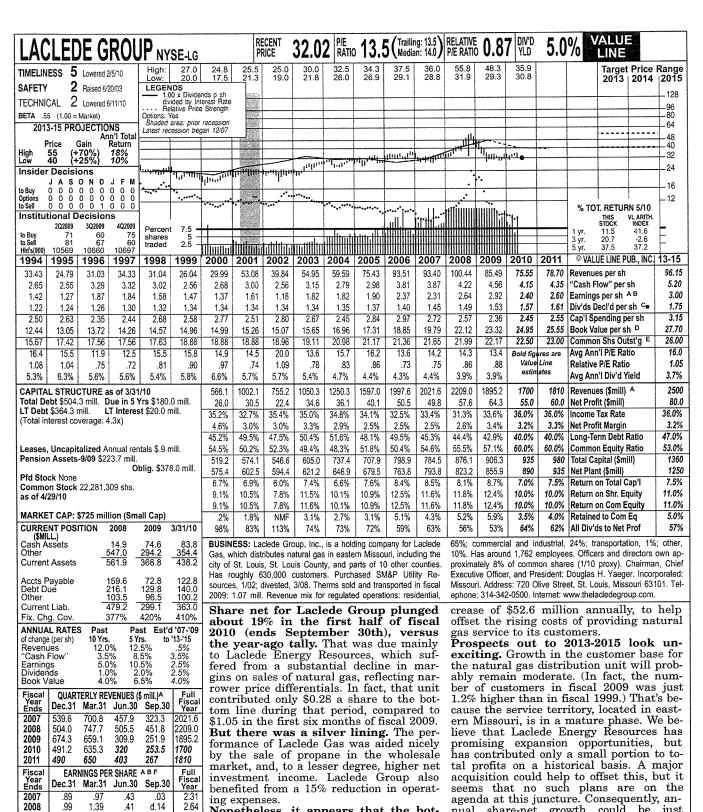




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1.39 .41 d.14 2.64 Nonetheless, it appears that the bot-1.40 .31 d.22 292 tom line for this year, as a whole, will .34 1.26 d.23 2 40 1.41 2.60 .41 d.22 QUARTERLY DIVIDENDS PAID C = Jun.30 Sep.30 Dec.31 Year .355 .355 .355 1.41 .365 .365 1.46 .375 .375 .375 1.50

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Fiscal year ends Sept. 30th. (A) Fiscal year ends Sept. Sour.
(B) Based on average shares outstanding thru.
'97, then diluted. Excludes nonrecurring loss:

The factorial and from discontinued operations.

.385

.385

fall between 15% and 20%. Improved results could be in store for the company in fiscal 2011, however, assuming a better showing from Laclede Energy Resources. As a result, share net may climb to \$2.60. Note that our presentation does not in-

clude a pending rate case in Missouri, in which the firm seeks a net revenue in-

ations: '08, 94¢. Next earnings report due late
July. (C) Dividends historically paid in early
January, April, July, and October. ■ Dividend
reinvestment plan available. (D) Incl. deferred

charges. In '09: \$488.3 mill., \$22.03/sh.

(E) In millions.

(F) Qtly. egs. may not sum due to rounding or change in shares outstanding.

These

(Lowest).

Frederick L. Harris, III

Company's Financial Strength B+ 100 Price Growth Persistence **Earnings Predictability**

nual share-net growth could be just

good-quality shares

limited total-return potential. That is

based partly on our assumption of moder-

ate future increases in the dividend, given

the utility's unexciting growth prospects.

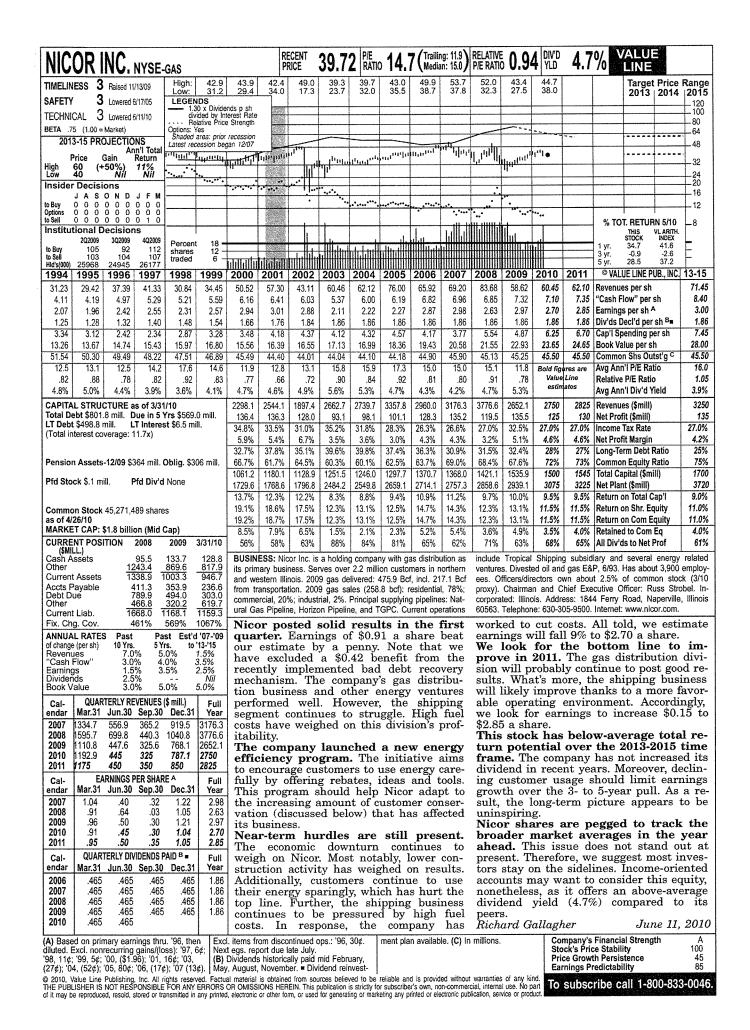
Meanwhile, the Timeliness rank is

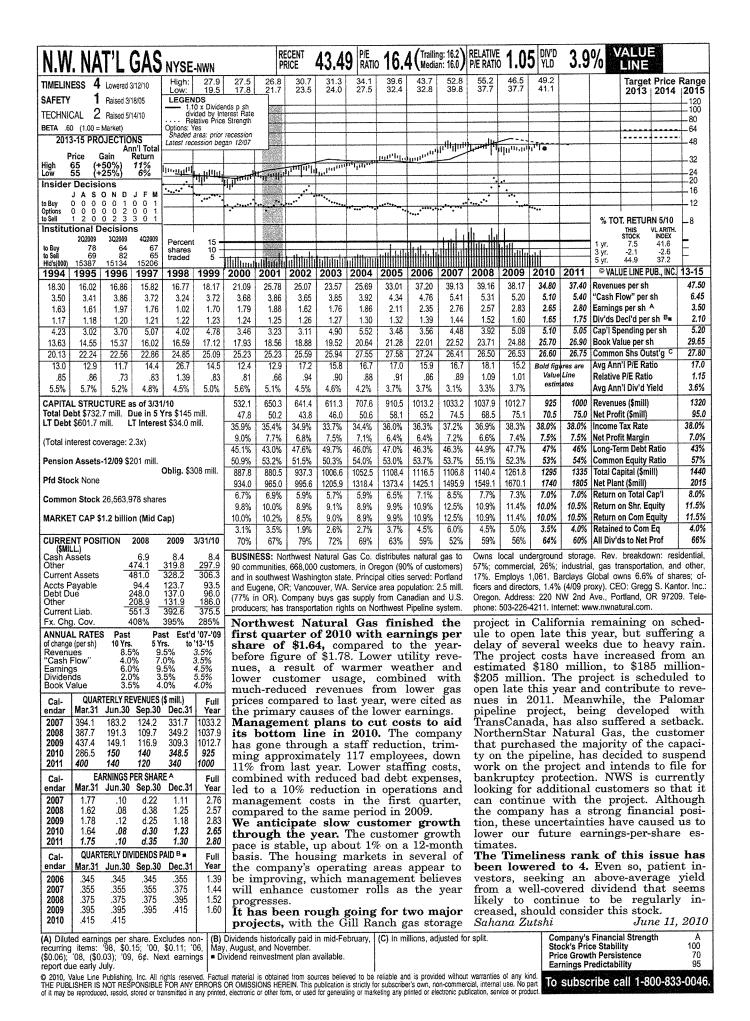
around 5% over the 3- to 5-year horizon.

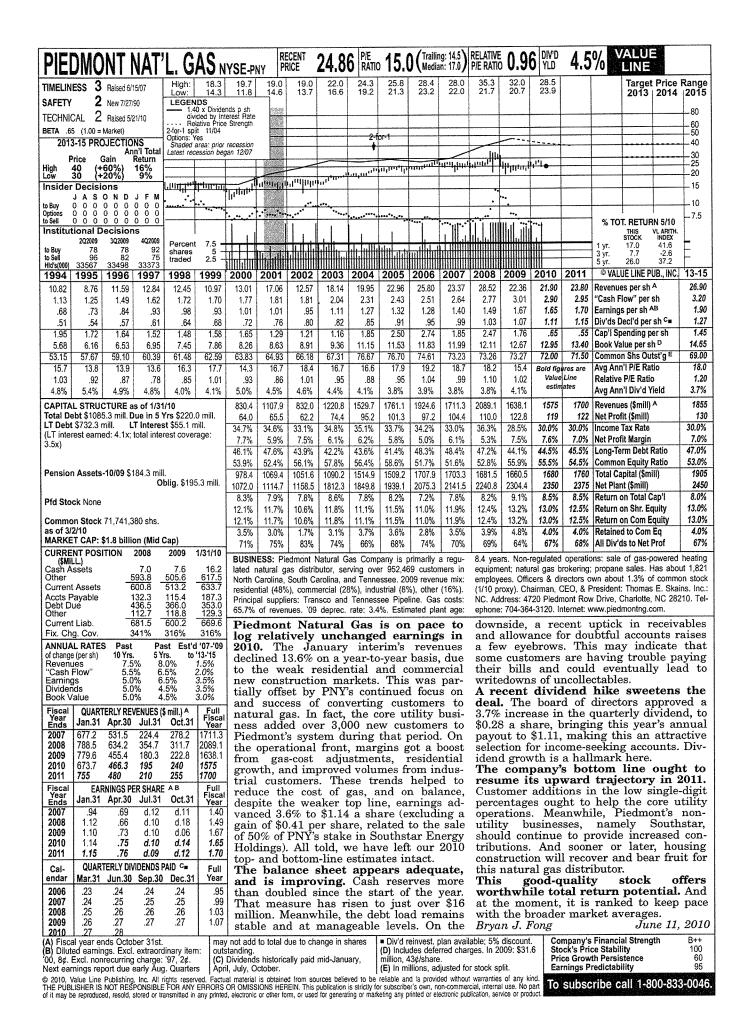
'06, 7¢. Excludes gain from discontinued oper-© 2010, Value Line Publishing, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HERRIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product June 11, 2010

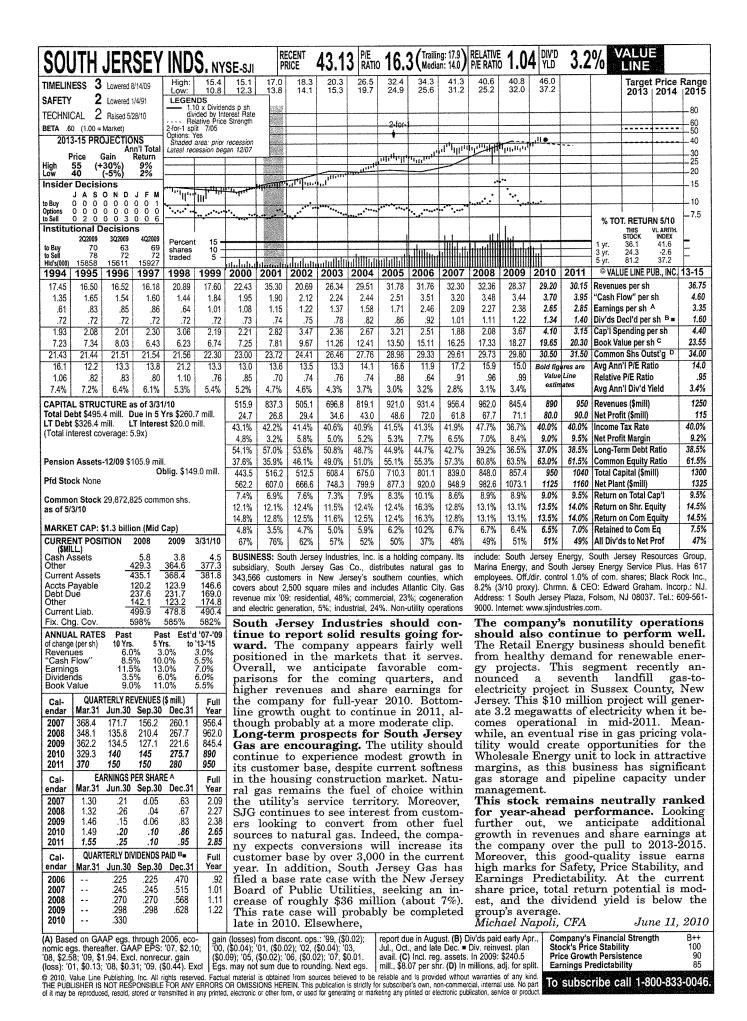
NEW JERSEY RES. NYSE-	ijr	RECE! PRICE	TV.	36.1	5 P/E RATIO	14.	3 (Trailir Media	ng: 15.1) in: 15.0)	RELATIVE P/E RATIO	0.8	8 DIV'D YLD	3.8	% \	ALUI LINE		
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SAFETY 1 Raised 9/15/06 LEGENDS	ends o sh	7												2012	2013	80
TECHNICAL 3 Raised 10/23/09 divided by I Relative Pri	nterest Rate be Strength	1 20														160
BETA .65 (1.00 = Market) 3.40r-2 spiit 3/02 3-40r-2 spiit 3/08 Options: Yes										3-for-2		~~,				+50 +40
Price Gain Return Latest recession be				3-for-2		17,111		11:11		1011111111	1 1111111	•	<u> </u>			30
High 45 (+25%) 9% Low 35 (-5%) 3%				шини	111,111,11	11111										20
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6.54 6.43 6.47 6.73 6.92 7.26	7.57	8.29	8.80	8.71	10.26	11.25	10.60	15.00	15.50	17.28	16.38	18.40	Book Va	lue per s	h D	25.10
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5.8% 6.2% 6.7% 5.6% 5.3% 4.6%	+		1.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%	3.5%		 	ı'l Div'd Y		3.8%
CAPITAL STRUCTURE as of 9/30/09 Total Debt \$605.4 mill. Due in 5 Yrs \$157.7 mill.	904.3 1	1	52.3	1830.8 56.8	2544.4 65.4	2533.6 71.6	3148.3 74.4	3299.6 78.5	3021.8 65.3	3816.2 113.9	2592.5	1	Revenu Net Pro		^	3550 125
LT Debt \$455.5 mill. LT Interest \$15.8 mill. Incl. \$9.9 mill. capitalized leases.	36.2%	37.8% 38	8.0%	38.7%	39.4%	39.1%	39.1%	38.9%	38.8%	37.8%	39.0%	39.0%	Income	Tax Rate		40.0%
(LT interest earned: 4.8x; total interest coverage: 4.8x)	5.0% 48.7%		2.6% 0.1%	3.1% 50.6%	2.6% 38.1%	2.8% 40.3%	2.4% 42.0%	2.4% 34.8%	37.3%	3.0%	3.9% 39.8%			it Margin rm Debt	Ratio	3.6% 33.5%
Pension Assets-9/08 \$100.6 mill.	51.2%	52.9% 49	9.9%	49.4%	61.9%	59.7%	58.0%	65.2%	62.7%	61.5%	60.2%	60.0%	Commo	n Equity	Ratio	66.5%
Oblig. \$133.8 mill. Pfd Stock None	1 1	3	706.2 743.9	732.4 756.4	676.8 852.6	783.8 880.4	755.3 905.1	954.0 934.9	1028.0	1182.1 1017.3	1145.2 1064.4	1	Total Ca		ill)	1705 1150
Common Stock 41,585,243 shs.	9.0%	9.0% 8	8.5%	8.7%	10.7%	10.1%	11.2%	9.6%	7.7%	10.7%	9.9%	9.5%	Return	on Total C	•	8.5%
as of 11/24/09 MARKET CAP: \$1.5 billion (Mid Cap)	1	1	4.8% 4.9%	15.7% 15.7%	15.6% 15.6%	15.3% 15.3%	17.0% 17.0%	12.6%	10.1%	15.7% 15.7%	14.8%	14.0%	1	on Shr. Ed on Com E		11.5% 11.5%
CURRENT POSITION 2007 2008 9/30/09	5.0%	5.4%	6.1%	6.9%	7.7%	7.8%	8.5%	6.3%	3.6%	9.5%	7.2%	6.5%	Retaine	d to Com	Eq	5.5%
(\$MILL) Cash Assets 5.1 42.6 36.2	67%		59%	56%	51%	49%	50%	50%	64%	40%	51%		All Div'd			54%
Other 794.8 1067.1 648.0 Current Assets 799.9 1109.7 684.2		SS: New . retail/who										ff-system ovides un				
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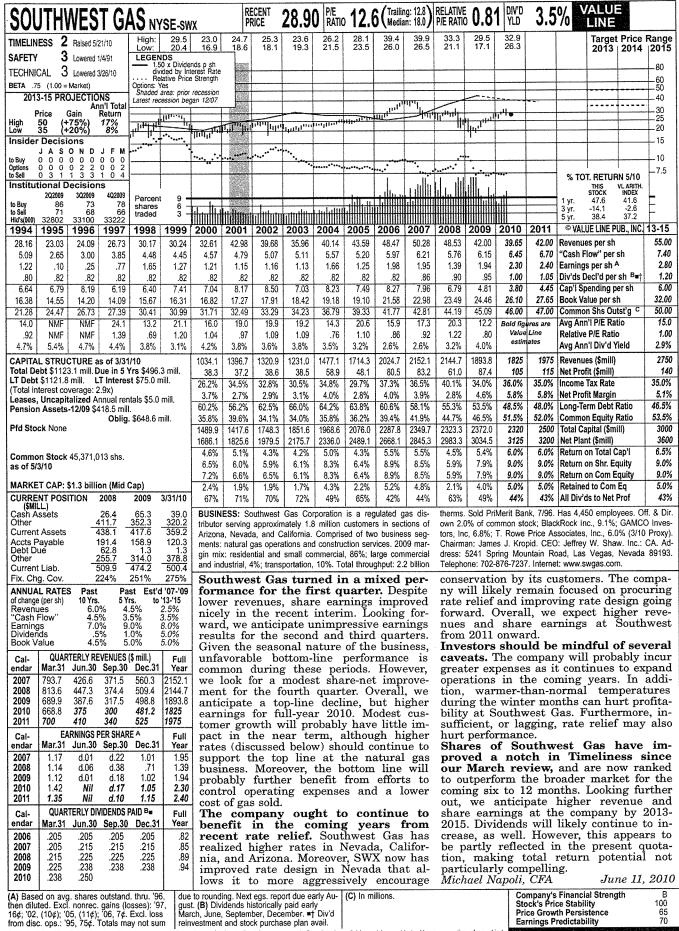
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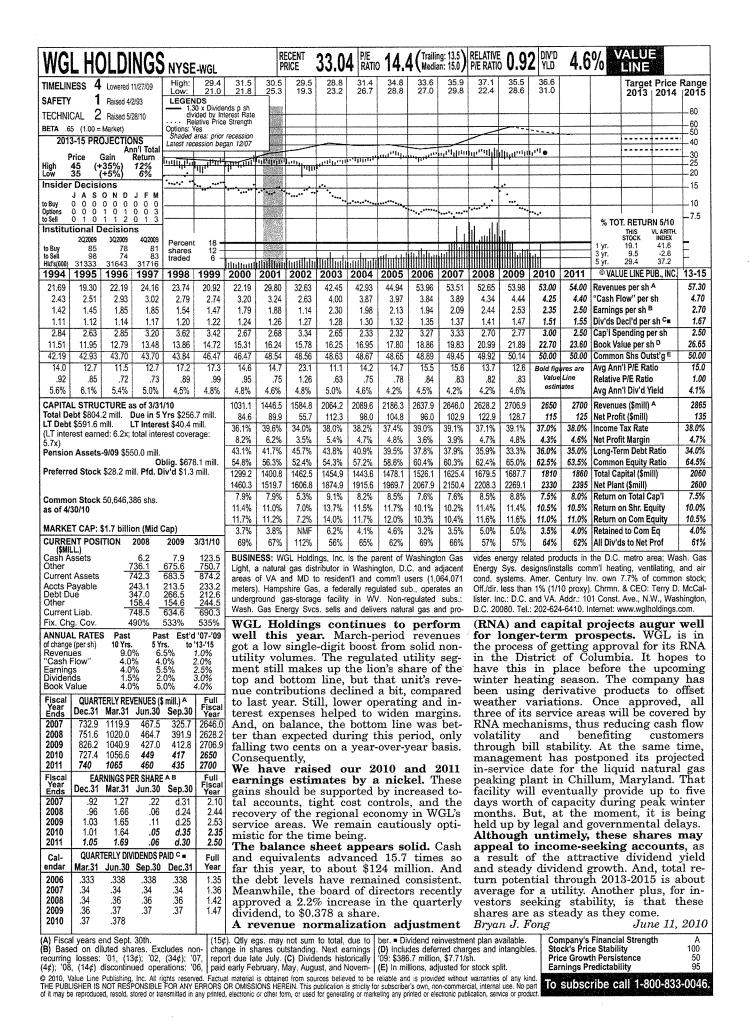






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Earnings Predictability



The Natural Gas Utility Industry has fallen to the bottom quartile of our Timeliness spectrum. These utilities are operating in a tough business environment due to low natural gas prices and customer conservation. Moreover, the economic recovery has led investors to turn to less conservative investments, which has hurt valuations across this group. All told, near-term prospects are widely unattractive. However, many issues in this sector still offer attractive dividend yields, which may be of interest to income-oriented investors.

Economic Environment

Improved investor confidence has caused the stock market to rally in recent months. As a result, investors have sought higher returns, which has adversely affected defensive sectors like the Natural Gas Utility Industry. What's more, this group has been facing a variety of challenges of late. Most notably, the weakness in the housing market continues to pressure usage for natural gas. This, coupled with customer conservation, has depressed demand across this sector. In response, many of these utilities have scaled back their capital spending to adjust to the difficult operating environment. Moreover, many have increased their marketing efforts in recent months in an effort to induce demand. All told, we expect the tough market conditions to continue to weigh on results in the near term.

Regulation

The regulatory environment in this sector remains crucial to this group's profitability over the long haul. These companies are regulated by state commissions that determine the return on equity these businesses can attain. For the most part, these utilities tend to post flat bottom-line results, year to year. Rate cases generally occur when operational costs pressure profitability. The outcome of these cases can have a meaningful impact on stock valuations because they have a heavy bearing on profitability. Thus, regulators try to strike a balance between shareholder and customer interests when rendering decisions. All told, interested investors should keep a close eye on pending rate cases when reading the following pages.

		Comp	osite S	tatistic	s: Natu	ıral Gas Utility	
2005	2006	2007	2008	2009	2010		12-14
36075	38273	38528	44207	45500	47000	Revenues (\$mill)	52750
1386.0	1553.3	1562.4	1694.2	1775	1850	Net Profit (\$mill)	2150
36.0%	35.3%	33.9%	35.7%	36.0%	36.0%	Income Tax Rate	36.0%
3.8%	4.0%	4.1%	3.8%	3.9%	3.9%	Net Profit Margin	4.1%
51.3%	51.2%	50.4%	50.6%	51.0%	51.0%	Long-Term Debt Ratio	52.0%
48.4%	48.7%	49.5%	49.4%	48.0%	48.0%	Common Equity Ratio	46.0%
29218	30847	32263	32729	33250	34750	Total Capital (\$mill)	40000
30894	32543	33936	35342	36750	38500	Net Plant (\$mill)	46250
6.5%	6.6%	6.5%	6.8%	6.5%	6.5%	Return on Total Cap'l	7.0%
9.7%	10.2%	9.8%	10.5%	10.0%	10.5%	Return on Shr. Equity	11.0%
9.8%	10.2%	9.8%	10.5%	10.0%	10.5%	Return on Com Equity	11.0%
3.5%	4.0%	3.7%	4.3%	4.0%	4.5%	Retained to Com Eq	5.0%
65%	61%	62%	59%	60%	62%	All Div'ds to Net Prof	65%
17.1	15.6	16.6	13.9	Bold file	ures are	Avg Ann'i P/E Ratio	13.0
.91	.84	.88	.83	Valu	e Line nates	Relative P/E Ratio	.85
3.8%	3.9%	3.7%	4.2%	esu	naies	Avg Ann'i Div'd Yield	4.6%
315%	327%	336%	358%	375%	375%	Fixed Charge Coverage	400%

INDUSTRY TIMELINESS: 79 (of 98)

Other Operating Factors

Many of the utilities have invested in nonregulated operations in recent years. While this makes up only a small portion of revenues for this sector, we expect it to become an increasingly important opportunity in the years ahead. Nonregulated activities are businesses that are free from the oversight of the aforementioned regulatory bodies. These ventures are generally more risky, but also offer greater potential for returns. Moreover, they provide a way for these companies to diversify their income.

Cost controls are another way these utilities use to strengthen their results. Given the regulatory oversight, earnings growth is restricted. Thus, effective cost management is one of the main methods these companies utilize to improve their profitability.

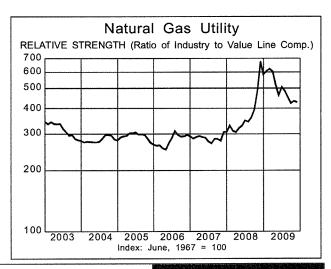
Another factor that weighs on this group is unseasonable weather. Warmer- or colder-than-normal weather can increase volatility for natural gas prices. To limit this risk, the management of these businesses sometimes use hedging techniques, namely weather-adjusted rate mechanisms. Thus, investors looking for utilities with more stable results will probably want to look for those that utilize this strategy.

Energy-efficiency programs are becoming an increasingly important theme, as well. Regulators have encouraged these companies to implement such programs to decrease energy consumption. Government-backed incentives allow these businesses to adopt these programs without sacrificing profitability.

Conclusion

The Natural Gas Utility Industry is not ranked favorably for year-ahead price performance. Investors interested in stock appreciation over the coming six to 12 months would probably do better to look elsewhere. However, income-oriented accounts may want to take a look at some of the stocks in the following pages. Indeed, numerous equities in this group offer rather attractive dividend yields.

Richard Gallagher



- 16. Refer to Direct Testimony of Dr. J. Randall Woolridge, Exhibit JRW-10 at
- 2. Provide the calculations used to derive in the dividend yields for Panels A and B. Indicate whether stock prices used in the calculations were highs, lows, means, or medians.

Response:

There were no calculations involved. The dividend yields are published monthly by AUS Utilities Reports. The stock prices that are used in the dividend yield are the midmonth stock price.

- 17. Refer to Direct Testimony of Dr. J. Randall Woolridge at 34-35 and Exhibit_JRW-10 at 3-5.
- a. Explain why blending the median values of ten- and five-year averages produces a meaningful estimate of growth rates.
- b. Explain why blending projected estimates of earnings, dividends, and book value growth rates into a single number provides a meaningful estimate of growth rates.

Response:

- a. Dr. Woolridge uses the five- and ten- years historic growth rates to identify a historic baseline growth rate. Dr. Woolridge believes that this is important since the vast majority of data provided to investors is historic data. Dr. Woolridge uses the median since extremely high or low observations can distort the mean as a measure of central tendency.
- b. Two reasons. First, according to the DCF model, dividends, earnings and book value all grow at the same rate of growth. Therefore, all three are relevant in gauging expected growth in the DCF model. Second, whereas earnings growth gets most of the attention from investors, earnings growth can be volatile over time. In time of earnings volatility, dividends and book value can provide a better indication of potential growth.

- 18. Refer to Direct Testimony of Dr. J. Randall Woolridge at 47-48 and Exhibit_JRW-11 at 6.
 - a. Provide a copy of each study listed in the Exhibit on page 6.
- b. Explain why it is appropriate to use geometric means in calculating equity risk premiums in the context of this case
- c. Explain why averaging geometric and arithmetic means produces a meaningful estimate in the context of this case.
- d. State whether the most recent Ibbotson SBBI yearbook contains any discussion of estimating and using the ex ante approaches or a discussion comparing the ex ante and historical approaches to calculating risk premiums. If yes, provide a copy of those sections of the yearbook in which those discussions appear.

RESPONSE:

- a. Please see the attached documents.
- b. Dr. Woolridge discusses why it is appropriate to use geometric means his testimony at pages 78-79. The use of the geometric mean return is also supported in the following excerpt from Campbell, Diamond, and Shoven (*Estimating the Real Return on Stocks over the Long Term*, Presented to the Social Security Advisory Board August 2001, pp. 3-4). Please see the attached documents.

Perhaps the simplest way to forecast future returns is to use some average of past returns. Very naturally, this method has been favored by many investors and analysts. However there are several difficulties with it.

Geometric average or arithmetic average? The geometric average return is the cumulative past return on U.S. equities, annualized. Siegel (1998) studies long-term historical data on value-weighted U.S. share indexes. He reports a geometric average of 7.0% over two different sample periods, 1802-1997 and 1871-1997. The arithmetic average return is the average of one-year past returns on U.S. equities. It is considerably higher than the geometric average return, 8.5% over 1802-1997 and 8.7% over 1871-1997.

When returns are serially uncorrelated, the arithmetic average represents the best forecast of future return in any randomly selected future year. For long holding periods, the best forecast is the arithmetic average compounded up appropriately. If one is making a 75-year forecast, for example, one should forecast a cumulative return of 1.08575 based on 1802-1997 data.

When returns are negatively serially correlated, however, the arithmetic average is not necessarily superior as a forecast of long-term future returns. To understand this, consider an extreme example in which prices alternate deterministically between 100 and 150. The return is 50% when prices rise, and -33% when prices fall. Over any even number of periods, the geometric average return is zero, but the arithmetic average return is 8.5%. In this case the arithmetic average return is misleading because it fails to take account of the fact that high returns always multiply a low initial price of 100, while low returns always multiply a high initial price of 150. The geometric average is a better indication of long-term future prospects in this example.

This point is not just a theoretical curiosity, because in the historical data summarized by Siegel, there is strong evidence that the stock market is mean-reverting. That is, periods of high returns tend to be followed by periods of lower returns. This suggests that the arithmetic average return probably overstates expected future returns over long periods.

c. The use of arithmetic versus geometric means returns has always been subject to debate. Dr. Woolridge uses both. The justification for using both measures of central tendency comes from Brad Cornell entitled The Equity Risk Premium (John Wiley & Sons, 1999). Please see the attached documents. With respect to the choice of arithmetic versus geometric mean, Cornell makes the following observations (p. 38):

Which average is the more appropriate choice? That depends on the question being asked. Assuming that the returns being averaged are largely independent and that the future is like the past, the best estimate of expected returns over a given future holding period is the arithmetic average of past returns over the same holding period. For instance, if the goal is to estimate future stock-market returns on a year-by-year basis, the appropriate average is the annual arithmetic risk premium. On the other hand, if the goal is to estimate what the average equity risk premium will be over the next 50 years, the geometric average is a better choice. Because the ultimate goal in this book is to arrive at reasonable forward-looking estimates of the

equity risk premium, both arithmetic and geometric averages are employed where they are useful.

It is worth reiterating that projection of any past average is based on the implicit assumption that the future will be like the past. If the assumption is not reasonable, both the arithmetic and geometric averages will tend to be misleading.

d. Yes; please see the attached documents.

19. Refer to Direct Testimony of Dr. J. Randall Woolridge, Exhibit_JRW-11 at 11. Provide a copy of the Table "Kentucky-American Water Company - CAPM - Real S&P 500 ESP Growth Rate" in Excel spreadsheet form with all formulas intact and unprotected.

RESPONSE: The requested file is provided in electronic format through the enclosed CD.

- 20. Table 1, which is appended to this Request, reflects annual depreciation expense for the Kentucky River Station II facilities based upon the current estimated construction costs using the depreciation rates contained in a net present-value analysis that Kentucky-American submitted in Case No. 2007-00134⁶ and those in a depreciation study that Kentucky-American has presented in this proceeding.
- a. State whether Mr. Smith agrees with the calculations set forth in Table 1. If no, explain why not.
- b. State the weight, if any, that should be given to the depreciation rates used in Case No. 2007-00134 in assessing the appropriateness and reasonableness of Kentucky-American's proposal to use the remaining life depreciation rates for the existing plant to calculate the depreciation expense for the new Kentucky River Station II facilities. Explain.

RESPONSE:

Notice: The OAG is not clear as to what is being requested, nonetheless, it submits the following:

a. If the request is asking Mr. Smith to check the calculations set forth in the Table, he agrees that the amounts in Col.C = Col.A x Col.B, and the amounts in Col. E = Col.A x Col.D and that the totals listed there sum to the amounts shown, as verified below:

⁶ Case No. 2007-00134, The Application of Kentucky-American Water Company for a Certificate of Convenience and Necessity Authorizing the Construction of Kentucky River Station II, Associated Facilities and Transmission Main. Response filed Dec. 10, 2007.

Depreciation Group Est. Cost Dep. Rate Dep. Exp. Dep. Rate Dep. Exp. (Doctored (A) (B) (C) = AxB (D) (E)=AxD (F) = E-IxBx Lake, River and Other Intakes \$5,648,952 2.29% \$129,361 2.05% \$115,804 (\$13,55) Raw Water Pumping Station: Structure \$13,819,059 1.94% 268,090 2.85% 393,843 \$125,7 Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362							Difference
(A) (B) (C) = AxB (D) (E)=AxD (F) = E-Izera Lake, River and Other Intakes \$5,648,952 2.29% \$129,361 2.05% \$115,804 (\$13,5 Raw Water Pumping Station: Structure \$13,819,059 1.94% 268,090 2.85% 393,843 \$125,7 Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1,66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1		Case	No. 2007-001	34	Revise	d W/P4-1	Increase
Lake, River and Other Intakes \$5,648,952 2.29% \$129,361 2.05% \$115,804 (\$13,5 Raw Water Pumping Station: Structure \$13,819,059 1.94% 268,090 2.85% 393,843 \$125,7 Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains) \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Seption Seption \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Seption Seption Seption Seption Seption Seption Seption Water Pumping Station \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Seption Septi	Depreciation Group	Est. Cost	Dep. Rate	Dep. Exp.	Dep. Rate	Dep. Exp.	(Decrease)
Raw Water Pumping Station: Structure \$13,819,059 1.94% 268,090 2.85% 393,843 \$125,7 Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Equipment Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738		(A)	(B)	(C) = AxB	(D)	(E)=AxD	(F) = E-C
Structure \$13,819,059 1.94% 268,090 2.85% 393,843 \$125,7 Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Equipment Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Lake, River and Other Intakes	\$5,648,952	2.29%	\$129,361	2.05%	\$115,804	(\$13,557)
Electric Pumping Equipment \$2,239,867 2.45% 54,877 2.25% 50,397 (\$4,4 Supply Mains Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Supply Mains Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Supply Mains Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Supply Mains Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Supply Mains) Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Raw Water Pumping Station:						
Supply Mains \$657,044 1.82% 11,958 2.20% 14,455 \$2,4 Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Structure	\$13,819,059	1.94%	268,090	2.85%	393,843	\$125,753
Water Treatment Plant Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Electric Pumping Equipment	\$2,239,867	2.45%	54,877	2.25%	50,397	(\$4,480)
Structure \$36,152,863 1.91% 690,520 2.95% 1,066,509 \$375,9 Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Supply Mains	\$657,044	1.82%	11,958	2.20%	14,455	\$2,497
Equipment \$18,659,215 2.21% 412,369 2.51% 468,346 \$55,9 Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5 Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Water Treatment Plant						
Electric Pumping Equipment \$3,286,961 2.45% 80,531 2.25% 73,957 (\$6,5) Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Structure	\$36,152,863	1.91%	690,520	2.95%	1,066,509	\$375,989
Finished Water Main \$67,551,898 1.66% 1,121,362 1.66% 1,121,362 Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Equipment	\$18,659,215	2.21%	412,369	2.51%	468,346	\$55,977
Transmission Storage \$2,325,750 2.25% 52,329 2.03% 47,213 (\$5,1 Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Electric Pumping Equipment	\$3,286,961	2.45%	80,531	2.25%	73,957	(\$6,574)
Transmission Water Pumping Station Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Finished Water Main	\$67,551,898	1.66%	1,121,362	1.66%	1,121,362	\$0
Structure \$5,989,814 1.94% 116,202 2.85% 170,710 \$54,5 Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Transmission Storage	\$2,325,750	2.25%	52,329	2.03%	47,213	(\$5,116)
Electric Pumping Equipment \$2,299,447 2.45% 56,336 2.25% 51,738 (\$4,5	Transmission Water Pumping Station						
	Structure	\$5,989,814	1.94%	116,202	2.85%	170,710	\$54,508
7.1.1	Electric Pumping Equipment	\$2,299,447	2.45%	56,336	2.25%	51,738	(\$4,598)
Totals \$158,630,870 \$2,993,935 \$3,574,334 \$580,3	Totals	\$158,630,870		\$2,993,935		\$3,574,334	\$580,399

A column F has been added to Staff's Table 1 to show the differences by component between columns E and B.

b. Determining the weight of evidence as it impacts upon changed depreciation rates, is a matter for the Commission's consideration in the current KAWC rate case. The depreciation rates from Case No. 2007-00134 cited by Staff in the referenced Table 1 provide one point of reference. In comparison with those depreciation rates, the significant increases in the following four accounts would appear to be of primary concern: Raw Water Pumping Station: Structure, Water Treatment Plant Structure, Water Treatment Plant Equipment, and Transmission Water Pumping Station Structure.