
WORKING CASH STUDY
for
TEST YEAR 2005

JULY 2004

WORKING CASH ANALYSIS

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WORKING CASH ANALYSIS

1. SUMMARY

This study estimates Gazifere's working cash requirement for fiscal 2005.

The approach used in this analysis is consistent with the Régie's findings in the 2004 Rate Case (R-3514-2003, D-2004-48). The actual lag days approved in the 2003 Regulatory Closing of the Books were reviewed and used as the benchmark in determining lag days for revenues, gas costs, O&M expenses and taxes in the Test Year. Fiscal 2003 lag days were chosen as the point of reference since they represent the most recent historical results, and no significant changes in payment patterns have occurred or are anticipated to occur in the Test Year.

The net lag days, expense lags minus revenue lags, were then applied to the forecasted level of fiscal 2005 expenses to determine the overall working cash requirement for the Test Year.

The estimated working cash requirement for fiscal 2005 is \$849.3 thousand, as outlined in Exhibit GI-8, Document 2. This amount includes the impact of the Goods and Services Tax ("GST"), Québec Sales Tax ("QST"), and Uncollectibles. This represents an increase of \$595.8 thousand in the working cash requirement compared to the 2004 Rate Case Decision.

The working cash levels approved for the last five years are listed below:

Test Year	Working Cash (in '000s)
2004	\$253.5
2003	Not Filed
2002	\$916.0
2001	\$998.0
2000	\$687.0

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Figure 1 compares the lag days that give rise to the change in working cash requirement from that approved in fiscal 2004.

Figure 1		
<u>LAG DAYS</u>		
	Col. 1	Col. 2
	<u>D-2004-48</u>	<u>PROPOSED</u>
Revenues	40.9	43.6
Gas Costs	35.8	35.4
O&M	19.9	22.2
Taxes	(52.3)	(65.0)
Income Taxes	15.2	15.2

2. WORKING CASH AS A COST OF SERVICE

Working cash is a component of the working capital. It is used by the Company to pay for provision of goods and services prior to the receipt of revenues from customers.

In Québec, original cost rate base is employed for rate making purposes. The original cost rate base represents the amount of investor-supplied capital which has been invested in property plant and equipment that is used or useful in rendering utility service. A component of that rate base is the working capital.

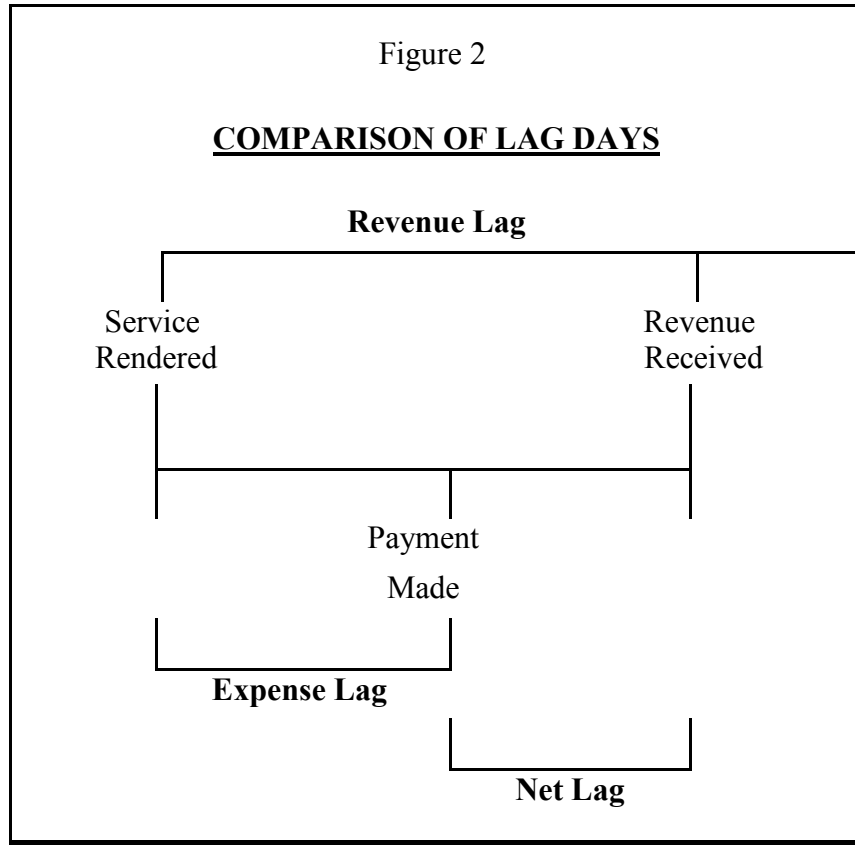
THEORETICAL APPROACH TO THE ANALYSIS

In most utility operations, sales are made to customers on credit terms. Service is received by a customer prior to being billed for the service. Thus, a utility incurs the cost of providing service in advance of the receipt of payment. On the other hand, a utility is often provided certain services

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on credit terms, which provides operating funds to the business. Working cash is the difference between funds required and funds available.

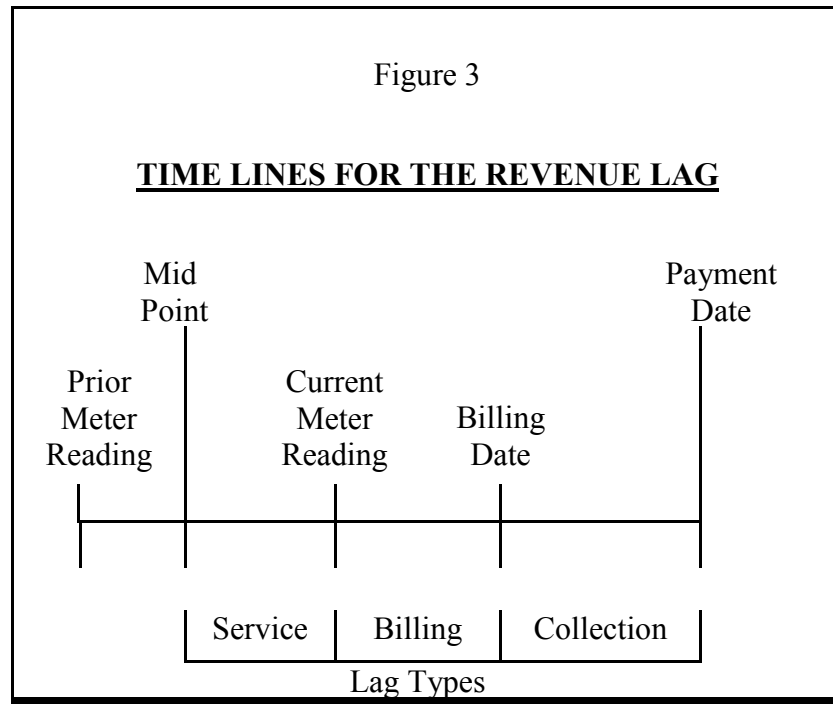
Figure 2 illustrates working cash requirement by use of a time line drawing. In this figure, the revenue lag, expense lag, and net lag are compared. Both, the revenue lag and expense lag are measured from the time a service is rendered.



Services rendered could include installation of a service line and meter, which is a one day event, or delivery of gas, which is measured over a period of time, typically one month. As seen in the figure, the revenue lag ends when payment is made to the Company, and the expense lag ends when the Company makes payment for the provision of service. The net lag is the difference between these two lags, and is the period for which working cash is required. Illustrated is a positive lag, indicating that the working cash is provided by the suppliers of capital. A negative lag could also occur, where services, such as consulting fees are paid after revenues are received.

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Figure 3 illustrates the components of the revenue lag. This figure uses time lines to illustrate some important dates:



Meter reading: On this date two important events occur. The past service period ends and the new service period begins. The differences between the prior read and the current read measures the volumes delivered over that time period.

Billing date: This is the date the bill is posted as a receivable and sent to the customer.

Payment date: This is the date that the payment is credited to the customer's account.

The service period is defined as the period between the prior meter reading and the current meter reading. This is, on average, 1/12th of a year. The *service lag* is measured from the mid-point of the service period to the reading date. The time from the meter reading to the billing date is called

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the *billing lag* and can be measured from Company records. The time from the billing date until the payment date is also measurable and is called the *collection lag*. The total *revenue lag* is from the mid-point of the service period to the payment date.

The expense lag, on the other hand, is determined by examining the Company's cheque vouchers for different expense components, and determining the expense lag by references to the date a service was provided to the Company, and the date that service was settled by payment. The difference in dates is the expense lag.

The development of the lags accounts for the different levels of expenses and revenues that occur in a fiscal year. As a result, the working cash represents the expected average annual level of funds required for a particular year as well as reflecting the time value of money.

Therefore, in estimating the respective lags, dollar weighted days are used. This recognizes that simple interest on one dollar for two days is the same as on two dollars for one day.

In the final step, the analysis nets all expense lags with revenue lags to determine the overall working cash requirement. It does so by analyzing Company records for one year, usually the most recent fiscal year, and adjusts, where necessary, to take into account any expected changes that might increase or decrease a particular lag.

4. ANALYSIS

4.1 REVENUE LAG

The revenue lag is calculated by analyzing the three lags illustrated in Figure 3; the service lag, the billing lag, and the collection lag.

The service lag is a simple mathematical expression;

$$365 \div 12 \div 2 = 15.2 \text{ days.}$$

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The service lag is measured from the midpoint of the service period to the meter reading date. This is, on average, 1/24th of a year, or 15.2 days. The time from the meter reading to the billing date represents the billing lag, while the time lag from the billing date until payments are received from customers corresponds to the collection lag. The billing lag is derived from the extraction of data from the billing system. The collection lag is determined by dividing the sum of the daily accounts receivable for the year by the sum of the daily total billings for the same period.

Figure 4

**REVENUE LAG
FISCAL 2003
(Lag Days)**

Item No.		Col. 1 <u>General Service</u>	Col. 2 <u>Large Volume</u>	Col. 3 <u>Total</u>
1.	Service Lag	15.2	15.2	15.2
2.	Billing Lag	3.8	7.1	4.4
3.	Collection Lag	<u>25.0</u>	<u>18.7</u>	<u>24.0</u>
4.	Total Lag	44.0	41.0	43.6

Figure 4 provides lag day analysis results.

4.2 EXPENSE LAG

Considering the number of transactions under the expense category, not all transactions can be analyzed for lag days. For the most significant cost items, the entire population of transactions is analyzed for lag days while random sampling is used for the other remaining costs. The expense categories that had all transactions analyzed for lag days included:

- Gas supply expenses,
- Labour expenses,
- Labour related expenses, and
- Insurance expenses.

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The remainder of the expenses were treated as one item and analyzed using a random sample of expense vouchers.

FIGURE 5
GAZIFERE INC.
COMPUTATION OF DISBURSEMENT LAG
GAS COSTS AND O&M EXPENSE
FISCAL 2005

Item No.	Col. 1 <u>Forecasted Costs</u> (\$000)	Col. 2 <u>Disbursement Lag Days</u>	Col. 3 <u>Weighted Dollar Days</u> (\$000)	Col. 4 <u>Reference</u>	
GAS PURCHASE COSTS					
1.	Total Gas Purchase Costs	42,356.7	35.4	1,499,427.2	Appendix A1
OPERATING AND MAINTENANCE EXPENSE					
2.1	Labour, Success Sharing, Recreation & Education Refund	2,430.1	11.6	28,202.6	Appendix B1
EMPLOYEE BENEFITS					
2.2.1	Unemployment Insurance	54.0	13.8	744.5	Appendix C1
2.2.2	Québec Pension	102.4	19.1	1,959.0	Appendix C2
2.2.3	Workmen's Compensation	22.1	(7.2)	(158.5)	Appendix C3
2.2.4	Group Insurance	7.8	41.7	326.0	Appendix C4
2.2.5	Québec Health Insurance	133.5	18.9	2,522.3	Appendix C5
2.2.6	Dental/Health Insurance	125.5	35.8	4,491.1	Appendix C6
2.2.7	Retirement Plan	75.6	44.5	3,362.3	Appendix C7
2.2.8	Stock Purchase & Savings Plan	32.4	13.3	430.4	Appendix C8
2.2.9	Long Term Disability	11.4	34.8	396.7	Appendix C9
		0.0			
2.3	Insurance	82.0	(66.4)	(5,441.4)	Appendix D1
2.4	Voucher Analysis	3,194.8	32.0	102,234.3	D-95-66
2.	TOTAL OPERATING AND MAINTENANCE EXPENSE	6,271.6	22.2 a/	139,069.5	

a/ Total Column 3 divided by Total Column 1.

4.2.1. GAS COSTS

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The gas supply expense lag was determined by individual voucher analysis of actual fiscal 2003 Rate 200 transactions. This analysis contained late gas costs payments from October 2002 to January 2003 and in July 2003 as compared to the regular payment schedule on the 20th of the month. The payment dates for these periods were adjusted to the 20th of the month since these payment events were unusual and are unlikely to recur in fiscal 2005. The lag days were then applied to fiscal 2003 gas cost transactions. The calculated gas cost lag of 35.4 days, which includes adjustments discussed above, accurately reflects the anticipated fiscal 2005 gas cost lag day. The result is also reasonable when compared with the approved gas cost lag day of 35.8 days as presented in the 2004 Rate Case (R-3514-2003, D2004-48). The dollar weighted lag for gas costs is developed in Appendix A1.

4.2.2 O&M EXPENSES

The O&M costs were grouped into a number of categories due to either their similarities or levels of cost. These categories are labour, labour related, insurance and voucher analysis expenses. An analysis was conducted to determine whether changes in payment patterns have occurred or not. Since no significant changes have occurred or are anticipated to occur, the lag days filed in R-3464-2001 were used.

A voucher analysis of actual fiscal 2000 transactions was performed and a dollar-weighted lag was developed for the following expense accounts:

- Labour,
- Unemployment insurance,
- Québec pension,
- Worker's compensation,
- Group insurance,
- Québec health insurance,
- Health insurance,
- Dental insurance,
- Pension plan,
- Savings plan,
- Long-term disability, and
- Insurance.

The results can be seen in Appendix B1 through D1. The payment patterns remain unchanged for the voucher analysis and hence were not updated.

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4.3 TAXES

A voucher analysis of actual fiscal 2003 transactions was undertaken for the municipal taxes, capital tax, the Régie de l'énergie dues, and Régie du bâtiment dues. The analysis showed that an early payment, one month in advance of the due date, of municipal taxes was made on February 7, 2003.

To more accurately reflect the anticipated fiscal 2005 municipal payment lag day the above payment was adjusted to March 7, 2003 for lag day calculation. The lag days were then applied to fiscal 2003 municipal taxes. The dollar weighted lags for taxes are developed in Appendix E1.1 through E1.4.

FIGURE 6						
GAZIFERE INC.						
ANALYSIS OF TAXES						
FISCAL 2005						

		Col. 1	Col. 2	Col. 3	Col. 4	
Item No.		Amount	Disbursement Lag Days	Weighted Dollar Days	a/	Reference
		(\$)		(\$)		
1.1	Municipal Taxes	496,000	(134.1)	(66,521,373.3)		Appendix E1.1
1.2	Capital Taxes	351,000	14.9	5,229,900.0		Appendix E1.2
1.3	Régie de l'énergie dues	24,700	11.9	293,930.0		Appendix E1.3
1.4	Régie du bâtiment dues	42,700	35.7	1,524,390.0		Appendix E1.4
1.	Tax Liability	<u>914,400</u>	<u>(65.0)</u> b/	<u>(59,473,153)</u>		
a/ Column 1 multiplied by Column 2.						
b/ Total Column 3 divided by Total Column 1.						

4.4 INCOME TAXES

The income taxes expense lag was deemed to be 15.2 days or 1/24th of a year. This approach recognizes that installments are paid monthly to the Government.

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5. WORKING CASH REQUIREMENTS FOR THE GOODS AND SERVICES TAXES

5.1 SUMMARY

The 7% GST must be paid on specific items. A refund for those payments is collected from the Federal Government. Likewise, the GST is collected on services rendered to customers, and is remitted to the Government. The differences in the levels and timing of the taxes paid and collected impacts the working cash requirement of the Company. For 2005 this results in a \$5.2 thousand dollar decrease in the working cash requirements of the Company.

Following the May 13, 1994 Québec provincial budget, a single rate of 6.5% for QST was adopted. Effective January 1, 1998, this rate went up to 7.5%. This tax applies to essentially the same tax base for purchases made in Québec as the GST, and also applies to the total costs incurred, including the GST. The net combined GST and QST are remitted/collected to/from the Québec Government on a similar basis that is in effect for the GST. A difference in treatment arises when the Company is entitled to a refund that was created by its net position on QST. However, the two taxes can be basically considered as one combined tax in most situations. For 2005, the QST results in a \$6.0 thousand decrease to the working cash requirements.

5.2 THEORETICAL FRAMEWORK

The individual models for GST and QST developed for R-3203-91 were used but have been integrated to reflect the combined GST and QST. The model is detailed in Appendix F1. It determines the impacts on working cash arising from the respective taxes by simulating the actual levels and timing of GST and QST activities. Two estimations are required for the model;

- The GST and QST tax base level, and
- The tax lags for related revenues and expenses.

The GST and QST tax levels are estimated by applying their respective tax rates to:

- revenues,
- O&M expenses excluding labour, and
- capital expenditures.

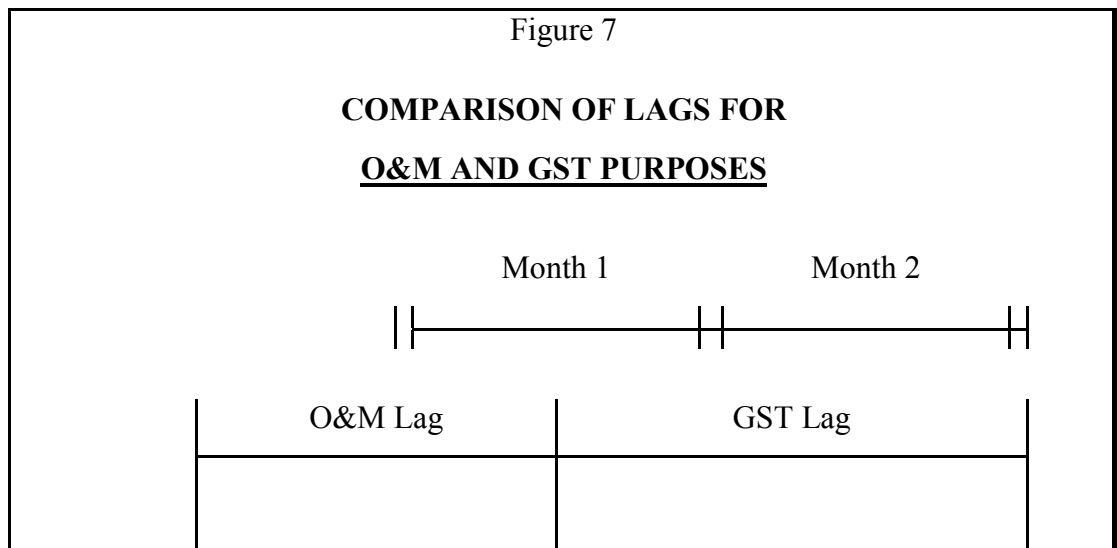
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The QST does not apply to inter-provincial transactions while GST does not apply to transactions between Gazifère, Enbridge Gas Distribution and [Enbridge Inc.](#)

The tax acts are specific about the time period for which taxes are collected/paid and for determining when to settle with both levels of Government. Specifically, the tax liability arises on the invoice date, thereby determining the month for which taxes are to apply. Revenues are forecast based on meter reading dates. An adjustment must be made to the revenues, if the billing month does not completely coincide with the tax month. Figure 4 indicates that it will take, on average, 4.4 days from reading to billing. Therefore any meter reading preceding the end of the month by four and a half days will be billed in the following month. As an example, a reading on June 27th would be posted on July 1st creating tax revenue for the month of July, not June. The forecasted revenues are therefore accordingly adjusted.

The gas supply related expenses, O&M expenses and capital expenditures are budgeted in the appropriate time period for tax purposes and require no adjustment.

Figure 7 illustrates that the lags for tax purposes are not the same as for standard working cash purposes. The analysis of the lags for revenue and O&M are measured from the service period to the time the service was paid as illustrated in Figure 2. The appropriate lag for GST and QST purposes starts when the payment is made and ends when the Government and the Company settle.



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Service Date	Payment Date	Settlement Date
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For taxes collected, for both GST and QST, the settlement is on the last day of the month following the month in which the tax liability was incurred. This is illustrated in Figure 7. As an example, taxes invoiced for collection in June are to be remitted on July 31.

For GST taxes paid, the settlement takes an additional 21 days over the allowed time for collected taxes. That is, for taxes invoiced for payment in June, the Federal Government will settle by August 21. For QST taxes paid, the settlement is extended to 31 days over the allowed time for collected taxes. Therefore for taxes invoiced for payment in June, the Provincial Government will settle by August 31.

In practical terms, only the net of paid and collected for both GST and QST will be settled for each month. The determination of the working cash for GST/QST follows this framework.

5.3 WORKING CASH REQUIREMENT CALCULATION ARISING FROM THE GST/QST

The detailed monthly calculation for the GST and QST can be found in Appendix F1. As an illustration of the detailed calculation, Figure 8 is an extract from Appendix F1 and shows the computation of the average cash impact from revenues only for the GST and QST, for the months of July to September 2005.

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Figure 8
ILLUSTRATION OF THE WORKING CASH
EFFECT ARISING FROM REVENUES

Item No.	Col.1	Col. 2	Col. 3	Col. 13
	<u>July</u>	<u>August</u>	<u>September</u>	<u>Total</u>
1. Revenue (\$000)	(2,649.4)	(1,693.1)	(2,498.0)	(58,617.2)
3.1 GST Amounts (\$000)	(185.5)	(118.5)	(174.9)	(4,103.2)
4.1 QST Amounts (\$000)	(212.6)	(135.9)	(200.5)	(4,704.0)
LAG DAYS				
6.1 Average Payment Days	(8.2)	(8.2)	(9.2)	
6.2 Days to Remit/Refund-GST	31.0	30.0	31.0	
6.3 Days to Remit/Refund-QST	31.0	30.0	31.0	
6a. Revenue Lag Days-GST	22.8	21.8	21.8	
6b. Revenue Lag Days-QST	22.8	21.8	21.8	
10.1 Revenue Dollar Days-GST	(4,228.5)	(2,583.8)	(3,811.9)	(88,325.6)
11.1 Revenue Dollar Days-QST	(4,847.7)	(2,962.1)	(4,370.1)	(101,259.0)
12.1 Composite Lag Days-GST	22.8	21.8	21.8	21.5
13.1 Composite Lag Days-QST	22.8	21.8	21.8	21.5

The item numbers correlate to the item numbers in the Appendix F1. To keep the detail as clear as possible, Figure 8 includes only three months of the fiscal year. The lags for expenses and capital corresponding to GST and QST are calculated in a similar manner.

Item 1. of Figure 8 is the estimated 2005 revenue adjusted by month. Items 3.1 and 4.1 represent the associated GST and QST amounts.

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Item 6a. is the revenue lag for GST. This lag is the sum of items 6.1 and 6.2, the average payment days and the days to remit/fund. For QST, the revenue lag corresponds to items 6b. It is the sum of items 6.1 and 6.3

The tax lag on revenue has similar components to those found in Figure 4 except that the billing lag is not included. The GST and QST are based on the billing date and therefore the time span between meter reading and billing is not material to the lag calculation. The volumes and revenues used in the calculation have been adjusted to reflect the lag arising from a month based on the billing date. This eliminates the lag for billing. The revenue lag is simply the lag from the billing date to the date the revenues are received (collection lag) plus the average number of days in the billing period (average service period). This revenue lag is determined in Figure 9.

Figure 9

**DETERMINATION OF THE
GST/QST PAYMENT DAYS**

1.	Average Service Period	15.2
2.	Collection Lag	24.0
3.	Total Lag for GST	39.2

The Total Lag determined in Figure 9 is an annual average and is used consistently for each month. Therefore, the payment lag for July, used in Item 6.1 of Figure 8, is the number of days for July less the lag, resulting in a negative 8.2 days (31.0 days – 39.2 days). That is, it takes on average until the 8th of August to collect the taxes.

The application of the revenue lag of Item 6a. to the GST, Item 3.1, produces the weighted dollar days of Item 10.1 in Figure 8.

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The sum of the Dollar Days divided by the total taxes arising from revenues results in the average lag days for the year in Item 12.1 Column 13, which is 21.5 days. The same reasoning applies to QST.

Figure 10 is a summary of the results found in the Appendix F1 for the GST. Column 1 is the annual level of GST estimated for each item. The monthly breakdown of these amounts was used in the model for the lag determination. Column 2 is the lag days. The average daily amount, which is Column 1 divided by 365, is carried for the number of days found in column 2. This level of funding is found in Column 3. The total of Column 3, \$(239.4) thousand is the working cash requirement for fiscal 2005.

FIGURE 10
SUMMARY OF GST AMOUNTS
FOR WORKING CASH REQUIREMENT
FISCAL 2005

Item No.	Col. 1 Rev/Exp (\$000)	Col. 2 Lag Days	Col. 3 Working Cash Requirement (\$000)
1.1 Revenue	(4,103.2)	21.5	(242.0) a/
1.2 O & M	110.6	13.1	4.0 a/
1.3 Capital	271.4	(1.8)	(1.3) a/
1. Total			<u>(239.4)</u>

a/ Col. 1 divided by 365 days times Col. 2

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Figure 11 is a summary of the results found in Appendix F1 for the QST. The presentation is the same as in Figure 10. The total of Column 3, \$(274.4) thousand is the working cash requirement for QST for fiscal 2005.

FIGURE 11

**SUMMARY OF QST AMOUNTS
FOR WORKING CASH REQUIREMENT
FISCAL 2005**

Item No.	Col. 1 <u>Rev/Exp</u> (\$000)	Col. 2 <u>Lag Days</u>	Col. 3 <u>Working Cash Requirement</u> (\$000)
1.1 Revenue	(4,704.0)	21.5	(277.4) a/
1.2 O & M	126.8	13.1	4.5 a/
1.3 Capital	311.1	(1.8)	<u>(1.5) a/</u>
1. Total			<u><u>(274.4)</u></u>

a/ Col. 1 divided by 365 days times Col. 2

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6. RECOMMENDATIONS

The determination of the working cash requirement for fiscal 2005 should be based on:

- revenue lag of 43.6 days,
- gas cost lag of 35.4 days,
- O&M lag of 22.2 days,
- tax lag of (65.0) days,
- income tax lag of 15.2 days,
- a working cash requirement of \$(239,400) for GST , and
- a working cash requirement of \$(274,400) for QST.

The working cash requirement arising from the application of the net lag days to the forecasted level of expenses for the Test Year and the inclusion of working cash from GST, QST and the uncollectibles, results in a \$849,300 debit in rate base, as outlined in Exhibit GI-8, Document 2.

The Company believes these results represent reasonable estimates for the 2005 Test Year.

APPENDICES