

2.0 RATE DESIGN

2.1 INTRODUCTION

Q1. What is the purpose of this evidence?

A1. NGTL provides in this section the history and basis for its existing rate design. NGTL assesses the appropriateness of the existing rate design against generally accepted design criteria and the results of specific cost of service analyses.

Q2. Is NGTL proposing any changes to its existing rate design?

A2. No. NGTL has determined that it is appropriate to maintain the existing rate design at this time.

The attributes of the existing rate design compare favourably with generally accepted rate design criteria. The rate design is fair and equitable, encourages efficiencies, provides appropriate revenue and rate stability, is consistent with other policies and regulations, is simple and understandable, and is generally accepted by NGTL's customers and stakeholders.

The existing rate design is also the product of many evolutionary steps in recent years. These steps have been taken in response to changing market dynamics and have been influenced by settlements that resulted from extensive discussions where all stakeholders had the opportunity to participate and have their views heard. NGTL believes there are no present market requirements that necessitate changes to its existing rate design and that the majority of its stakeholders do not want change at this time.

Accordingly, NGTL does not propose in this Application any changes to its existing rate design at this time.

1 **Q3. How is the evidence in this section organized?**

2 A3. NGTL has organized the evidence in this section as follows:

- 3 • **Sub-Section 2.2** - NGTL describes the historical development of its rate design;
- 4 • **Sub-Section 2.3** - NGTL describes the existing rate design methodology and
5 explains how rates are calculated under this methodology;
- 6 • **Sub-Section 2.4** - NGTL assesses the existing rate design against generally
7 accepted rate design criteria;
- 8 • **Sub-Section 2.5** - NGTL presents and discusses the results of its analysis of
9 alternative distance of haul and cost of haul methodologies;
- 10 • **Sub-Section 2.6** - NGTL presents and discusses the results of its analysis of
11 splitting the cost of lateral pipelines into receipt and delivery;
- 12 • **Sub-Section 2.7** - NGTL presents and discusses the results of its analysis of
13 metering service costs, disaggregated into receipt, ex-Alberta delivery, intra-
14 Alberta delivery, storage, and extraction; and
- 15 • **Sub-Section 2.8** - NGTL summarizes the evidence in Section 2 and the
16 conclusions to be drawn from it.

17 Sub-Sections 2.5, 2.6 and 2.7 include NGTL's responses to certain of the Board's
18 directives from Decision 2003-051.¹

¹ EUB Decision 2003-051 (June 24, 2003), Appendix 5.

2.2 DEVELOPMENT OF EXISTING RATE DESIGN

Q4. Please describe the historical development of NGTL's rate design.

A4. NGTL's rate design has evolved over time to reflect and accommodate market conditions, public policy, and physical and operational realities. This evolution can be separated into five phases.

i) Dedicated Plant Method

Prior to 1980, NGTL's rate design was based on the dedicated plant method. Specific units of plant or allocated specific percentages of common plant were allocated to individual shippers under cost of service agreements. The owning and operating costs of the dedicated plant were recovered through rates charged to the shippers to whom the plant was allocated.

The dedicated plant method reflected the concepts of cost accountability and distance and diameter sensitivity.

ii) Postage Stamp with Commodity Charge Only

From 1980 to 1986, pursuant to direction from the Government of Alberta, a postage stamp rate was implemented on the Alberta System for the transmission of all gas destined for export from Alberta. Shippers of gas for export paid the same rate irrespective of the length of haul.

The change from dedicated plant rate design to postage stamp rate design reflected the integrated nature of the Alberta System. Under the postage stamp rate design shippers benefited from economies of scale. Rates for customers requesting service requiring new facilities were based on the average cost of all facilities rather than on the costs of the incremental facilities. Cost accountability and distance and diameter sensitivity implicitly recognized in the earlier dedicated plant rate design were not reflected to any significant degree in the postage stamp rate design. Notwithstanding

1 the institution of a postage stamp rate for export service, rates reflecting both volume
2 and distance continued to be charged for intra-Alberta delivery service.

3 iii) Postage Stamp with Demand and Commodity Charges

4 Commencing in 1986, the 100 percent commodity postage stamp rate for export
5 deliveries changed to a two-part demand and commodity rate design. This change
6 was implemented after the deregulation of gas commodity pricing. The pricing
7 deregulation resulted in an immediate incentive for new parties to become customers
8 on the Alberta System as they were able to compete for downstream markets. These
9 markets were previously served by downstream pipelines that had historically
10 combined merchant and transmission functions. These functions were unbundled to
11 facilitate the deregulation of gas markets and pricing.

12 One ramification of this new design was that the importance of holding separate
13 receipt and delivery entitlements was heightened. Under the previous commodity rate
14 design shippers only paid for throughput actually transported. Under the new rate
15 design shippers paid a demand charge based on their contracted receipt and delivery
16 capacity. These circumstances provided a financial incentive for shippers to hold the
17 appropriate levels of both receipt and export service. This led in turn to different
18 shippers holding receipt and delivery service, which ultimately led to the
19 development of the NOVA Inventory Transfer (NIT) pool.

20 In 1989, NGTL implemented a demand and commodity rate design for intra-Alberta
21 deliveries. The demand charge was based on receipt point contract demands. The
22 commodity charge was applied to receipt volumes entering the Alberta System. The
23 volume and distance reflective rates that had previously applied to intra-Alberta
24 service were replaced with an intra-Alberta postage stamp rate.

25 The intra-Alberta postage stamp rate was approximately 50 percent of the postage
26 stamp rate applicable to export volumes because only receipt demand charges were
27 payable by intra-Alberta customers. This reflected the fact that, on average, volumes

1 transported for delivery in Alberta travelled approximately one-half the distance
2 travelled by volumes destined for export from Alberta.

3 iv) Receipt Point Specific Rates

4 By 1996, NGTL and industry recognized that continuation of the postage stamp rate
5 design was unsustainable in the face of numerous pipeline projects that would bypass
6 the Alberta System at the border. A lengthy and extensive process of stakeholder
7 consultation was undertaken with the goal of developing a new service and rate
8 design framework that would reconcile and address, to the extent achievable, the
9 concerns and requirements of NGTL and its many stakeholders. These discussions
10 evolved through numerous phases over two years and culminated in the rate design
11 and terms and conditions of service contained in NGTL's 1999 Products and Pricing
12 (P&P) Application.²

13 The major rate design change implemented with the approval of the P&P Application
14 in Decision 2000-6³ was the introduction of receipt point specific pricing. Natural
15 gas for the export market was subject to a distance and diameter sensitive receipt
16 charge and a postage stamp delivery charge. Intra-Alberta volumes continued to be
17 subject to receipt charges only.

18 Given the integrated design and operation of the Alberta System, determining the
19 costs for receipt point pricing required the use of a cost allocation methodology.
20 Distance and pipe diameter were the two major cost allocation factors reflected in the
21 receipt point specific rate design. Since distance is a function of the receipt location
22 and pipe diameter is a function of the receipt volumes the new allocation method was
23 only applied when calculating the rates for receipt contracts. Using distance and
24 diameter to allocate costs resulted in receipt point specific rates where each receipt
25 point on the Alberta System had a rate that reflected the length and pipe diameter of
26 the facilities required to get its gas to the major border delivery points.

² Application No. 990157 (April 6, 1999).

³ EUB Decision 2000-6 (February 4, 2000).

v) Receipt Point Specific Rates with Intra-Alberta Short-haul and Delivery Charges

In Decision 2002-16, the Board ordered NGTL to “enter into collaborative discussions with stakeholders to resolve issues of cost accountability and cost allocation among receipt, intra-Alberta and ex-Alberta deliveries.”⁴ After extensive discussions with stakeholders, a settlement was reached with certain stakeholders that formed the basis for the Alberta System 2003 Tariff Application.⁵ On approval of this Application in Decision 2003-051,⁶ NGTL implemented the following major rate design changes: the introduction of a Firm Transportation – Points to Point (FT-P) service specifically designed for intra-Alberta transportation; an explicit toll for Firm Transportation – Alberta Delivery Service (FT-A); a higher Minimum Annual Volume (MAV) threshold to increase cost accountability for facilities associated with intra-Alberta, extraction and storage delivery points; and the introduction of a new Extension Annual Volume (EAV) obligation for mainline extensions associated with intra-Alberta deliveries.

FT-P provides an intra-Alberta transportation service for customers with a rate that reflects the costs required to provide the service and the attributes associated with it. As the rate for the FT-P service is based on the full path cost of providing service from specific receipt points to a specific delivery point users of this service are accountable for the costs associated with the transportation of their gas.

In effect, FT-P represents a combined FT-R and FT-A service. Therefore the FT-P rate is similar to the combined FT-R and FT-A rates. Specifically, the FT-P rate includes the receipt metering and transmission components of costs, which is similar to the FT-R rate, and the intra-Alberta metering costs, which is similar to FT-A rate.

⁴ NGTL Application for Approval of Costs – Delivery Service to the Fort McMurray Area, EUB Decision 2002-16 (February 5, 2002), p. 21.

⁵ Application No. 1289773 (January 20, 2003, as amended March 31, 2003).

⁶ Decision 2003-051 (June 24, 2003).

FT-A, in conjunction with FT-R, provides the alternative for receipt, transportation and delivery to intra-Alberta markets. Metering costs that had previously been recovered via other transportation services are now recovered directly from the customer that holds the FT-A contract. FT-A does not have a transmission component associated with its rate because less than ~~two~~ 0.2 percent of the total transmission costs are associated only with intra-Alberta deliveries. Transmission costs for shared facilities are included in the FT-R rate. The FT-R rate is the one of the costs that parties incur in providing gas and is recovered indirectly through the price of gas when the gas is sold.

The change to the MAV and the introduction of the EAV provide increased customer cost accountability for intra-Alberta deliveries.

Q5. What is the overall result of these historical rate design changes?

A5. NGTL's rate design has evolved in recent years to provide increased customer cost accountability and transparency while ensuring certain benefits that are valued by customers are preserved.

Specifically, the rate design modifications and associated changes to the terms and conditions of service that have been implemented since 2000 have improved the relationship between the costs of providing a particular service and the rate charged for that service.

Throughout the series of rate design changes, separate services and rates for receipt and delivery contracts have been maintained. This separation is an important part of the service flexibility and simplicity that customers value. Essentially, a customer pays a receipt rate to gain access to the Alberta System and then it or another customer who takes title to the gas pays a delivery rate to remove gas from the Alberta System. This separation of receipt and delivery allows for the "pooling" of gas on the Alberta System and facilitates the natural gas trading and marketing activities that occur via the NIT market.

2.3 EXISTING NGTL RATE DESIGN METHODOLOGY

Q6. Please describe NGTL's existing rate design methodology.

A6. As briefly discussed earlier, under the existing rate design methodology, NGTL divides the services it offers into two primary categories – receipt and delivery.

Receipt services, which include Firm Transportation – Receipt (FT-R), Firm Transportation – Receipt Non-Renewable (FT-RN) and Interruptible – Receipt (IT-R), provide shippers with the ability to deliver natural gas to the Alberta System at receipt points.

Delivery services are divided into export and intra-Alberta (FT-A) delivery services. Export delivery services include Firm Transportation – Delivery (FT-D), Short Term Firm Transportation – Delivery (STFT), and Interruptible – Delivery (IT-D). These services provide shippers with the ability to remove natural gas from the Alberta System at delivery points.

A simplified pictorial representation of NGTL's major services (FT-R, FT-D and FT-A) is provided in Figure 2.3-1. For illustrative simplicity, the rates shown are based on the 2004 rates applied for in this Application expressed in cents/Mcf.

Revised Figure 2.3-1**Simplified Pictorial of Existing Rate Design Methodology**

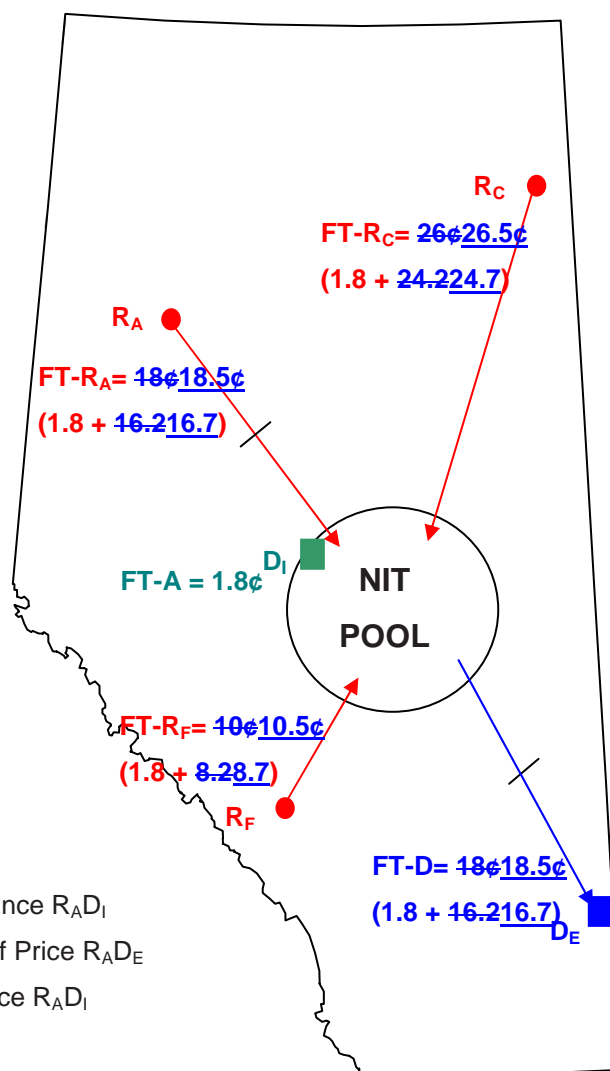
R_F , R_A and R_C are floor, average and ceiling Receipt meter stations, respectively.

D_I and D_E are Intra and Export Delivery meter stations, respectively.

Price R_A = Price D_E

Distance $R_A D_E$ = approximately 2 x Distance $R_A D_I$

Therefore, the transmission component of Price $R_A D_E$
= 2 x the transmission component of Price $R_A D_I$



- 1 In 2003, FT-P was incorporated into the rate design. This service provides shippers with
- 2 the ability to deliver gas on the Alberta System at receipt points and remove it from the
- 3 Alberta System at an intra-Alberta delivery point.

Q7. What is the significance of separate receipt and delivery contracts?

A7. Separate receipt and delivery contracts are an important part of NGTL's service flexibility and simplicity that customers value. This separation of receipt and delivery contracts allows for the "pooling" of gas on the Alberta System and contributes to the natural gas trading and marketing activities that occur via NITs.

Q8. What is the significance of the NIT pool?

A8. The current state of the Alberta gas market and its liquidity is influenced significantly by the single NIT pool; a very effective and efficient forum for gas commodity commerce. The NIT pool is one of the largest and most efficient markets in North America with a physical natural gas flow of approximately 11 Bcf/d and commercial transactions in excess of 35 Bcf/d. This level of commerce provides a robust opportunity for price discovery, which ensures the establishment of pool prices for both spot and forward transactions. This pool includes supply from over 900 individual receipt points and provides delivery to over 100 intra-Alberta markets as well as five ex-Alberta pipelines that supply markets across North America. Over 200 customers have direct access to the NIT pool via NGTL accounts and numerous others can access the market via third party services. This broad accessibility maximizes the amount of gas available, places all suppliers on the same footing with the maximum opportunity to find buyers and places all buyers on the same footing with the maximum opportunity to find supply.

NGTL's rate design, terms and conditions of service, and business procedures are integral to the operation of NIT and are greatly valued by NGTL's customers.

Q9. How does NGTL determine rates for services under its existing rate design?

A9. NGTL establishes rates that recover the metering and transmission costs associated with the provision of each service.

Specifically, rates for receipt service (FT-R) are set to recover the metering costs to receive gas on the system and the transmission costs associated with the facilities that were designed to transport gas from the particular receipt point. The transmission

1 component of the rates is determined in accordance with the distance-diameter pricing
2 methodology approved by the Board in Decision 2000-6.⁷ The receipt rate can vary by
3 plus or minus 8 cents/Mcf from the average receipt rate. The FT-RN and IT-R rates are
4 set at 110% and 115% of the FT-R rate, respectively, for each receipt point.

5 NGTL sets the rate for export delivery service (FT-D) to recover the metering costs to
6 deliver gas from the system and the export delivery share of transmission costs. The rate
7 is the same at all export delivery points and is equal to the average receipt rate.

8 The rate for STFT service is a biddable rate. The minimum bid rate for STFT is 135% of
9 the FT-D rate. The IT-D rate is set at 110% of the FT-D rate.

10 The intra-Alberta delivery rate (FT-A) is set to recover the metering costs of delivering
11 gas from the system. The FT-A rate is the same for all intra-Alberta delivery points.

12 The FT-P rate is set to recover the metering costs to receive gas on the system and deliver
13 gas from the system as well as the associated transmission-related costs. The
14 transmission-related costs are based on the maximum distance between the receipt points
15 and delivery point identified on the schedule of service. Similar to FT-R, the FT-P rate
16 can vary by plus or minus 8 cents/Mcf from the average FT-P rate.

17 The rates for Firm Transportation – Extraction (FT-X) and Interruptible – Access to
18 Storage (IT-S) are set at zero. NGTL recovers the costs associated with these services
19 through the rates for receipt, export delivery and FT-P services.

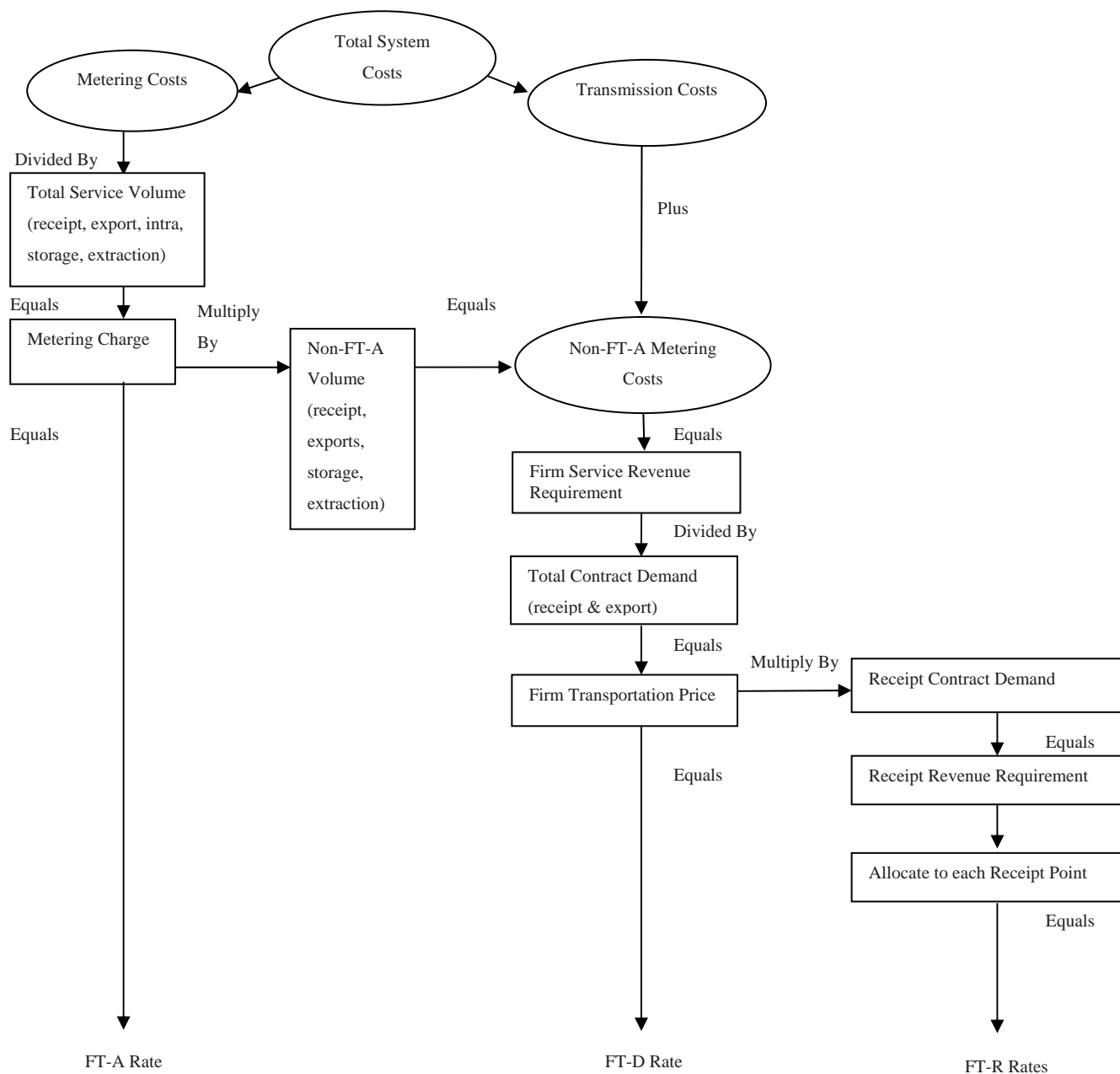
20 Figure 2.3-2 is a simplified illustration of the cost allocations and rate calculations for the
21 existing rate design methodology. For simplicity, only FT-A, FT-D and FT-R services
22 are shown.

23 Table 2.3-1 illustrates the calculation of the FT-P rates for 2004 and compares them to
24 FT-R rates for 2004.

⁷ Decision 2000-6 (February 4, 2000).

Figure 2.3-2

Simplified Illustration of Cost Allocations and Rate Calculations by Service



Revised Table 2.3-1**Calculation of FT-P Rates for 2004**

Distance Band	Maximum Distance Between Receipt Point and Delivery Point (km)		Receipt Metering Component	Transmission Component	Delivery Metering Component	FT-P Rate	Comparable FT-R Rate
	From	To	¢/Mcf	¢/Mcf	¢/Mcf	¢/Mcf	¢/Mcf
1	0	25	1.84	8.05 <u>8.64</u>	1.84	41.7 <u>12.3</u>	1.84 + 8.05 <u>8.64</u> = 9.9 <u>10.5</u> Floor
2	>25	50	1.84	8.93 <u>9.53</u>	1.84	42.6 <u>13.2</u>	
3	>50	75	1.84	9.82 <u>10.42</u>	1.84	43.5 <u>14.1</u>	
4	>75	100	1.84	10.71 <u>11.31</u>	1.84	44.4 <u>15.0</u>	
5	>100	125	1.84	11.60 <u>12.20</u>	1.84	45.3 <u>15.9</u>	
6	>125	150	1.84	12.49 <u>13.09</u>	1.84	46.2 <u>16.8</u>	
7	>150	175	1.84	13.38 <u>13.97</u>	1.84	47.1 <u>17.7</u>	
8	>175	200	1.84	14.27 <u>14.86</u>	1.84	47.9 <u>18.5</u>	1.84 + 16.05 <u>16.64</u> = 17.9 <u>18.5</u> Average
9	>200	225	1.84	15.16 <u>15.75</u>	1.84	48.8 <u>19.4</u>	
10	>225	250	1.84	16.05 <u>16.64</u>	1.84	49.7 <u>20.3</u>	
11	>250	275	1.84	16.93 <u>17.53</u>	1.84	50.6 <u>21.2</u>	
12	>275	300	1.84	17.82 <u>18.42</u>	1.84	51.5 <u>22.1</u>	
13	>300	325	1.84	18.71 <u>19.31</u>	1.84	52.4 <u>23.0</u>	
14	>325	350	1.84	19.60 <u>20.20</u>	1.84	53.3 <u>23.9</u>	
15	>350	375	1.84	20.49 <u>21.09</u>	1.84	54.2 <u>24.8</u>	1.84 + 24.05 <u>24.64</u> = 25.9 <u>26.5</u> Ceiling
16	>375	400	1.84	21.38 <u>21.97</u>	1.84	55.1 <u>25.7</u>	
17	>400	425	1.84	22.27 <u>22.86</u>	1.84	56.0 <u>26.5</u>	
18	>425	450	1.84	23.16 <u>23.75</u>	1.84	56.8 <u>27.4</u>	
19	>450		1.84	24.05 <u>24.64</u>	1.84	57.7 <u>28.3</u>	

1 Q10. How does NGTL determine metering and transmission costs?

2 A10. NGTL separates total system costs into metering and transmission costs on the basis of a
3 cost of service (COS) study.

4 The COS study has four basic steps as illustrated in Diagram 1 of the Cost of Service
5 Results Utilizing DOH – Revised Methodology (Appendix E in this section). The first
6 step is to group costs into specific accounts. There are four major accounts for the
7 Alberta System: pipeline assets, general plant, working capital and general and
8 administration (G&A).

9 The second step is to allocate direct and non-direct costs to each of three functional areas:
10 compression, transmission and metering. Pipeline asset costs are direct costs that are
11 attributed to physical facilities that provide each function. Pipeline asset costs include

depreciation, operating return, income and capital taxes, transportation by others (TBO), maintenance costs, and municipal taxes.

General plant, working capital and G&A costs are considered non-direct costs because they cannot be directly attributed to any specific pipeline assets. For example, there is no direct relationship between the salaries and benefits paid to human resources employees and compressor stations. Therefore, these costs are allocated to the various functions based on the most appropriate cost driver that can be identified (e.g., net book value).

The third step is to summarize the costs by service. All of the costs associated with each functional area are allocated to the individual pipeline assets providing those functions.

The functionalized non-direct costs are allocated to each asset by using allocators appropriate for each type of asset (e.g., transmission costs are allocated to individual pipes using distance). Once all of the costs are grouped at the asset level, they are summarized by service by adding the costs for all of the assets that provide each service (e.g., adding all of the costs for all meter stations to derive a total metering cost).

The fourth step is to allocate the service costs to the rate classes. This is accomplished by first applying the costs of metering to all services (other than IT-S and FT-X). Then the remaining costs are allocated between receipt and delivery service such that the average FT-R rate equals the FT-D rate.

Q11. Has NGTL conducted a COS study?

A11. Yes. NGTL conducted a COS study based on 2002 Alberta System costs. NGTL included a copy of the study in Phase 1 of its 2004 GRA.⁸

Appendices E to N in this section contain the results of applying the previously described COS study methodology to NGTL's existing rate design using various distance of haul (DOH) and cost of haul (COH) alternatives.

⁸ Application No. 1315423 (September 30, 2003).

Q12. What is the rationale for NGTL's existing rate design?

A12. The Alberta System is integrated on physical, commercial and operational levels. This degree of integration gives rise to the rolled-in treatment of the Alberta System's owning and operating costs for the purpose of determining the total revenue requirement. Rates for the various transportation services are calculated by applying various cost allocation methodologies to the total revenue requirement.

Metering is a standard function required by all transportation services offered on the Alberta System. Gas is metered when it is received on the system and gas is metered when it is delivered from the system. As such, a standardized charge, based on historical information, is included for metering in all services (other than IT-S and FT-X).

Transmission is the primary function of the Alberta System and as such includes the majority of costs. As previously mentioned, NGTL divides its services into receipt and delivery. With the exception of variations in linepack, receipt and delivery services must work synchronously from a physical perspective.

The rates are developed such that the transmission related component of the average receipt rate is set equal to the transmission related component of the export delivery rate. This is accomplished by allocating all transmission related costs between receipt and export delivery services based on contract demand quantities. This approach is consistent with all rate design changes implemented since 1980 and is still appropriate as approximately 85% of the volume of gas received and transported on the Alberta System is destined for export markets.

Intra-Alberta delivery service does not have a transmission component associated with its rate because less than ~~two~~ 0.2 percent of the total transmission costs are associated only with intra-Alberta deliveries. Transmission costs for shared facilities are included in the FT-R rate. The FT-R rate is one of the costs that parties incur in providing gas and is recovered indirectly through the price of gas when the gas is sold. Therefore, when gas is delivered to intra-Alberta markets, the delivery metering costs are recovered directly through the

1 FT-A rate and the transmission related costs are recovered indirectly through the FT-R
2 rate via the price of gas.

3 The reasonableness of this design has been supported by DOH studies, which have shown
4 that the distance natural gas travels to export delivery points is roughly twice the distance
5 travelled by gas destined for intra-Alberta delivery points.

6 **Q13. Has NGTL completed a DOH study for 2002?**

7 A13. Yes. NGTL has prepared two 2002 DOH studies, one using the same methodology as in
8 prior DOH studies (Appendix B in this section) and the other using a revised
9 methodology (Appendix A in this section).

10 The differences between the two methodologies are primarily attributable to the removal
11 of some simplifying assumptions that were made in the existing methodology.

12 Specifically, three major simplifying assumptions have been eliminated:

- 13 1) All intra-Alberta and ex-Alberta delivery volumes are now included instead of a
14 representative sample of approximately 80% of the volume for intra-Alberta and 99%
15 of the volume for ex-Alberta;
- 16 2) The flow pattern is now based on the typical operation of the pipeline system for each
17 month instead of being based on the annual flow of a typical day during the year; and
- 18 3) The flow is now based on a hydraulic simulation that explicitly balances the receipts
19 and deliveries based on the actual system configuration instead of assuming that all
20 receipt stations in a geographical area have access to downstream delivery stations
21 regardless of connectivity or size of facility.

NGTL has adopted the revised methodology for the following reasons:

- 1) Simplifying assumptions have been eliminated making the analysis more robust; and
- 2) The analysis is more automated, making it simpler and less costly to produce.

NGTL has used the revised methodology in evaluating the alternatives requested by the Board.

Q14. What is the impact of the change in DOH methodology?

A14. The following table compares the revised and the existing methodologies.

Table 2.3-2
Comparison of Annual Results

	2002 Revised DOH Study Results	2002 Existing DOH Study Results	Difference	% Difference
Average Intra-Alberta distance (km)	255.8	270.5	(14.7)	(5.4%)
Average Ex-Alberta distance (km)	569.4	584.8	(15.4)	(2.6%)
Average Ex-Alberta to Intra-Alberta Ratio	2.23:1	2.16:1		
Average Intra-Alberta to Ex-Alberta % Ratio	44.9%	46.3%	(1.4)	(3.0%)

Both the average DOH for intra-Alberta and ex-Alberta and the ratio of the average intra-Alberta DOH to the average ex-Alberta DOH are slightly lower using the revised

1 methodology. However the results are not significantly different for 2002 or from
2 previous years.

3 **Q15. Why is the ex-Alberta rate the same for all export delivery points?**

4 A15. Through consultation with customers, NGTL understands that customers are in favour of
5 the existing rate design that includes a uniform delivery rate.

6 NGTL currently has eight defined Export Delivery Points. The major Export Delivery
7 Points are Empress, McNeill and Alberta/BC. Empress and McNeill are located near each
8 other and thus from a physical and system design perspective are often considered as one
9 location – the Eastern Gate. Alberta/BC is often referred to as the Western Gate. Both
10 the Eastern and Western Gates are located at the bottom end of the Alberta System,
11 delivering gas that was received from locations throughout the province to the major
12 pipeline systems out of the province. As a result, the average distance of haul to the
13 major export points is similar and it is appropriate that the delivery rate is the same for
14 these border points.

15 At this time, the five smaller border points combined have less than 1% of the ex-Alberta
16 contract demand quantities and throughput and therefore have not warranted an
17 independent rate. For simplicity these points are charged the same rate as the major
18 border points.

19 **Q16. Why is the FT-A rate the same for all intra-Alberta delivery points?**

20 A16. The FT-A rate is based on the system average cost to meter gas. The use of a system
21 average cost simplifies the rate calculation and reduces the year-to-year rate volatility that
22 would otherwise occur if NGTL used service-specific metering costs, thereby minimizing
23 rate uncertainty for intra-Alberta customers.

24 **Q17. Why is the FT-A rate based only on the cost to meter gas?**

25 A17. FT-A is the service used to deliver gas from the Alberta System to intra-Alberta markets.
26 The direct facilities required for this service are the meter station and any pipe or

compression facilities not associated with other services. As there are no compression facilities and very little pipe specifically associated with intra-Alberta deliveries the rate is based on the cost of metering only. Transmission costs for shared facilities are included in the FT-R rate.

The FT-R rate is one of the costs that parties incur in providing gas and is recovered indirectly through the price of gas when the gas is sold. The FT-A rate is therefore a reasonable method for collecting the cost of facilities related to intra-Alberta deliveries and is more reflective of cost causation principles than the previous methodology that set the FT-A rate to zero.

FT-A is one of two services available to shippers to deliver gas to intra-Alberta markets. The other service, FT-P, in effect, represents a combined FT-R and FT-A service. The FT-P rate includes the receipt metering and transmission components of costs, which is similar to the FT-R rate, and the intra-Alberta metering costs, which is similar to the FT-A rate.

Q18. Why does the FT-P rate vary only by plus or minus 8 cents/Mcf?

A18. The algorithm used to price the FT-P service was developed as an integrated component of the rate design methodology. As the rate for FT-P is based on the full path cost of providing service from specific receipt points to a specific delivery point, it is comprised of the receipt metering charge, a transmission component charge between the floor and ceiling range, and the delivery metering charge. The receipt and delivery metering charges are the same. The transmission component charge for FT-P varies between the floor and ceiling transmission component charges for FT-R. The transmission component charge for FT-P between the floor and ceiling is increased based on 25-km increments. The cost associated with each increment is based on the average intra-Alberta DOH as determined by NGTL's DOH Study. For 2002 the average intra-Alberta DOH is 255 km. Therefore, there are nine increments between the minimum FT-P distance of 25 km and the average distance of 255 km, resulting in a transmission component charge of 0.89 cents/Mcf per 25 km increment. This methodology ensures that the transmission

1 component of the FT-P rate to move gas the average intra-Alberta DOH is exactly half
2 the transmission component of the rate that is charged to transport gas the average ex-
3 Alberta DOH.

4 **Q19. Why are the rates for IT-S and FT-X zero?**

5 A19. Through consultation with customers, NGTL understands that customers are not in
6 favour of explicit rates for IT-S or FT-X at this time.

7 The incremental revenue that would be generated through direct cost recovery for IT-S
8 and FT-X services does not warrant the additional administrative complexity of applying
9 such charges to these services. Moreover, these services provide broad industry benefits;
10 therefore, it is appropriate for the costs associated with them to be recovered through
11 other transportation services.

2.4 APPROPRIATENESS OF NGTL’S EXISTING RATE DESIGN

Q20. Has NGTL determined that the existing rate design is appropriate?

A20. Yes.

Q21. What criteria has NGTL used to make this determination?

A21. NGTL has compared the attributes of its existing rate design to generally accepted rate design criteria⁹ as set out below:

Fairness and Equity

Rates must be just and reasonable and not constitute undue discrimination. To be fair, the rate design should establish prices and terms and conditions of service that reflect the underlying costs and conditions of providing various services. Current situations are based in part on decisions made under previous rate design regimes. This history and resulting rate design evolution need to be taken into consideration to ensure fairness.

Encouragement of Efficiency

To be efficient the rate design should establish proper price signals for the various services offered. This implies that, to the extent consistent with other rate design objectives, the price for each service should reflect the actual costs of providing that service.

Rate Stability

Rates should be reasonably predictable. There should not be “rate shock” and there should generally be a gradual transition to new rates to avoid hardship to particular customer groups.

⁹ Mansell, Robert L., and Church, Jeffrey R., “Traditional and Incentive Regulation, Application to Natural Gas Pipelines in Canada,” 1995, The Van Horne Institute, pp. 55-56.

1 Revenue Sufficiency and Stability

2 This refers to the requirement that the rates provide adequate revenues to meet all
3 necessary costs and provide a fair return to investors, while maintaining appropriate
4 service and safety levels.

5 Consistency with Other Policies and Regulation

6 This mainly concerns the consistency of regulatory decisions with the objectives of the
7 natural gas market and price deregulation and with regulatory and governmental policies.
8 It is particularly important that the tolls provide the proper market signals and efficiency
9 incentives so that the deregulated markets operate efficiently.

10 Practicality, Administrative Simplicity and General Acceptance

11 The rate design methodology should be well-understood, the methods used to set the rates
12 should be as logical and straightforward as possible, and the rates and methodology
13 should be as free as possible from controversy. Public acceptability can be demonstrated
14 by the support and acceptance of the design by the various rate payers of the various
15 services.

16 **Q22. Please assess NGTL's rate design against the criteria outlined above.**

17 A22. Fairness and Equity

- 18 • The Alberta System rate design reflects a trade-off between cost accountability and
19 the flexibility that is provided by an integrated system. Although absolute cost
20 accountability is difficult, if not impossible, to achieve it has been addressed in a
21 number of ways in the existing rate design.
- 22 • NGTL has continued its practice of rolling-in the costs of new facilities. All
23 customers benefit from the economies of scale and all customers are responsible for
24 the aggregate costs.
- 25 • For new facilities, the terms and conditions of service ensure appropriate cost
26 accountability (e.g., FCS, primary and secondary terms for receipt facilities).
- 27 • All similarly situated customers are treated in a consistent fashion.

- 1 • The existing rate design has developed over time and has evolved in response to
2 changing market conditions and stakeholder objectives.

3 Encouragement of Efficiency

- 4 • The existing rate design provides proper price signals for the various services offered.
5 For example, receipt points further from export delivery points are subject to higher
6 rates. The FT-P rate for intra-Alberta service is distance specific and reflects all costs
7 associated with providing this service. The FT-A rate reflects the majority of direct
8 costs associated with intra-Alberta delivery.
9 • As the Alberta System rate design has moved in the direction of greater cost
10 accountability, uneconomic border bypass has been discouraged and the unnecessary
11 proliferation of facilities has been avoided.

12 Rate Stability

- 13 • The rate design is based on cost drivers, such as distance and pipe diameter, that are
14 slow to change and continue to be appropriate at this time.
15 • The use of a system average cost for metering gas reduces the rate volatility for
16 individual meter stations from year to year, therefore minimizing the rate uncertainty
17 for customers.
18 • Significant changes to the rate design have been implemented since 2000. These
19 changes were phased in gradually with the final transition completed in 2003. There
20 is no compelling reason for additional change at this time and as such rates will
21 remain stable in the foreseeable future.

22 Revenue Sufficiency and Stability

- 23 • The rate design is structured to allow for recovery of the approved revenue
24 requirement. Rates are calculated on a cost of service basis, with deferral accounts
25 for over/under-collection of revenues.

26 Consistency with Other Policies and Regulation

- 27 • NGTL's rate design is integral to the facilitation of commercial activities in the
28 Alberta natural gas market. The NIT pool is a highly liquid natural gas market and

one of the most efficient markets in North America. Thus, the rate design has promoted the exploitation of natural gas reserves in Alberta and industrial development including the petrochemical and oil sands industries.

Practicality, Administrative Simplicity and General Acceptance

- The basic concepts and methodology underlying current Alberta System rates as outlined in sub-section 2.3 are relatively straightforward and have not changed significantly since implementation. Modifications have been evolutionary and incremental to these basic concepts.
- NGTL understands that the majority of its customers continue to support the existing rate design.

Q23. What relative weighting should be given to each of these attributes?

A23. It is difficult to ascribe a specific weighting to each of these attributes. NGTL believes that a rate design must evolve to meet the changing dynamics of the marketplace and reflect, at any given time, a balance of interests among stakeholders. As such, the relative importance of each attribute may change over time.

The Board recognized in Decision U96055, that the weight to be assigned to these criteria will reflect a balancing of interests. It stated:

...the basic attributes of an appropriate rate design include simplicity, understandability and public acceptability; freedom from controversy; effectiveness in achieving revenue sufficiency and providing revenue and rate stability; fairness in apportionment of costs and avoidance of undue discrimination; and the encouragement of efficiency. The weight to be given to each of these characteristics will depend largely on the desired balance between various goals, objectives and interests.¹⁰ [Emphasis added]

The various goals, objectives and interests of stakeholders were considered in the consultation process that led to the settlements that form the basis of NGTL's existing rate design. It is fair to say that all the rate design criteria were considered and that the

¹⁰ NGTL 1995 General Rate Application – Phase 2, EUB Decision U96055 (June 12, 1996), pp.35-36.

- 1 existing rate design reflects an appropriate balance between these criteria at this time.
- 2 NGTL recognizes, however, that the appropriate balance may change in future as market
- 3 dynamics and stakeholders' requirements continue to evolve.

2.5 COST OF SERVICE ANALYSIS

Q24. What is the purpose of the evidence in this sub-section?

A24. The purpose of this evidence is to present NGTL's analyses of certain alternatives to the revised DOH methodology. Specifically, this sub-section addresses certain Board directives from Decision 2003-051¹¹ as follows:

Sub-Section 2.5.1 – NGTL analyzes the following three potential changes to the existing DOH methodology discussed in NGTL's 2003 Tariff Application:

- i) DOH for a subset (the mainline component) of the Alberta System using three definitions of mainline pipe (described in detail in Appendix C in this section) as follows:
 - a functional definition;
 - a physical definition of 24 inches in diameter or greater; and
 - a physical definition of 12 inches in diameter or greater;
- ii) calculating DOH for the entire system but with deliveries to extraction facilities excluded from the calculations; and
- iii) calculating the DOH by satisfying the demand of the intra-Alberta deliveries before the export deliveries or vice versa.

Sub-Section 2.5.2 – NGTL analyzes a COH methodology as an alternative to the DOH methodology under the following scenarios:

- i) for the entire system;
- ii) for the mainline component of the Alberta System using three definitions of mainline pipe (described in detail in Appendix C in this section) as follows:
 - a functional definition;
 - a physical definition of 24 inches in diameter or greater; and
 - a physical definition of 12 inches in diameter or greater; and

¹¹ Decision 2003-051 (June 24, 2003), Appendix 5.

iii) calculating the COH for the entire system but with deliveries to extraction facilities excluded from the calculations.

Sub-Section 2.5.3 – NGTL analyzes the rate design implications of using the alternatives defined in sub-sections 2.5.1 and 2.5.2.

2.5.1 Distance of Haul Alternatives

Q25. Please describe the DOH alternatives NGTL has analyzed.

A25. NGTL completed detailed analysis on the following ~~three~~ alternatives:

Alternative 1 – DOH on a subset (the mainline component) of the Alberta System

The methodology used to calculate the distance of haul for this alternative is the same as that described in Section 3 of the Distance of Haul Study – Revised Methodology (Appendix A in this section) with the exception that only pipes classified as mainline (a subset of all the pipes) are considered in the calculations in steps 2, 3 and 4. For this alternative NGTL assumed that the lateral component is aligned with the receipt function; therefore, the DOH methodology is applied only to the mainline component.

NGTL analyzed three definitions of mainline:

- Alternative 1a) – Functional definition of mainline;
- Alternative 1b) – Physical definition of mainline (Pipe ≥ 24 " diameter); and
- Alternative 1c) – Physical definition of mainline (Pipe ≥ 12 " diameter).

Detailed descriptions of these definitions are included in Appendix C in this section.

Alternative 2 – DOH for the entire Alberta System excluding deliveries for extraction

The methodology used to calculate the distance of haul for this alternative is the same as that described in Section 3 of the Distance of Haul Study – Revised Methodology

(Appendix A in this section) with the exception that extraction delivery stations are not included in any group in step 4.

Q26. Please summarize the results of NGTL's analyses.

A26. Table 2.5.1-1 shows the average DOH for intra-Alberta and ex-Alberta deliveries and the resulting ratio of intra-Alberta to ex-Alberta DOH for the revised DOH Study and each alternative. Tables 2.5.1-2 and 2.5.1-3 show the difference between the results of the revised DOH Study and each alternative on an absolute basis and on a percentage basis. These results can be summarized as follows:

- Alternatives 1a), 1b) and 1c) produce lower DOH than the revised DOH Study for both intra-Alberta and ex-Alberta deliveries because only mainline pipe has been included in the analysis.
- Alternative 1a) and 1b) produce similar intra-Alberta DOH, both approximately 50 km lower than the revised DOH Study. This is because intra-Alberta deliveries use similar pipes under both of these system segmentations.
- Alternative 1c) produces a slightly lower intra-Alberta and ex-Alberta DOH than the revised DOH Study as this alternative includes the most pipe in its mainline segmentation. For this reason the results of Alternative 1c) are more closely aligned with the revised DOH Study than are the results of Alternatives 1a) and 1b).
- Alternative 1b) produces a lower ex-Alberta DOH than Alternative 1a) because Alternative 1a) includes more pipe in the mainline segmentation than Alternative 1b).
- Alternative 2 produces the lowest DOH for intra-Alberta deliveries because excluding extraction facilities as intra-Alberta stations in the DOH calculation decreases the intra-Alberta DOH by approximately

150 km. Since the only change made in Alternative 2 was to the intra-Alberta DOH calculation, the results for the ex-Alberta DOH are the same as the results for the revised DOH Study.

NGTL examines the rate design implications associated with using these alternatives in sub-section 2.5.3.

Table 2.5.1-1
Revised DOH Study and Alternatives

	Revised DOH Study	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta DOH (km)	255.8	205.5	201.8	245.0	106.3
Ex-Alberta DOH (km)	569.4	546.7	520.6	562.4	569.4
Intra-Ex Percent Ratio	44.9%	37.6%	38.8%	43.6%	18.7%

Table 2.5.1-2**Comparison of Alternative Results to the Revised DOH Study Results**

	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta DOH (km)	(50.3)	(54.0)	(10.8)	(149.5)
Ex-Alberta DOH (km)	(22.7)	(48.8)	(7.0)	-
Intra-Ex Percent Ratio	(7.3%)	(6.1%)	(1.3%)	(26.2%)

Table 2.5.1-3**Comparison of Alternative Results to the Revised DOH Study Results
on a Percentage Basis**

	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta DOH (km)	(20%)	(21%)	(4%)	(58%)
Ex-Alberta DOH (km)	(4%)	(9%)	(1%)	-
Intra-Ex Percent Ratio	(7.3%)	(6.1%)	(1.3%)	(26.2%)

1 **Q27. Has NGTL analyzed the option of calculating the DOH by satisfying demand of**
2 **intra-Alberta deliveries before export deliveries or vice versa?**

3 A27. Yes. NGTL has determined, based on preliminary analysis, that this methodology
4 represents two cases for calculating DOH that are inconsistent with the integrated design
5 and operation of the Alberta System. Satisfying the demand of intra-Alberta deliveries
6 first assumes that intra-Alberta delivery stations receive gas from the nearest upstream
7 receipt station, resulting in lower DOH for intra-Alberta deliveries and higher DOH for
8 export deliveries. Conversely, satisfying export deliveries first assumes that the export
9 delivery stations receive gas from the nearest upstream receipt station, resulting in lower
10 DOH for export deliveries and higher DOH for intra-Alberta deliveries. These methods
11 do not reasonably reflect the actual operation of the Alberta System. The Alberta System
12 realizes efficiencies and economies of scale that occur because the system is designed
13 and operated as an integrated network. Using either of these two methods would unfairly
14 allocate the benefits of such integration to one particular group of shippers.

15 The following example represents the results that would be obtained from a complete
16 DOH analysis of these options and compares these results to those obtained using
17 NGTL's existing or revised DOH methodology.

Figure 2.5.1-1**Alternate Methods of Determining Distance of Haul**

1 In Case 1, the DOH is determined by assuming that the intra-Alberta delivery station
2 receives gas from the nearest upstream receipt stations. In this case, gas delivered to the
3 intra-Alberta delivery station F is sourced entirely from receipt points E and D. Gas
4 delivered to the export delivery station J is thus sourced from the remaining receipt
5 stations I, H, G, C, B and A. Using this DOH ratio as a proxy to allocate costs results in
6 more than four times the costs being allocated to the export delivery station than the
7 intra-Alberta delivery station.

8 In Case 2, the DOH is determined by assuming that the export delivery station receives
9 gas from the nearest upstream receipt stations. In this case, gas delivered to the export
10 delivery station J is sourced from I, H, G, E, D and C. Gas delivered to the intra-Alberta
11 delivery station F is thus sourced from the remaining receipt stations B and A. Using this
12 DOH ratio as a proxy to allocate costs would result in approximately equal costs being
13 allocated to the export delivery station and the intra-Alberta delivery station.

14 In Case 3, the DOH is determined by assuming that both intra-Alberta and export
15 delivery stations receive gas from all upstream receipt stations. This methodology most
16 accurately reflects the actual operations of the Alberta System. In this case, gas delivered
17 to F is sourced from all upstream receipt stations A, B, C, D and E and gas delivered to J
18 is sourced from all upstream receipt stations A, B, C, D, E, G, H and I.

19 The Board in Decision 2000-6 confirmed that the type of allocation represented in Cases
20 1 and 2 is not appropriate for the Alberta System:

21 The Board notes that the proposed LDS is based on a distance of haul
22 assumption that intra-Alberta delivery points are satisfied from the nearest
23 upstream receipt point. In the Board's view, however, this does not
24 realistically reflect what might be expected to occur. ... In the Board's
25 view, the premise upon which IGCCA based its modified alternative does
26 not adequately conform to the cost causation principle.¹²

¹² EUB Decision 2000-6 (February 4, 2000), p. 50

Based on this level of analysis, NGTL has concluded that Cases 1 and 2 are not valid alternatives and therefore it has not analyzed these options in further detail. NGTL uses the process described in Case 3 in its existing and revised DOH methodologies.

2.5.2 Cost of Haul (COH) Alternatives

Q28. Has NGTL completed a COH study?

A28. Yes. The COH study is included as Appendix D in this section.

Q29. How does the COH study compare to the DOH study?

A29. The COH study is similar to the DOH study except that it also takes into account economies of scale of the facilities that are used to transport gas. For the COH analysis included in this Application, facility costs have been accounted for by applying a relative cost index against each pipe diameter. Thus a COH study provides a measure of both the distance the gas travels as well as the costs associated with the facilities used to provide the transportation.

Q30. Has NGTL analyzed different COH alternatives?

A30. Yes. NGTL has completed detailed COH analysis on the same alternatives it examined in its detailed DOH analysis. Specifically:

Alternative 1 – COH on a subset (the mainline component) of the Alberta System

The methodology used to calculate the cost of haul for this alternative is the same as that described in Section 3 of the COH Study with the exception that only the pipes classified as mainline (a subset of all the pipes) are considered in the COH calculation in the calculations in steps 2, 3, and 4. For this alternative NGTL assumed that the lateral component is aligned with the receipt function; therefore, the COH methodology is applied only to the mainline component.

NGTL analyzed three definitions of mainline in this Alternative:

- Alternative 1a) – Functional definition of mainline;
- Alternative 1b) – Physical definition of mainline (Pipe \geq 24" diameter); and
- Alternative 1c) – Physical definition of mainline (Pipe \geq 12" diameter).

Detailed descriptions of each of these definitions are included in Appendix C in this section.

Alternative 2 – COH for the entire Alberta System excluding deliveries for extraction

The methodology used to calculate the COH for this alternative is the same as that described in Section 3 of the COH Study, with the exception that extraction delivery stations are not included in any group in step 4.

Q31. Please summarize the results of these studies.

A31. The results of the COH Study and each alternative are shown in Table 2.5.2-1. The results of each alternative are compared against the results of the COH Study in Tables 2.5.2-2 and 2.5.2-3. These results can be summarized as follows:

- Alternatives 1a), 1b) and 1c) produce lower COH numbers than the COH Study for both intra-Alberta and ex-Alberta deliveries because the smaller diameter and consequently higher unit cost pipe is not mainline and thus not included in the COH calculation for these alternatives. Service to intra-Alberta points utilizes proportionately more pipe of a small diameter than service to ex-Alberta points. By removing this pipe from the calculation there is a greater reduction to the intra-Alberta costs than the ex-Alberta costs for these alternatives.
- Alternatives 1a) and 1b) produce the lowest intra-Alberta COH results. This is because intra-Alberta deliveries use similar pipes under both these system segmentations. Alternative 1b) however, produces a lower COH than Alternative

1 1a) because it includes less pipe and only 24” and greater diameter pipe in its
2 mainline segmentation.

- 3 • Although Alternative 1c) produces a lower intra-Alberta and ex-Alberta COH
4 than the COH Study, it is not as low as that produced by Alternatives 1a) and 1b).
5 This is because Alternative 1c) includes the most pipe in its mainline
6 segmentation and therefore includes smaller diameter, higher unit cost pipe. As a
7 result, this alternative produces closer results to those of the COH Study.

- 8 • Alternative 1b) produces the lowest ex-Alberta COH, lower than Alternative 1a).
9 This is because it contains the least amount of pipe in its mainline segmentation
10 and only includes pipe that is 24” and greater in diameter, which has a relatively
11 low unit cost.

- 12 • Alternative 2, which excludes extraction facilities as intra-Alberta deliveries,
13 reduces the COH for intra-Alberta deliveries by approximately 20%. Since there
14 is no effect on the ex-Alberta cost for this alternative, the intra-Alberta to ex-
15 Alberta cost ratio is reduced.

16 NGTL examines the rate design implications associated with using these alternatives in
17 sub-section 2.5.3.

Table 2.5.2-1
COH Study and Alternatives

	COH Study	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta COH	635.6	309.6	255.0	471.4	508.2
Ex-Alberta COH	936.4	747.3	626.3	820.7	936.4
Intra-Ex Percent Ratio	67.9%	41.4%	40.7%	57.4%	54.3%

Table 2.5.2-2
Comparison of Alternative Results to the COH Study Results

	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta COH	(326.0)	(380.6)	(164.2)	(127.4)
Ex-Alberta COH	(189.1)	(310.1)	(115.7)	-
Intra-Ex Percent Ratio	(26.5%)	(27.2%)	(10.5%)	(13.6%)

Table 2.5.2-3**Comparison of Alternative Results to the COH Study Results on a Percentage Basis**

	Alt. 1a) Functional Definition	Alt. 1b) Physical Definition (ML >= 24")	Alt. 1c) Physical Definition (ML >= 12")	Alt. 2 Excluding Extraction
Intra-Alberta COH	(51%)	(60%)	(26%)	(20%)
Ex-Alberta COH	(20%)	(33%)	(12%)	-
Intra-Ex Ratio	(26.5%)	(27.2%)	(10.5%)	(13.6%)

2.5.3 Cost of Service Analysis**Q32. What are the rate implications of using the DOH alternatives or the COH alternatives?**

A32. If adopted, each of the alternatives analyzed would change the relationship between the average FT-R rate and the FT-D rate. The amount of change varies among the alternatives. In this sub-section, NGTL illustrates the impact to service rates that would result from the application of the different alternatives. All alternatives utilize the same methodology to allocate costs from Accounts to Functions as described in Q/A 10. The allocation of costs from Functions to Services differs between the alternatives based on the different definitions of mainline. The allocation of costs from Services to Rate Classes also differs between alternatives based on DOH and COH and whether extraction facilities are included. For simplicity, this analysis shows the impacts on only the three major rate classes: FT-A, FT-R and FT-D.

1 **Q33. Please summarize the results of this analysis.**

2 A33. Table 2.5.3-1 shows illustrative FT-R, FT-D, total Ex-Alberta and total Intra-Alberta
3 rates for each alternative analyzed. These illustrative rates have been calculated using the
4 2004 Firm Transportation Revenue Requirement of ~~\$980.7~~\$1,039.1 million from Figure
5 5.1-1 of Section 5 and applying the various cost allocations utilized in each alternative to
6 a simplified rate determination process.

7 The rates shown for FT-R and FT-D under the column entitled “Revised Methodology”
8 are those that NGTL is requesting the Board approve for 2004. Under the existing rate
9 design, the rate for the transmission component of FT-R is set equal to the rate for the
10 transmission component of FT-D. The revised DOH study has been used to validate the
11 reasonableness of the existing rate design methodology.

12 To isolate the impact of the various cost allocations, revenue from all services other than
13 FT-R and FT-D has been held constant. The rate for FT-A is based on the 2002 average
14 unit cost of service for metering, so by definition it is fixed. All other service rates are
15 either fixed or vary in direct proportion to the FT-R or FT-D rates. Therefore, this
16 simplifying assumption will not affect the results of the analysis.

Revised Table 2.5.3-1
Illustrative Rates Resulting from Application of Cost Allocation
Using the DOH & COH Methodologies to Rates Determination
(cents/Mcf/day)

Using DOH	Revised Methodology	Alternative 1a) Functional Mainline Definition	Alternative 1b) Physical Mainline Definition (≥ 24")	Alternative 1c) Physical Mainline Definition (≥ 12")	Alternative 2 Excluding Extraction
Receipt (FT-R) ¹	17.9 18.5	18.2 18.7	21.0 21.6	18.0 18.4	6.7 6.9
Border delivery (FT-D) ¹	17.9 18.5	17.6 18.3	14.8 15.4	17.8 18.6	29.1 30.1
Total Ex-Alberta Rate²	35.8 37.0	35.8 37.0	35.8 37.0	35.8 37.0	35.8 37.0
Intra delivery (FT-A)	1.8	1.8	1.8	1.8	1.8
Total Intra-Alberta Rate³	19.7 20.3	20.0 20.5	22.8 23.4	19.8 20.2	8.5 8.7
<u>Using COH</u>					
Receipt (FT-R) ¹	24.3 25.0	19.3 19.8	21.5 22.1	22.3 22.9	19.4 19.9
Border delivery (FT-D) ¹	11.5 12.0	16.5 17.2	14.3 14.9	13.5 14.1	16.4 17.1
Total Ex-Alberta Rate²	35.8 37.0	35.8 37.0	35.8 37.0	35.8 37.0	35.8 37.0
Intra delivery (FT-A)	1.8	1.8	1.8	1.8	1.8
Total Intra-Alberta Rate³	26.1 26.8	21.1 21.6	23.3 23.9	24.1 24.7	21.2 21.7

¹ FT-R and FT-D rates quoted include the metering charge.

² Total Ex-Alberta Rate is the sum of the FT-R and FT-D rates.

³ Total Intra-Alberta Rate is the sum of the FT-R and FT-A rates.

Table 2.5.3-2 shows the difference between the rates resulting from the application of various options and the rates produced utilizing the DOH revised methodology. The “Using DOH” data in Table 2.5.3-2 shows the change in the rates using the various DOH alternatives and the “Using COH” data show the change in the rates using the COH options. Table 2.5.3-3 shows these same changes but on a percentage basis. The results can be summarized as follows:

- Alternatives 1a), 1b) and 1c) involve segmenting transmission into mainline and lateral components, with the lateral component being aligned with the receipt

1 service and the COH and DOH methodologies being applied only to the mainline
2 component. ~~Under the DOH methodology~~For the most part, these alternatives
3 resulted in higher FT-R and total intra-Alberta rates, lower FT-D rates and
4 unchanged ex-Alberta rates. The change to the FT-D rate is the mirror image of
5 the change to the FT-R rate as these methodologies just shift the same revenue
6 requirement amount from delivery service to receipt service. The increase in the
7 total intra-Alberta rate is the same absolute amount as the increases in the FT-R
8 rate since the intra-Alberta rate is simply the sum of the unchanged FT-A rate and
9 the FT-R rate.

- 10 • Alternative 2 involves no transmission segmentation but extraction facilities have
11 been removed from the COH and DOH calculations. Applying the Alternative 2
12 DOH methodology results in FT-R and total intra-Alberta rates that are ~~4.2~~11.6
13 cents/Mcf lower than rates obtained using the revised DOH methodology.

14 —Applying the Alternative 2 COH methodology provides results opposite to those
15 obtained using the Alternative 2 DOH methodology (i.e., FT-R and intra-Alberta
16 rates increase and the FT-D rate decreases). However, the magnitude of the
17 change is substantially lower than with DOH at only ~~4.5~~1.4 cents/Mcf. With
18 Alternative 2 the gas delivered to extraction facilities is not included in the intra-
19 or ex-Alberta deliveries. This excludes approximately 35% of volumes that have
20 been and are still considered intra-Alberta deliveries. Using this alternative would
21 raise the issue of how to account for these volumes if they are not part of the
22 DOH/COH and are not taken into consideration via an explicit FT-X charge.

- 23 • The results of using the COH study are substantially different from those obtained
24 using the revised DOH methodology. By using the COH methodology, FT-R and
25 total intra-Alberta rates increase and the FT-D rate decreases by ~~6.4~~6.5 cents/Mcf.
26 This represents a ~~36%~~35% increase in the FT-R rate, a corresponding ~~36%~~35%
27 decrease in the FT-D rate and a ~~33%~~32% increase in the total intra-Alberta rate.
28 There is no change to the total ex-Alberta rate.

Revised Table 2.5.3-2
Change in Illustrative Rates Resulting from Application of Cost Allocation
Using the DOH & COH Methodologies to Rates Determination
(cents/Mcf/day)

Using DOH	Revised Methodology	Alternative 1a) Functional Mainline Definition	Alternative 1b) Physical Mainline Definition (≥ 24")	Alternative 1c) Physical Mainline Definition (≥ 12")	Alternative 2 Excluding Extraction
Receipt (FT-R) ¹	0.0	0.3 0.2	3.1	0.1	(11.2) (11.6)
Border delivery (FT-D) ¹	0.0	(0.3) (0.2)	(3.1)	(0.1)	11.2 11.6
Total Ex-Alberta Rate²	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Intra delivery (FT-A)	0.0	0.0	0.0	0.0	0.0
Total Intra-Alberta Rate³	<u>0.0</u>	<u>0.2</u>	<u>3.1</u>	<u>0.1</u>	<u>(11.2)</u> (11.6)
Using COH					
Receipt (FT-R) ¹	6.4 6.5	1.4 1.3	3.6	4.4	1.5 1.4
Border delivery (FT-D) ¹	(6.4) (6.5)	(1.4) (1.3)	(3.6)	(4.4)	(1.5) (1.4)
Total Ex-Alberta Rate²	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Intra delivery (FT-A)	0.0	0.0	0.0	0.0	0.0
Total Intra-Alberta Rate³	<u>6.4</u> 6.5	<u>1.4</u>	<u>3.6</u>	<u>4.4</u>	<u>1.5</u>

¹ FT-R and FT-D rates quoted include the metering charge.

² Total Ex-Alberta Rate is the sum of the FT-R and FT-D rates.

³ Total Intra-Alberta Rate is the sum of the FT-R and FT-A rates.

Totals may not add due to rounding.

Revised Table 2.5.3-3
Percentage Change in Illustrative Rates Resulting from Application of Cost Allocation
Using the DOH & COH Methodologies to Rates Determination
(cents/Mcf/day)

	Revised Methodology	Alternative 1a) Functional Mainline Definition	Alternative 1b) Physical Mainline Definition (≥ 24")	Alternative 1c) Physical Mainline Definition (≥ 12")	Alternative 2 Excluding Extraction
<u>Using DOH</u>					
Receipt (FT-R) ¹	0.0%	1.7% 1.1%	17.3% 16.8%	0.6% 0.5%	(62.6%) (62.7%)
Border delivery (FT-D) ¹	0.0%	(1.7%) (1.1%)	(17.3%) (16.8%)	(0.6%) (0.5%)	62.6% 62.7%
Total Ex-Alberta Rate²	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>
Intra delivery (FT-A)	0.0%	0.0%	0.0%	0.0%	0.0%
Total Intra-Alberta Rate³	<u>0.0%</u>	<u>1.5%</u> 1.0%	<u>15.7%</u> 15.3%	<u>0.5%</u> (0.5%)	<u>56.9%</u> (57.1%)
<u>Using COH</u>					
Receipt (FT-R) ¹	35.8% 35.1%	7.8% 7.0%	20.1% 19.5%	24.6% 23.8%	8.4% 7.6%
Border delivery (FT-D) ¹	(35.8%) (35.1%)	(7.8%) (7.0%)	(20.1%) (19.5%)	(24.6%) (23.8%)	(8.4%) (7.6%)
Total Ex-Alberta Rate²	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>
Intra delivery (FT-A)	0.0%	0.0%	0.0%	0.0%	0.0%
Total Intra-Alberta Rate³	<u>32.5%</u> 32.0%	<u>7.1%</u> 6.9%	<u>18.3%</u> 17.7%	<u>22.3%</u> 21.7%	<u>7.6%</u> 7.4%

¹ FT-R and FT-D rates quoted include the metering charge.

² Total Ex-Alberta Rate is the sum of the FT-R and FT-D rates.

³ Total Intra-Alberta Rate is the sum of the FT-R and FT-A rates.

Numbers may not add due to rounding.

1 Q34. What is NGTL's assessment of these alternatives?

2 A34. All of these alternatives result in a reallocation of costs between receipt and export
3 delivery services.

4 The options under Alternative 1 provide increased cost segregation by introducing
5 various definitions of mainline facilities. However, at the current time there is no clear
6 basis to conclude that any one of these definitions is more appropriate than another.

1 Furthermore, none of these definitions has been agreed to by customers and other
2 stakeholders.

3 If Alternative 2 were implemented, a specific charge for extraction services should also
4 be implemented. This could have a significant impact on commercial arrangements.
5 Customers have indicated their preference to avoid an explicit rate for extraction and for
6 NGTL to continue to recover these costs through other services.

7 The COH methodology has some merit as it takes into account economies of scale as
8 well as distance. However, supporters of the 2003 Tariff Settlement have indicated their
9 preference to maintain the existing relationship between receipt and export delivery rates.
10 Given that 85% of gas travelling on the Alberta System is destined for export and that, on
11 average, volumes transported for delivery in Alberta travel approximately one-half the
12 distance travelled by volumes destined for export from Alberta, equal FT-R and FT-D
13 rates continue to be appropriate.

14 While NGTL acknowledges that each of the alternatives may have some merit, no one
15 alternative is clearly more appropriate than the existing methodology at this time. In
16 addition, several of the alternatives, if adopted, would have significant distributional
17 effects on Alberta System customers. While the current rate design is not cast in stone,
18 there is currently no compelling reason for change.

2.6 ANALYSIS OF SPLITTING LATERAL PIPELINES INTO RECEIPT AND DELIVERY

Q35. What is the purpose of the evidence in this sub-section?

A35. In this section NGTL addresses the Board's directive in Decision 2003-051¹³ to provide an analysis that splits lateral pipelines into receipt and delivery components.

The Alberta System is an integrated system and therefore the costs of all facilities are rolled-in for the purpose of determining rates. In addition, as of 2000, NGTL no longer constructs lateral pipelines. NGTL, therefore, questions the relevance of performing an analysis that segregates the costs of lateral pipelines into receipt and delivery components. However, to be responsive to the Board's request, NGTL has conducted an analysis of the cost of certain delivery pipelines.

Q36. Please describe the analysis NGTL conducted in response to the Board's directive.

A36. In calculating receipt point specific prices, NGTL uses algorithms that utilize all pipe between receipt points and the major border delivery points of Empress, McNeill and Alberta/BC. In this sub-section, NGTL analyzed the costs associated with delivery pipes that are not included in this algorithm. These pipes consist of small border, intra-Alberta, extraction and storage pipes. NGTL performed this analysis by identifying the small border, intra-Alberta, extraction and storage pipes and then extracting the related costs in the third step of the 2002 COS Study (i.e., summarization by services where the costs are at the individual pipeline asset level) as described in Q/A 10. The analysis includes the costs of both mainline and lateral pipes.

The results of this analysis demonstrate that the total costs of these delivery pipes are relatively small. Therefore, NGTL believes that it would be of no additional analytical value to further divide the total cost of the delivery pipes into mainline and lateral components.

¹³ EUB Decision 2003-051 (June 24, 2003), Appendix 5.

- 1 **Q37. Please summarize the results of NGTL's analysis.**
- 2 A37. The results of the analysis are shown in Tables 2.6-1 through 2.6-4.

Table 2.6-1
Delivery Pipes Not Associated with Major Border Deliveries
Summary of Assets

<u>Pipes Serving:</u>	<u>Net Book Value at Dec. 31, 2002 (\$ millions)</u>	<u>Length (miles)</u>	<u>Total Cost (\$ millions)</u>
Small Border	0.4	57	1.7
Intra-Alberta	6.5	85	2.6
Extraction	8.5	6	2.1
Storage	<u>34.6</u>	<u>71</u>	<u>9.6</u>
Total	<u>50.0</u>	<u>219</u>	<u>16.0</u>

Allocated amounts less than \$100,000 appear as 0.0 due to rounding.

Table 2.6-2
Delivery Pipes Not Associated With Major Border Deliveries
Direct Costs
(\$ millions)

<u>Cost Item</u>	<u>Small Border</u>	<u>Intra</u>	<u>Extraction</u>	<u>Storage</u>	<u>Total</u>
Operating Return	0.1	0.7	0.8	3.7	5.3
Depreciation	0.1	0.5	0.4	1.5	2.4
Municipal Tax	0.3	0.1	0.0	0.4	0.8
Income Tax	0.0	0.3	0.3	1.4	1.9
TBO	0.0	0.0	0.0	0.0	0.0
Maintenance	<u>0.1</u>	<u>0.1</u>	<u>0.0</u>	<u>0.1</u>	<u>0.2</u>
Total Direct Costs	<u>0.5</u>	<u>1.7</u>	<u>1.6</u>	<u>7.0</u>	<u>10.7</u>

Allocated amounts less than \$100,000 appear as 0.0 due to rounding.

Table 2.6-3
Delivery Pipes Not Associated with Major Border Deliveries
General Plant, Working Capital and G&A

(\$ millions)

<u>General Plant, Working Capital and G&A</u>	<u>Small Border</u>	<u>Intra</u>	<u>Extraction</u>	<u>Storage</u>	<u>Total</u>
General Operating Assets	0.0	0.0	0.0	0.0	0.0
Calgary Offices	0.1	0.0	0.0	0.0	0.1
Field/Service Centers, Vehicles	0.0	0.1	0.0	0.1	0.2
Patrol	0.0	0.0	0.0	0.0	0.0
Information Technology	0.1	0.1	0.0	0.1	0.3
General plant total	<u>0.2</u>	<u>0.2</u>	<u>0.0</u>	<u>0.2</u>	<u>0.7</u>
Cash Working Capital	0.1	0.1	0.0	0.1	0.3
Material & Supplies Inventory	0.0	0.0	0.0	0.0	0.0
Linepack Gas	0.0	0.0	0.0	0.0	0.1
Unamortized Debt Issue Costs	0.0	0.0	0.0	0.0	0.1
Working capital total	<u>0.2</u>	<u>0.1</u>	<u>0.0</u>	<u>0.1</u>	<u>0.4</u>
Information Technology	0.1	0.1	0.0	0.1	0.2
Customer Service	0.0	0.0	0.0	0.0	0.1
Other Departments	0.1	0.1	0.0	0.1	0.2
General Expenses	0.3	0.2	0.0	0.2	0.7
Other Expenses	0.0	0.0	0.0	0.0	0.1
G&A total	<u>0.5</u>	<u>0.4</u>	<u>0.0</u>	<u>0.4</u>	<u>1.3</u>
General Plant, Working Capital and G&A	<u>0.9</u>	<u>0.8</u>	<u>0.1</u>	<u>0.7</u>	<u>2.4</u>

Allocated amounts less than \$100,000 appear as 0.0 due to rounding.

Table 2.6-4
Delivery Pipes Not Associated with Major Border Deliveries
Summary of All Costs

(\$ millions)

	<u>Direct Costs</u>	<u>Gen. Plant & Working Capital and G&A</u>	<u>Total Costs by Function</u>	<u>Allocated Compression</u>	<u>Total Costs by Service</u>	<u>Percent of Total</u>
Small border	0.5	0.9	1.3	0.4	1.7	11%
Intra-Alberta	1.7	0.8	2.4	0.2	2.6	16%
Extraction	1.6	0.1	1.6	0.4	2.1	13%
Storage	<u>7.0</u>	<u>0.7</u>	<u>7.7</u>	<u>1.9</u>	<u>9.6</u>	<u>60%</u>
Totals	<u>10.7</u>	<u>2.4</u>	<u>13.1</u>	<u>2.9</u>	<u>16.0</u>	<u>100%</u>

Q38. What do the results of NGTL's analysis show?

A38. Comparing the results of Table 2.6-1 to the total transmission results shown in Table 1 of Appendices E to N in this section demonstrates that the delivery pipes not associated with major border deliveries represent a very small percentage of the total pipes; only about 1.6% of the total NBV and total length and about 1.4% of the total transmission cost of service (\$16 million out of \$1,185 million of total pipe cost). Categorized by individual type of delivery service, the percentages are even smaller. For example, the costs of pipes used for intra-Alberta delivery represent about 0.2% of the total transmission costs. At this time, the cost of these delivery pipes is not significant enough to be included as a separate component in the rates for transportation service. This would also be the case if the cost for these pipes was further segmented into mainline and lateral components.

Q39. Given that there is no specific component in the FT-A rate for the cost of transmission, how are these costs recovered?

A39. The costs associated with pipe used only for intra-Alberta deliveries, as well as the costs of pipe associated with storage and extraction costs, are recovered through a Facility Connection Service (FCS) charge or in the rates for other services. Currently 83 percent of the NBV associated with pipes used for intra-Alberta deliveries is covered by FCS agreements.¹⁴

Q40. How are customers that are responsible for the construction of intra-Alberta delivery facilities accountable for the cost of such facilities?

A40. An FCS agreement ensures that customers responsible for the construction of intra-Alberta delivery facilities are accountable for the cost of such facilities. Under the FCS agreement, revenues covering the costs of facilities are generated:

- a) indirectly through receipt services;

¹⁴ The remaining 17 percent of the NBV represents the cost of pipe that is currently used for intra-Alberta delivery but was originally constructed in conjunction with receipt meter stations that have since been retired.

1 b) directly through FT-A and FT-P services or a direct FCS Charge; or

2 c) through a combination of (a) and (b).

3 Each year an Annual Cost of Service (ACS), which includes operating costs, maintenance
4 costs, municipal taxes, depreciation, income taxes and return on ratebase, is calculated for
5 each FCS agreement. A Minimum Annual Volume (MAV) is then calculated for each
6 FCS agreement based on the respective ACS to establish a threshold level that is used to
7 determine if a particular facility has been sufficiently utilized to recover costs.

8 If at the end of the year the MAV or greater has been delivered to the intra-Alberta
9 delivery facility, then the threshold level has been met and the facility is deemed to have
10 been sufficiently utilized. As a result, sufficient revenue will have been generated
11 through FT-A, FT-P or the receipt services to recover the costs associated with the intra-
12 Alberta delivery facility. If this is the case, the FCS Charge would be zero.

13 If no volumes were delivered through the intra-Alberta delivery facility, the FCS Charge
14 would be equivalent to the ACS as no revenue was generated through FT-A, FT-P or
15 receipt services. For volumes delivered through the intra-Alberta delivery facility
16 between zero and the MAV, the FCS Charge would be the portion of the ACS that was
17 not recovered through revenue from other services. For example, if
18 75 percent of the MAV was delivered, the FCS Charge would be equivalent to 25 percent
19 of the ACS.

20 **Q41. Are there any changes required to FCS at this time?**

21 A41. No. FCS was significantly modified in the 2003 Tariff Settlement to increase the
22 accountability for intra-Alberta delivery facilities, extraction facilities and storage
23 facilities. These modifications continue to be appropriate at this time.

2.7 ANALYSIS OF METERING SERVICE COSTS

Q42. What is the purpose of the evidence in this sub-section?

A42. In this evidence NGTL addresses the Board's directive in Decision 2003-051¹⁵ to provide an analysis of metering service costs disaggregated into receipt, export, intra-Alberta, storage and extraction metering service costs.

Q43. What analysis did NGTL complete in response to this request?

A43. NGTL analyzed the costs associated with receipt meter stations and the four types of delivery meter stations (border, intra-Alberta, extraction and storage) on the Alberta System. The intra-Alberta delivery metering costs were then further divided into three categories based on the type of primary customer at each meter station: industrial, producer or utility.

NGTL identified all of the meter stations by type and extracted the related costs in the third step of the 2002 COS Study (i.e. summarization by services where the costs are at the individual pipeline asset level) as described in Q/A 10.

¹⁵ Decision 2003-051 (June 24, 2003), Appendix 5.

- 1 **Q44. Please summarize the results of NGTL's analysis.**
- 2 A44. The results of the analysis are shown in Tables 2.7-1 through 2.7-5.

Revised Table 2.7-1
Analysis of Metering Service Costs
Summary of Metering Assets
(\$ millions)

	Net Book Value at Dec. 31, 2002	# of stations	Total cost
Receipt	263.7	937	128.1
Border	28.4	10	6.2
Intra:			
Industrial	9.8 9.3	20 19	3.3 3.2
Producer	21.6	88	11.3
Utility	13.4 13.7	36 37	5.8 6.0
Subtotal	44.6	144	20.5
Storage	13.3	12	0.9 3.4
Extraction	1.4	6	3.4 0.9
Totals	<u>351.4</u>	<u>1,109</u>	<u>159.1</u>

Allocated amounts less than \$100,000 appear as 0.0 due to rounding.
Numbers may not add due to rounding.

Revised Table 2.7-2
Analysis of Metering Service Costs
Direct Costs
(\$ millions)

Cost item	Receipt	Border	Intra-Alberta				Extraction	Storage	Total
			Industrial	Producer	Utility	Subtotal			
Operating Return	26.1	2.8	4.0 0.9	2.1	1.3 1.4	4.4	0.1	1.3	34.8
Depreciation	10.5	1.3	0.2 0.1	0.8	0.9	1.9	0.1	0.5	14.3
Municipal Tax	1.6	0.1	0.0	0.1	0.1	0.2	0.0	0.0	2.0
Income Tax	9.5	1.0	0.4 0.3	0.8	0.5	1.6	0.1	0.5	12.7
TBO	-	-	-	-	-	-	-	-	-
Maintenance	24.8	0.4	0.6	2.2	0.9 1.0	3.8	0.2	0.3	29.5
Total Direct Costs	<u>72.6</u>	<u>5.6</u>	<u>2.2 2.0</u>	<u>6.1</u>	<u>3.7 3.8</u>	<u>11.9</u>	<u>0.5</u>	<u>2.7</u>	<u>93.3</u>

Allocated amounts less than \$100,000 appear as 0.0 due to rounding.
Numbers may not add due to rounding.

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Revised Table 2.7-3
Analysis of Metering Service Costs
General Plant, Working Capital and G&A Costs
(\$ millions)

<u>Cost item</u>	<u>Receipt</u>	<u>Border</u>	<u>Intra-Alberta</u>				<u>Extraction</u>	<u>Storage</u>	<u>Total</u>
			<u>Industrial</u>	<u>Producer</u>	<u>Utility</u>	<u>Subtotal</u>			
General Operating Assets	2.3	0.0	0.0	0.2	0.1	0.3	0.0	0.0	2.7
Calgary Offices	1.1	0.0	0.0	0.1	0.0	0.2	0.0	0.0	1.3
Field/Service Centers, Vehicles	7.6	0.1	0.2	0.7	0.3	1.2	0.0	0.1	9.0
Patrol	-	-	-	-	-	-	-	-	0.0
Information Technology	18.8	0.2	0.4	1.8	0.7	2.9	0.1	0.2	22.3
General plant total	29.7	0.3	0.6	2.8	1.1	4.6	0.2	0.4	35.2
Cash Working Capital	1.5	0.0	0.0	0.1	0.1	0.2	0.0	0.0	1.8
Material & Supplies Inventory	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Linepack Gas	-	-	-	-	-	-	-	-	0.0
Unamortized Debt Issue Costs	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Working capital total	2.1	0.0	0.0	0.2	0.1	0.3	0.0	0.0	2.5
Information Technology	10.6	0.1	0.2	1.0	0.4	1.6	0.1	0.1	12.5
Customer Service	7.8	0.1	0.2	0.7	0.3	1.2	0.1	0.1	9.3
Other Departments	1.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	1.1
General Expenses	3.8	0.0	0.1	0.4	0.4	0.6	0.0	0.0	4.5
Other Expenses	0.5	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6
G&A total	23.7	0.3	0.5	2.2	0.9	3.6	0.2	0.3	28.0
Total General plant, Working capital & G&A	55.5	0.6	1.2	5.2	2.4	8.5	0.4	0.7	65.7

Allocated amounts less than \$100,000 appear as 0.9 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

[Numbers may not add due to rounding.](#)

Revised Table 2.7-4
Analysis of Metering Service Costs
Summary of All Costs
(\$ millions)

	<u>Receipt</u>	<u>Border</u>	<u>Intra-Alberta</u>				<u>Extraction</u>	<u>Storage</u>	<u>Total</u>
			<u>Industrial</u>	<u>Producer</u>	<u>Utility</u>	<u>Subtotal</u>			
Direct Costs	72.6	5.6	2.2	6.1	3.7	11.9	0.5	2.7	93.3
G&A Costs	55.5	0.6	1.2	5.2	2.4	8.5	0.4	0.7	65.7
Total Costs	128.1	6.2	3.3	11.3	6.1	20.5	0.9	3.4	159.1

[Numbers may not add due to rounding.](#)

Revised Table 2.7-5
Analysis of Metering Service Costs
Intra-Alberta - Summary Results

<u>Category</u>	<u>Total Cost in \$ millions</u>	<u>Cost as % of total</u>	<u>Volume in MMcf/day</u>	<u>Volume as % of total</u>	<u>Unit Cost in cents per Mcf</u>
Industrial	3.3 3.2	46% 15%	432.7 360.6	52% 44%	2.42 2.41
Producer	11.3	55%	241.5	29%	12.85
Utility	5.8 6.0	28% 29%	153.6 225.8	19% 27%	10.36 7.26
Total	<u>20.5</u>	<u>100%</u>	<u>827.9</u>	<u>100%</u>	<u>6.78</u>

Q45. What do the results of NGTL's analysis show?

A45. Meter stations represent less than 7% of the total Alberta System NBV and less than 12% of the total Alberta System service costs (\$159 million out of \$1,344 million). Categorized by the type of station, these percentages are even smaller. For example, the costs of intra-Alberta delivery stations represent only about 1.5% of the total service costs, and less than 13% of the total metering service costs.

As metering represents approximately 12% of total costs, metering may be considered material enough to be explicitly recognized in the rate design. However, the cost of each sub-category of metering service is not material for this purpose.

As Table 2.7-5 demonstrates, among intra-Alberta delivery stations alone, there is large variability between the costs of metering facilities. For example, the unit cost of service for meters used by producers and utilities is ~~six-five~~ and ~~five-three~~ times respectively, the cost of the industrial category. This demonstrates the variability associated with segmenting the metering costs. In addition, NGTL understands that its customers do not want the IT-S and FT-X services to explicitly account for their respective metering costs at this time. For these reasons, NGTL is continuing to use a standard metering charge, to be included in all receipt, delivery and FT-P rates.

2.8 SUMMARY AND CONCLUSIONS

Q46. Please summarize NGTL's evidence and its position on its existing rate design.

A46. NGTL has determined it is appropriate to maintain the existing rate design at the current time.

NGTL's existing rate design has the attributes required of a sound rate design. It is fair and equitable, encourages efficiencies, provides appropriate revenue and rate stability, is consistent with other policies and regulations, is simple and understandable, and is generally accepted by NGTL's customers and stakeholders.

NGTL believes its rate design has evolved significantly in recent years to incorporate increased customer cost accountability and better cost allocation methodologies. For example, NGTL implemented receipt point specific pricing in 2000 for receipt services. This change better reflects the costs of providing service at specific points than the previous postage stamp rate design. In 2003, NGTL implemented several changes that increased customer cost accountability for intra-Alberta delivery services. These changes were: a metering charge for FT-A, changes to the MAV requirements for FCS, implementation of FT-P and the introduction of an EAV obligation for mainline extensions associated with intra-Alberta deliveries.

However, it is important to recognize that the Alberta System is a highly integrated system. Integration exists on physical, operational and commercial levels and yields economies of scale that provide broad benefits to NGTL's customers. Despite the benefits, integration also makes it difficult, if not impossible, to determine the actual costs of providing particular services. Consequently, it is appropriate to aggregate the costs of facilities and utilize cost allocation methodologies to determine service rates. In this context, the revised Distance of Haul study NGTL conducted remains an appropriate tool to validate the reasonableness of the existing rate design under which the average rate for FT-R is equal to the rate for FT-D.

1 NGTL also believes that the existing rate design is acceptable at this time to the majority
2 of NGTL's customers and stakeholders. The rate design is the product of the 2003 Tariff
3 Settlement, which was achieved following extensive discussions with interested parties.
4 The parties who participated in these discussions represented a broad cross section of
5 interests and included export shippers, industrial and commercial end-users, marketers,
6 producers and storage operators.

7 The 2003 Tariff Settlement, by definition, represented a compromise of interests. It is
8 not reasonable to expect that the rate design resulting from the Settlement, or any rate
9 design for that matter, fully satisfies the interests of all affected parties. However, the
10 Settlement does represent an appropriate balance of interests which could be upset if
11 specific components of the rate design are changed at this time.

12 It is also important to recognize that the 2003 Tariff Settlement, and the existing rate
13 design that resulted from it, has been in effect for only a short period of time. The Board
14 approved the Settlement on June 24, 2003 and NGTL implemented the existing rate
15 design on October 1, 2003. It is appropriate to give this rate design a "chance" by
16 continuing it in 2004 before considering further amendments. Continuation of the design
17 in 2004 will also provide a measure of rate stability, which NGTL understands is
18 important to its customers.

19 Lastly, NGTL acknowledges the commitment of the parties to the 2003 Tariff Settlement
20 to review NGTL's cost allocation, rate design and services by October 1, 2006, which is
21 36 months after the implementation of the existing rate design. NGTL remains
22 committed to this review, which will include an assessment of the effectiveness of the
23 changes agreed to in the 2003 Tariff Settlement and the impact of these changes on all
24 NGTL's services. NGTL will also, as part of this review, make recommendations, if
25 required, for amendments to the rate design. The results of the review will be considered
26 through an open, collaborative process and a report will be filed with the Board.

27 **Q47. Does this conclude NGTL's evidence in this section?**

28 A47. Yes.

1 **APPENDIX A: DISTANCE OF HAUL STUDY - REVISED METHODOLOGY**
2 **2002 CALENDAR YEAR**



NOVA Gas Transmission Ltd.

Distance of Haul Study
Revised Methodology
2002 Calendar Year

November 2003

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1. SUMMARY

The purpose of this distance of haul study ("DOH Study") is to determine average distances of haul for transportation of gas on the Alberta System during a particular calendar year. This Study is for the 2002 calendar year.

The results for 2002 indicate that the average distance of haul for:

- intra-Alberta deliveries was 255.8 km;
- ex-Alberta deliveries was 569.4 km; and
- all deliveries (intra-Alberta and ex-Alberta) was 535.6 km.

The average intra-Alberta DOH is 44.9% of the average DOH for ex-Alberta deliveries.

2. OBJECTIVES

The objectives of this study are to:

- calculate the average distance of haul for intra-Alberta deliveries;
- calculate the average distance of haul for ex-Alberta deliveries;
- calculate the ratio of the intra-Alberta DOH to the ex-Alberta DOH; and
- compare the ratio and averages to those of the DOH studies of previous years.

3. METHODOLOGY

For each month, a hydraulic simulation is performed to balance the gas received at each receipt point against the volume of gas delivered to each delivery point on the Alberta System. The flows are balanced based on the operating parameters and conditions employed on the Alberta System during that month. From this, the flow path from each receipt meter station to its associated downstream delivery stations can be determined. By reversing direction, the flow path to each delivery station can also be determined. Based on this hydraulic simulation, the distances of haul are calculated using the following steps:

- 1) The flow of gas is tracked in the reverse direction of the actual flow through all pipes from each delivery station to all upstream receipt stations that contribute flows to the delivery station. For each pipe in the system the following information is recorded:
 - the length of this pipe; and
 - the percent of volume at each downstream delivery station that was transported through this pipe. This is called the delivery station flow fraction. Each pipe gets a delivery station flow fraction for each downstream delivery station whose path it is in.

- 2) The distance of haul of a delivery station for the month is calculated by summing, for all pipes that have a delivery station flow fraction for that delivery station, the product of:
 - the length of the pipe; and
 - the delivery station flow fraction.

The monthly DOH for the delivery station is recorded. This process is repeated for every delivery station for all 12 months.

- 3) The overall annual average DOH for a delivery station is determined by:
 - summing the product of the monthly DOH and actual delivered volume (the "Volume-Distance") over all 12 months and
 - dividing this sum by the actual delivery station volume for the year.This process is repeated for each delivery station.

- 4) The average distance of haul for intra-Alberta deliveries, ex-Alberta deliveries and total deliveries is calculated by:
 - summing the product of the overall annual DOH and total yearly volume for all stations in each group and
 - dividing this sum by the actual total volume for the year for all stations in each group.

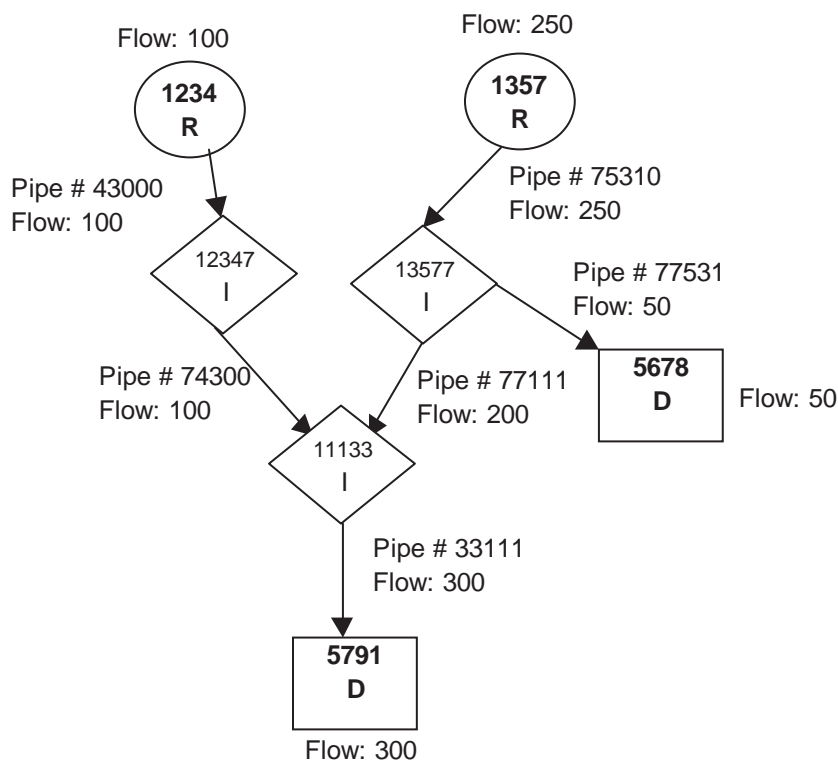
4. ILLUSTRATIVE EXAMPLE

The following is a detailed illustrative example of calculating the distance of haul for delivery stations in a simplified network. The actual delivery stations on the Alberta System have much more complex paths. Nevertheless, their DOH is calculated in exactly the same way as described in this simplified example.

In this example the network is composed of two receipt meter stations (R) and two delivery stations (D). There are 6 pieces of pipe and three intermediate nodes (I) that join different pipes together. All stations, intermediate nodes and pipes have their unique identification number. Two of those intermediate nodes are junctions. For this example, assume that the following flows in 10^3m^3 occurred at those stations for the month of January:

Meter station number	Meter station type	Meter station flow in January
1234	R	100
1357	R	250
5678	D	50
5791	D	300

From the hydraulic simulation based on the above actual flows at the meter stations, the following schematic could be derived.



At this stage of the methodology the recording spreadsheet would look like Table #1.

Table #1

Pipe #	January flow
43000	100
74300	100
75310	250
77531	50
77111	200
33111	300

In Step 1 of the methodology, the length of each pipe and the delivery flow fractions for each delivery meter station at each pipe would be recorded. The flow fraction for a particular delivery station at a particular pipe is calculated as follows:

- Flow fraction = Sum of delivery station flow fraction on links leaving downstream node * flow on current link / sum of flows on all links entering downstream node.

For example, the delivery flow fraction for pipe 33111 for station 5791 is 1.0000 (or 100% of the flow) as it is the first pipe or link. The delivery flow fraction for pipe 77111 for station 5791 is $1.0000 \times (200 / (200 + 100)) = 0.6667$ and the delivery flow fraction for pipe 75310 for station 5791 is $0.6667 \times (250 / 250) = 0.6667$; that means that 67% of the volume for station 5791 flows through pipe 77111 and 75310 (the other 33% of the volume would come from a different path – pipes 43000 and 74300). At the end of Step 1 the recording spreadsheet for this example would look like Table #2.

Table #2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)/(7)
Delivery Station	Pipe #	D/S Node	Flow Fraction on Links Leaving D/S Node	Flow on Current Link	Links Entering D/S Node	Flows from Links Entering D/S Node	Flow Fraction
5791	33111	5791	1.0000	300	33111	300	1.0000
	77111	11133	1.0000	200	77111,74300	300	0.6667
	74300	11133	1.0000	100	77111,74300	300	0.3333
	43000	12347	0.3333	100	43000	100	0.3333
	77531	5678	0.0000	50	77531	50	0.0000
	75310	13577	0.6667	250	75310	250	0.6667
5678	33111	5791	0.0000	300	33111	300	0.0000
	77111	11133	0.0000	200	77111,74300	300	0.0000
	74300	11133	0.0000	100	77111,74300	300	0.0000
	43000	12347	0.0000	100	43000	100	0.0000
	77531	5678	1.0000	50	77531	50	1.0000
	75310	13577	1.0000	250	75310	250	1.0000

All the information required to calculate the DOH for each delivery station for the illustrative month of January is now available. After Step #2 of the methodology for the month of January, the recording spreadsheet would look like Table #3.

Table #3

(1)	(2)	(3)	(4)	(5)	(6)=(3)*(4)	(7)=(3)*(5)
Pipe #	January flow	Length in km	Delivery 5678 flow fractions	Delivery 5791 flow fractions	DOH for 5678 in km	DOH for 5791 in km
43000	100	2	0.0000	0.3333	-	0.7
74300	100	5	0.0000	0.3333	-	1.7
75310	250	10	1.0000	0.6667	10.0	6.7
77531	50	3	1.0000	0.0000	3.0	-
77111	200	15	0.0000	0.6667	-	10.0
33111	300	5	0.0000	1.0000	-	5.0
				Total DOH	13.0	24.0

The DOH calculations for the remaining months (February to December) would be done exactly the same way as demonstrated above. For this example assume that at the end of the year, the monthly results have been obtained for station 5791 as shown in columns 2 to 4 and station 5678 as shown in columns 5 to 7 of Table #4. By following Step 3, the overall volume weighted average annual DOH for each delivery station can be derived as shown at the bottom of Table #4. It should be noted that the DOH for meter station 5678, is not volume dependent so will always be 13 km as only gas from receipt meter station 1357 via pipe 75310 (10 km) and pipe 77531 (3 km) is physically available. The DOH for station 5791 is volume dependant and does change from month to month as flow fractions for pipe in the station's path change.

Table #4

(1)	(2)	(3)	(4)=(2)*(3)	(5)	(6)	(7)=(5)*(6)
	Meter station 5791			Meter station 5678		
	DOH	Volume	Volume-Distance	DOH	Volume	Volume-Distance
	(km)	(10³m³)	(10³m³ * km)	(km)	(10³m³)	(10³m³ * km)
Jan	24.0	300	7,200	13.0	50	650
Feb	23.0	350	8,050	13.0	75	975
Mar	24.1	400	9,640	13.0	75	975
Apr	20.0	350	7,000	13.0	50	650
May	22.5	300	6,750	13.0	50	650
Jun	22.5	300	6,750	13.0	50	650
Jul	23.0	320	7,360	-	-	-
Aug	24.0	340	8,160	13.0	50	650
Sep	24.2	350	8,470	13.0	50	650
Oct	22.7	300	6,810	13.0	50	650
Nov	21.3	310	6,603	13.0	50	650
Dec	22.4	310	6,944	13.0	50	650
Total		3,930	89,737		600	7,800
Annual Average	22.8			13.0		

In accordance with Step 4, the volume-weighted average annual distance of haul for all delivery stations, which in this example is two delivery stations, would be calculated as follows:

$$(22.8 * 3,930 + 13 * 600) / (3,930 + 600) = 21.5 \text{ km}$$

5. RESULTS

Table 5.1 contains the DOH results for 2002. The average distance of haul for:

- intra-Alberta deliveries was 255.8 km; and
- ex-Alberta deliveries was 569.4 km.

For 2002, the average distance of haul for intra-Alberta deliveries is 44.9% of the average distance of haul for ex-Alberta deliveries.

Table 5.2 compares the annual results for 2002, using the revised methodology described in this report, against the results of studies from previous years. The results for 2002 do not vary significantly from previous years.

TABLE 5.1
RESULTS FOR 2002

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	2002
Aver. Intra-Alberta distance (km)	227	246	237	252	277	289	294	281	273	254	249	234	255.8
Aver. Ex-Alberta distance (km)	535	555	560	603	603	600	592	581	576	560	550	524	569.4
Aver. Ex-Alberta to Intra-Alberta Ratio	2.4:1	2.3:1	2.4:1	2.4:1	2.2:1	2.1:1	2.0:1	2.1:1	2.1:1	2.2:1	2.2:1	2.2:1	2.2:1
Aver. Intra-Alberta to ex-Alberta Ratio	43%	44%	42%	42%	46%	48%	50%	48%	47%	45%	45%	45%	44.9%

TABLE 5.2
RESULTS FROM 1988 to 2002

	2002	2001	2000	1999	1998	1997	1996	1995
Aver. Intra-Alberta distance (km)	255.80	266.18	267.56	265.49	253.32	245.78	247.00	249.54
Aver. ex-Alberta distance (km)	569.38	564.03	548.68	554.91	547.88	541.83	531.68	553.61
Aver. Ex-Alberta to intra-Alberta Ratio	2.23:1	2.12:1	2.05:1	2.09:1	2.16:1	2.20:1	2.15:1	2.22:1
Aver. Intra-Alberta to ex-Alberta % Ratio	44.93%	47.19%	48.76%	47.84%	46.24%	45.36%	46.46%	45.07%

	1994	1993	1992	1991	1990	1989	1988
Aver. Intra-Alberta distance (km)	234.03	229.68	219.86	224.13	224.94	198.80	209.46
Aver. ex-Alberta distance (km)	540.77	532.74	517.58	496.19	477.48	445.47	442.10
Aver. Ex-Alberta to intra-Alberta Ratio	2.31:1	2.32:1	2.35:1	2.21:1	2.12:1	2.24:1	2.11:1
Aver. Intra-Alberta to ex-Alberta % Ratio	43.28%	43.11%	42.48%	45.17%	47.11%	44.63%	47.38 %

NOTES:

- The year 2002 is calculated using the revised methodology whereas all other years are calculated using the existing methodology
- All studies are based on the calendar year except 1988 which is based on volumetric data collected over a 12-month period ending September 30, 1988.

6. DIFFERENCES BETWEEN THE REVISED AND EXISTING DOH STUDIES

Table 6.1 compares the results of the revised DOH Study and the existing DOH Study. The annual DOH for both intra-Alberta and ex-Alberta and the ratio of the average intra-Alberta DOH to the average ex-Alberta DOH is lower in this study than in the existing study. The intra-Alberta DOH is 5.4% lower, the ex-Alberta DOH is 2.6% lower and the ratio of intra-Alberta DOH to ex-Alberta DOH is 1.4 percentage points lower. However the differences are not significant and the results are consistent with previous years.

The differences are primarily attributable to the removal of some simplifying assumptions that were made in the existing DOH Study. Specifically, three major simplifying assumptions have been eliminated:

- All intra-Alberta and ex-Alberta delivery volumes are now included instead of a representative sample of approximately 80% of the volume for intra-Alberta, 99% of the volume for ex-Alberta;
- The flow pattern is now based on the typical operation of the pipeline system for each month instead of being based on the annual flow of a typical day during the year; and
- The flow is now based on a hydraulic simulation that explicitly balances the receipts and deliveries based on the actual system configuration instead of assuming that all receipt stations in a geographical area have access to downstream delivery stations regardless of connectivity or size of facility.

The results of this DOH Study are reasonable compared to the results of the existing DOH Study and are more accurate as simplifying assumptions used in the existing study have been eliminated.

TABLE 6.1
COMPARISON OF ANNUAL RESULTS

	2002 Revised DOH Study Results	2002 Original DOH Study Results	Difference between Studies	% Difference from Original Study
Aver. Intra-Alberta distance (km)	255.8	270.5	(14.7)	(5.4%)
Aver. ex-Alberta distance (km)	569.4	584.8	(15.4)	(2.6%)
Aver. Ex-Alberta to Intra-Alberta Ratio	2.2:1	2.16:1		
Aver. Intra-Albert to ex-Alberta Ratio	44.9%	46.3%	-1.4 percentage points	

7. APPENDIX – COH FOR EACH DELIVERY STATION

COH for Ex-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
1250	UNITY BORDER	328,909	767.7	252,508,039
1417	COLD LAKE BDR	288,330	491.0	141,565,554
1958	EMPRESS BORDER	58,917,880	972.8	57,314,008,298
2001	ABC SALES #1	10,971,008	772.8	8,478,403,968
2002	ALBERTA-MONTANA	96,193	452.5	43,530,530
2004	ABC SALES #2	10,990,813	759.7	8,350,106,978
3886	GORDONDALE BDR	18,743	471.8	8,843,668
6404	MCNEILL BORDER	21,910,898	1,028.2	22,528,584,301
8002	ESTHER DELIVERY	51,243	238.4	12,215,328
8003	MERIDIAN LK DLV	158,530	7.6	1,199,995
	Subtotal for ex-Alberta deliveries	103,732,548	936.4	97,130,966,659

COH for Intra-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
2360	COCHRANE EXTRCT	1,385,864	609.0	844,023,519
3050	SARATOGA SALES	4,768	661.8	3,155,770
3051	SIMONETTE SALES	658	0.4	265
3052	COLEMAN SALES	4,439	768.3	3,410,514
3053	SUNDRE SALES	5,187	474.3	2,460,197
3058	LUNDBRECK-COWLE	1,247	356.1	444,139
3059	ALLISON CRK SLS	6,152	767.3	4,720,119
3060	CARROT CREEK SL	10,943	658.6	7,206,988
3061	PEMBINA SALES	30,835	389.2	12,001,442
3062	E. CALGARY B SL	42,001	1.5	64,077
3063	VIRGINIA HLS SL	2,328	288.1	670,639
3065	RAT CREEK SALES	-	-	-
3067	BIGSTONE SALES	4,840	102.2	494,604
3068	BEAVER HILL SLS	27	339.9	9,178
3069	WILSON CRK S SL	4,114	94.0	386,571
3071	CYNTHIA SALES	-	-	-
3072	PADDY CREEK SLS	48,820	34.4	1,677,013
3073	PRIDDIS SALES	26,542	619.0	16,428,893
3074	WATERTON SALES	205,154	0.0	3,628
3076	RAINBOW SALES	96	1.5	146
3077	FIRE CREEK SALE	6,165	1,048.6	6,464,612
3078	JUDY CREEK SALE	-	-	-
3080	LOUISE CREEK SL	1,230	287.8	354,116
3082	ELK RIVER S SLS	-	-	-
3083	RAINBOW LK SLS	-	-	-

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3086	PINE CREEK SLS	5,275	40.1	211,609
3087	GOLD CREEK SLS	11,875	39.4	468,298
3088	VALHALLA SALES	3,000	208.1	624,360
3089	QUIRK CREEK SLS	-	-	-
3091	OUTLET CREEK SL	127	2.0	253
3092	MOOSEHORN R SLS	22,198	25.1	558,001
3093	HARMATTAN-LEDUC	-	-	-
3094	BRAZEAU N SALES	101	91.1	9,157
3095	SAKWATAMAU SALE	24,301	10.5	255,763
3097	CHICKADEE CK SL	22,764	26.2	595,749
3098	DUTCH CREEK SLS	-	-	-
3099	SOUSA CRK E SLS	5,382	2.5	13,320
3100	HEART RIVER SLS	12,035	0.0	241
3101	CAROLINE SALES	204	247.0	50,332
3103	VIRGO SALES	4,173	16.0	66,721
3105	CRANBERRY LK SL	120,265	56.6	6,807,808
3106	CARMON CREEK SL	224	74.6	16,713
3107	FERGUSON SALES	36,225	79.4	2,875,646
3109	CALDWELL SALES	4,225	54.0	228,003
3110	MARSH HD CR W S	6,345	367.8	2,333,898
3111	MINNOW LK S. SL	1,825	8.1	14,701
3112	FALHER SALES	24,539	10.4	255,420
3113	TWINLAKES CK SL	89	85.2	7,554
3114	WEMBLEY SALES	37,391	168.9	6,314,846
3115	USONA SALES	32,555	7.4	241,295
3117	GRIZZLY SALES	31,849	31.0	987,195
3118	GILBY N#2 SALES	189	0.2	39
3119	DEADRICK CK SLS	4,626	16.4	75,988
3120	MILDRED LK SLS	1,149,307	198.6	228,200,442
3123	MILDRED LK #2 S	330,957	204.2	67,570,117
3124	DEEP VY CK S SL	111	0.0	2
3125	HUGGARD CREEK S	15,959	48.4	773,181
3300	OTAUWAW SALES	1,487	10.1	14,992
3301	SAULTEAUX SALES	374	18.7	7,002
3304	FORESTBURG SLS	6,922	328.7	2,275,137
3305	CHIGWELL N. SLS	3,731	0.0	63
3368	NOEL LAKE SALES	44,642	98.8	4,412,144
3405	RIM-WEST SALES	162,993	0.0	5,379
3406	REDWATER SALES	61,053	39.6	2,419,325
3410	VIKING SALES	53,465	31.0	1,656,036
3411	MONARCH N. B SL	2,043	0.1	131
3412	WAYNE N B SALES	19,821	0.0	614
3413	ATMORE B SALES	-	-	-
3414	HANNA S B SALES	9,358	333.2	3,118,053
3416	COUSINS A SALES	-	-	-
3418	COUSINS C SALES	1,284	50.6	64,956
3419	INLAND SALES	740,188	275.4	203,869,874
3421	WIMBORNE SALES	-	-	-

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3422	THORHILD SALES	3,668	0.0	84
3423	BASHAW WEST SLS	482	13.2	6,364
3424	GRANDE CENTRE S	20,298	20.4	414,191
3425	WOOD RVR SALES	61,876	29.7	1,838,291
3427	WESTLOCK SALES	3,152	0.0	151
3429	ST. PAUL SALES	19,514	44.7	872,667
3430	FERINTOSH SALES	1,312	15.6	20,414
3432	PETRO GAS PLANT	959,558	522.0	500,896,866
3434	AMOCO INLET	1,538,542	668.5	1,028,473,879
3435	PAN CAN INLET	311,093	594.6	184,989,523
3437	HARMATTAN SALES	735	487.4	358,337
3438	REDWATER B SL	27,452	46.5	1,275,361
3439	SHEERNESS SALES	8,458	390.5	3,302,661
3440	PROGAS PLANT	195,940	520.8	102,036,466
3444	PINCHER CRK SLS	7,381	93.3	688,848
3445	KAKWA SALES	-	-	-
3446	BITTERN LAKE SL	57,663	26.6	1,533,403
3448	ROSS CREEK SLS	88,302	33.6	2,967,861
3449	FLEET SALES	3,121	9.1	28,477
3453	GREEN GLADE SLS	-	-	-
3454	PENHOLD N SALES	157,613	64.2	10,118,984
3456	ELK POINT SALES	13,723	5.2	71,593
3457	MITTUE SALES	-	-	-
3458	COUSINS B SALES	914,728	46.2	42,281,696
3460	LANDON LAKE SLS	5,362	0.1	434
3462	NIPISI SALES	-	-	-
3464	GREENCOURT W SL	17,845	7.9	141,564
3465	DEMMITT SALES	321	10.4	3,331
3467	KILLAM SALES	-	-	-
3468	BLEAK LAKE SLS	13,388	30.8	411,881
3469	EVERGREEN SALES	388	0.0	6
3470	NOSEHILL CRK SL	11,366	4.4	49,736
3471	BLUE RIDGE E SL	49,463	1.4	71,326
3472	INNISFAIL SALES	1,423	11.5	16,356
3474	LLOYD CREEK SLS	-	-	-
3476	LAC LA BICHE SL	3,307	17.9	59,208
3477	RICINUS S SALES	-	-	-
3478	ONETREE SALES	22,076	0.0	442
3479	NOSEHILL CRK N.	5,135	385.3	1,978,369
3481	SAWRIDGE SALES	33,746	0.2	8,434
3482	LONE PINE CK SL	14,844	0.0	430
3483	CRAMMOND SALES	19	0.0	0
3484	CARIBOU LAKE SL	-	-	-
3485	SHORNCLIFFE CRK	-	-	-
3486	WESTERDALE SLS	3,685	0.8	3,107
3488	ARDLEY SALES	12,035	51.5	620,372
3489	ATUSIS CREEK SL	40,033	588.7	23,568,001
3490	GAETZ LAKE SLS	6,858	0.0	69

Unit Number	Unit Name	Annual Volume (e3m3)	DOH (Km)	Volume-Distance
3491	JOFFRE SLS #2	370,051	85.8	31,744,831
3492	JOFFRE SLS #3	512,374	86.0	44,062,043
3493	MEYER B SALES	-	-	-
3494	SILVER VLY SLS	842	36.7	30,903
3495	CAVALIER SALES	477	0.0	1
3496	CHIPEWYAN RIVER	84,750	32.0	2,710,703
3497	SUNDAY CREEK SO	13,794	0.0	276
3562	AMOCO SALES TAP	28	60.6	1,673
3600	STORNHAM COULEE	9,661	37.1	358,262
3604	MARGUERITE L SL	59,325	52.9	3,140,586
3605	LEMING LAKE SLS	1,081,080	52.0	56,162,933
3606	LOSEMAN LAKE SL	287,190	34.2	9,816,033
3609	SARRAIL SALES	49,720	42.2	2,097,762
3610	RANFURLY SALES	80,007	49.8	3,986,858
3611	HERMIT LAKE SLS	119,689	217.4	26,015,925
3612	CONKLIN W SALES	44,014	29.1	1,281,029
3613	SHANTZ SALES	1,665	164.6	274,024
3615	HAYNES SALES	8,011	66.6	533,360
3616	GAS CITY SALES	19,051	36.8	701,777
3618	JENNER EAST SLS	4,479	446.5	1,999,573
3621	LOSEMAN LK SL#2	21,175	34.2	723,983
3622	CHEECHAM W. SLS	13,378	11.3	151,234
3623	FERINTOSH N. SL	380	30.7	11,653
3624	GODS LAKE SALES	28	125.4	3,460
3626	MIRAGE SALES	-	-	-
3632	EAST CALGARY SA	5,115	0.0	51
3633	RUTH LK SLS	34,434	218.7	7,531,873
3634	CANOE LAKE SALE	859	0.0	33
3635	ROD LAKE SALES	1,746	32.6	56,900
3637	RUTH LK SLS #2	147	240.8	35,344
3639	VEGREVILLE SALE	2,229	274.3	611,438
3884	COALDALE S. JCT	4,198	10.0	41,969
3885	CHIP LAKE JCT	5,370	0.0	54
5007	HOUSE RIVER	198,788	50.6	10,067,097
5024	CROW LAKE SALES	8,469	47.5	402,205
6903	MCNEILL A UTIL	61	649.1	39,464
8000	BATTLE LAKE DVY	14,587	11.6	168,567
	Subtotal for Intra-Alberta deliveries	12,504,891	255.8	3,198,786,186

1 **APPENDIX B: DISTANCE OF HAUL STUDY - EXISTING METHODOLOGY**
2 **2002 CALENDAR YEAR**



NOVA Gas Transmission Ltd.

Distance Of Haul Study
Existing Methodology
2002 Calendar Year

September 2003

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1. SUMMARY

The purpose of the study was to determine average distances of haul on the Alberta System during the 2002 calendar year. Average distances of haul were calculated for intra-Alberta and ex-Alberta deliveries and the ratio between the two averages was determined.

The scope of the study includes 80.23% of total intra-Alberta deliveries, 99.32% of total ex-Alberta deliveries and 97.13% of the total receipts on the Alberta System. The reliability and validity of the data used in the study as well as the results of the 2002 study are consistent with previous years' studies.

Based on physical flows for a typical day, the calculation methodology consists of satisfying the requirements of a particular delivery station with available receipt volumes from upstream stations, on a prorata basis. For every receipt point satisfying a delivery requirement, the distance from that point to the delivery station is determined. A volume weighted average distance (in kilometres) is then calculated for each delivery station. The remaining volumes, i.e. those which have not been used up by the delivery station, are made available to the subsequent delivery point along with the volumes from the receipt stations in between. This process continues downstream, in a generally north to south direction, until all the receipt volumes have been allocated. Overall volume weighted average distances of haul are then calculated for each of the intra-Alberta and the ex-Alberta delivery types. The methodology also takes into consideration specific situations such as interchanges.

The results of the study indicate that the average distance of haul for intra-Alberta deliveries in 2002 was 270.47 km. This represents 46.25% of the average distance of haul for ex-Alberta deliveries, which amounted to 584.80 km. The overall distance of haul for all deliveries was 555.04 km. These results are consistent with those obtained in previous years' studies.

2. BACKGROUND

The 2002 Distance of Haul Study was prepared by NGTL. It follows the same methodology of other Distance of Haul studies done in recent years. The main results are the average distances of haul for intra-Alberta deliveries and ex-Alberta deliveries.

3. OBJECTIVES

The objectives of the study are to:

- estimate the average distance of haul for intra-Alberta deliveries;
- estimate the average distance of haul for ex-Alberta deliveries;
- calculate the ratio of the above two average distances; and
- compare the ratio and averages of previous years' studies.

The report includes the following:

- an explanation of the methodology and assumptions used in the calculations;
- a brief discussion of the results; and
- the detailed calculations and input data.

4. APPROACH

4.1 Scope

This study is based on physical gas flows for a “typical day” on the Alberta System. (A “typical day” is defined to be at least 80% of the time.) Customer allocated volume data for the 2002 calendar year were used for the analysis. Some 62 intra-Alberta delivery stations were considered including deliveries to extraction plants at Empress and Cochrane. These were grouped into 23 aggregate stations (e.g., Louise Creek and Judy Creek were combined), which represent 80.23% of all the intra-Alberta deliveries over the study period. Four border delivery stations were taken into consideration: Empress, McNeill, Gordondale and Alberta-B.C., representing 99.32% of the ex-Alberta deliveries during the 12-month period.

The study uses volumes and distance of haul data taken from an extensive network of geographically diverse receipt points. For the 12 months ending December 31, 2002, data were collected from approximately 948 receipt meter stations and 173 delivery stations on the system. Approximately 85% of all the gas transported on the system was delivered to the border stations.

A very small amount of the receipt volumes (0.03%) were excluded from the calculations. These volumes are mainly from receipt stations that are located in local distribution companies’ service areas. These particular flows and related distances of haul are excluded from the scope of the study as the volumes are accounted for when they re-enter the Alberta System at interconnection points.

4.2 Methodology

Gas from all receipt points on the system is commingled and cannot be differentiated physically at any of the delivery points. Therefore it is reasonable to assume that every receipt point can serve either intra-Alberta or ex-Alberta delivery points or both, since shippers do not have to dedicate specific receipt points to specific delivery points. Accordingly, a general sequence for gathering distance and volume data was established, along with some specific applications. Please refer to the flow diagram and the legend in Appendix 1 for more details.

GENERAL

- Starting with the northernmost delivery station on the Alberta System, upstream receipts are allocated on a prorata basis to satisfy the station's delivery requirements.
- The distance, in kilometres, is calculated from each receipt station to the delivery point. Distance calculations are reviewed and updated to incorporate all changes on the system.
- The distance and the allocated volumes are multiplied for each receipt station that delivers gas to the delivery station to arrive at a volume-distance figure.
- The volume-distance figures, for all receipt stations that contributed gas to the delivery station, are added together and divided by the total delivery volume at that station to arrive at the average distance of haul for that delivery station.
- The remaining volumes (i.e. those not allocated yet) are made available to the next downstream delivery station. These volumes and those from the receipt stations in-between are then allocated to the next "downstream" delivery station on a prorata basis.
- This process continues until the final delivery point is reached (e.g., Empress Border), whereupon practically all volumes from all upstream receipt stations will have been allocated. Compressor fuel and deliveries at stations other than the ones in the scope account for the residual volumes.
- The volume-distances from all delivery stations are then added together, for both intra-Alberta and ex-Alberta deliveries, and the sum divided by the respective aggregate deliveries. This produces the average distance of haul for each type of delivery.
- The average intra-Alberta distance of haul is then divided by the ex-Alberta average to arrive at the ratio.

SPECIFIC

- 100% of the volumes upstream of Zama Lake, including Zama Lake #2 and Zama Lake #3 flowed west to Gordondale Border. Gas received at the Zama Lake receipt point flowed south to the Peace River Interchange.
- All volumes available at the James River Interchange have been allocated between Alberta-B.C. and Empress. The flow split is approximately 70% to Carseland and 30% to Cochrane. The latter takes into consideration the receipt volumes and delivery requirements of stations between James River and A/BC (see Appendix 3.3 for detailed calculations).
- 0% of the volumes upstream of the Kirby Interchange flow south to Leming Lake, 100% flow west towards Bens Lake Interchange.
- All upstream receipts go through a split at Peace River Interchange where the percent going to the Gold Creek Interchange is 90%. The remaining 10% flows toward the Ferd Interchange.

- No volumes flowed east on the Gold Creek Extension.
- 80% of the remaining volumes upstream of the Ferd Interchange flowed on the Edson Mainline towards Elk River. The other 20% continued towards Carrot Creek on the Western Mainline.
- None of the volumes downstream of Slave Lake C/S flowed on the Marten Hills Crossover towards Judy Creek. All of the volumes continued on the Marten Hills Lateral towards Elk River. In 2002, 100% of the receipt volumes upstream of the Slave Lake and Paul Lake compressor stations flowed towards Ben's Lake Interchange.
- In the Cousins area all receipt volumes north of Ralston flowed north and east to Empress. In 2002 receipt volumes from Twelve Mile Coulee, Alderson and Alderson South and volumes south of and including Ralston satisfied Cousins A & B deliveries. Volumes from receipt stations connected to the Medicine Hat Lateral were not required to satisfy the deliveries at Cousins A & B. Volumes from the Medicine Hat Lateral flowed to Empress Border.
- In the Monarch area all receipt volumes from Monarch North A, Whitney, Orton and Monarch North B are prorated to satisfy Monarch North B Sales. The remaining volumes at these stations plus all the volumes from the Upstream and nearby Receipt stations flowed northeast to the Empress Extraction plants.
- The Hunt Creek crossover came into service in December 1998. In 2002 all gas upstream and to the north of Hunt Creek flowed east on the Hunt Creek crossover to the Vandersteene Lake Interchange. Gas from Simons Lake flowed north and east on the Hunt Creek crossover to the Vandersteene Lake Interchange.
- In 2001 a new interchange at Vandersteene Lake was created. All volumes upstream of Vandersteene Lake and volumes from the Hunt Creek crossover go through a split at Vandersteene Lake Interchange. In 2002 20% of the volumes at Vandersteene Lake Interchange flow south towards Bens Lake Interchange and 80% of the volume flow east along the North Central Corridor towards Mildred Lake Sales.
- In 2001 a new aggregate delivery point, Mildred Lake Sales was included in the study. In 2002 volumes upstream of and including Saleski and 80% of the volumes from the Vandersteene Lake Interchange are prorated to satisfy the demand at Mildred Lake Sales. In 2002 the remaining volumes of these stations flowed to Bens Lake Interchange. All remaining volumes at Mildred Lake Sales were given the distance from the interconnection to the Ventures Pipeline to avoid over-stating distances.

4.3 Assumptions

In developing and using the calculation methodology, a number of simplifying assumptions had to be made. These include:

- Generally, on the Alberta System, gas flows from north to south. Although there are several lines and laterals on which gas can flow in opposite directions over time, the study only took into consideration the flow that happens most of the time (the “typical day” criterion mentioned in the scope section of this report).
- The percentage of coverage for the two types of deliveries is more than large enough to obtain accurate results. Detailed calculations for all of the remaining intra-Alberta delivery stations would not affect the overall results materially.¹
- At interconnections with other pipelines, where both receipts and deliveries are possible, a distance of 0.1 km between the receipt and delivery points was used, since in most cases both are in the same location. The impact of this on the overall results is minor since very few stations are treated in that manner and summary stations are used in most cases (e.g. Bittern Lake).

4.4 Sequence of stations

Due to the fact that 23 aggregate delivery stations and a downstream allocation process were used, the sequencing of the deliveries was quite important. The following “upstream” stations were used as starting points for the calculation methodology: Gordondale, Outlet Creek, Vandersteene Lake Interchange, Judy/Louise Creek, Redwater B, Rim-West/Lloyd Creek, Atmore B, Mildred Lake, Bittern Lake, Kirby Interchange & Leming Lake, Peace River Interchange, Monarch North B and Cousins A & B. These are shown on the gas flow diagram in Appendix 1 as wide-bordered rectangles.

1

This decision is based on two facts. First, average yearly deliveries for those stations was less than 10,000 10³m³ per station, which represent less than 3% of the average yearly deliveries per station for the 23 aggregate delivery stations in the analysis. Second, the unallocated delivery stations are widely dispersed geographically.

5. CONCLUSIONS

As indicated in Table 5.1, the average distance of haul for intra-Alberta deliveries in 2002 was 270.47 km. This represents 46.25% of the average distance of haul for ex-Alberta deliveries, which amounted to 584.80 km. This ratio is lower than the ratio calculated in 2001 (see table 5.1 below). This is in part due to intra-Alberta deliveries increasing at more northerly delivery stations and in part due to an increase in the percentage of gas travelling ex-Alberta.

Though a number of simplifying assumptions were made, the calculations show that the most important factors have been taken into consideration by this analysis. The sequential approach used for the calculations made the following clear: after obtaining preliminary results based on the largest stations, the impact of subsequent stations on the averages diminished very significantly. The results provide operational support for a rate design wherein intra-Alberta transportation charges are 50% of ex-Alberta charges.

TABLE 5.1
COMPARISON WITH RESULTS FROM PREVIOUS YEARS' STUDIES

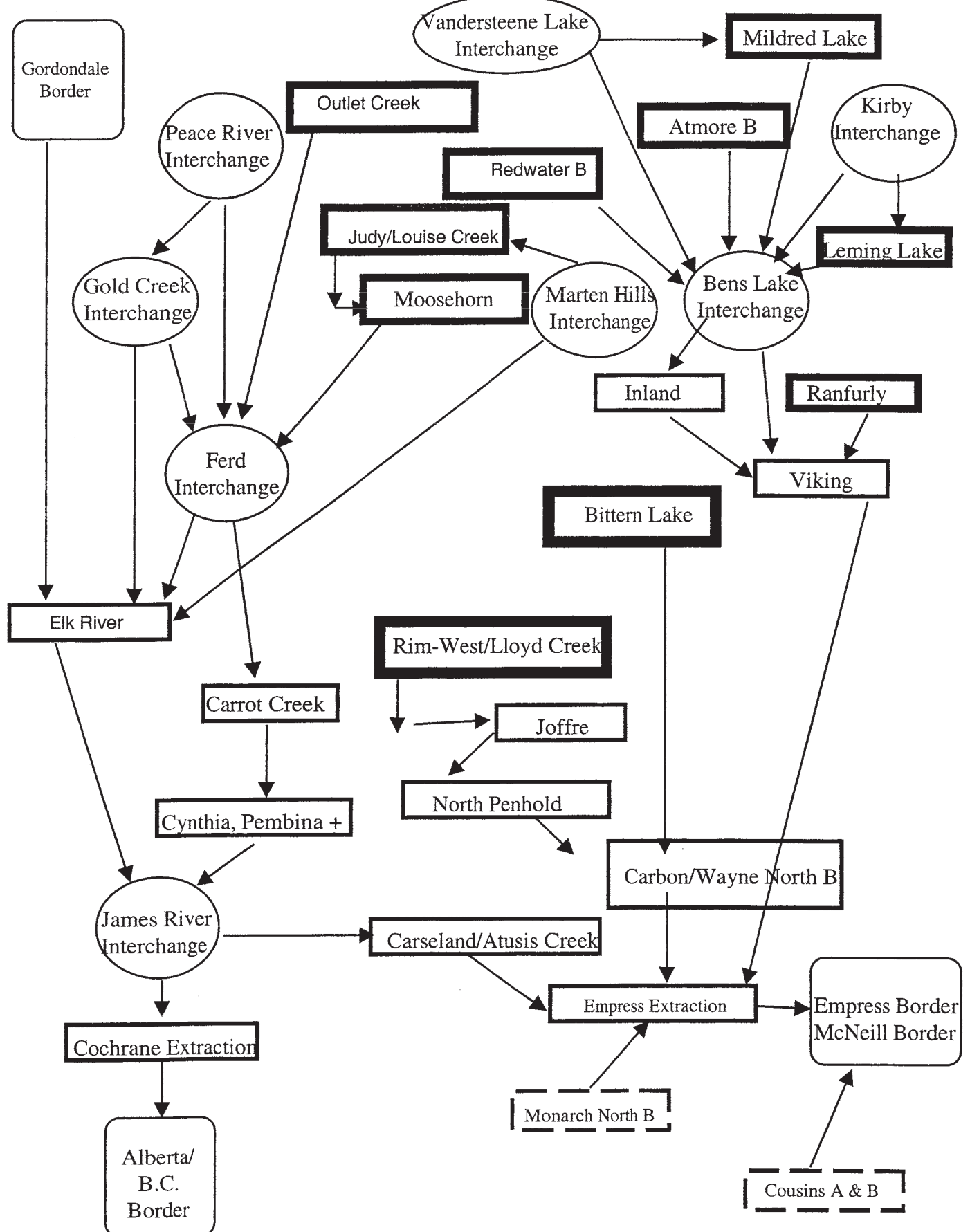
	2002	2001	2000	1999	1998	1997	1996	1995
Aver. Intra-Alberta distance (km)	270.47	266.18	267.56	265.49	253.32	245.78	247.00	249.54
Aver. ex-Alberta distance (km)	584.80	564.03	548.68	554.91	547.88	541.83	531.68	553.61
Aver. Ex-Alberta to intra-Alberta Ratio	2.16:1	2.12:1	2.05:1	2.09:1	2.16:1	2.20:1	2.15:1	2.22:1
Aver. Intra-Alberta to ex-Alberta % Ratio	46.25%	47.19%	48.76%	47.84%	46.24%	45.36%	46.46%	45.07%

	1994	1993	1992	1991	1990	1989	1988
Aver. Intra-Alberta distance (km)	234.03	229.68	219.86	224.13	224.94	198.80	209.46
Aver. ex-Alberta distance (km)	540.77	532.74	517.58	496.19	477.48	445.47	442.10
Aver. Ex-Alberta to intra-Alberta Ratio	2.31:1	2.32:1	2.35:1	2.21:1	2.12:1	2.24:1	2.11:1
Aver. Intra-Alberta to ex-Alberta % Ratio	43.28%	43.11%	42.48%	45.17%	47.11%	44.63%	47.38 %

NOTE: All the above studies are based on the calendar year except 1988 which is based on volumetric data collected over a 12-month period ending September 30, 1988.

Distance of Haul Study - 2002 Calendar Year Gas Flows on NGTL's Transportation System

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Distance of Haul Study - 2002 Calendar Year

Gas Flows on NGTL's Transportation System

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LEGEND



Upstream delivery station (prorated volumes only from upstream receipt stations).



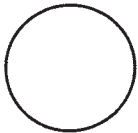
Downstream delivery station (prorated receipt volumes from remaining amounts from upstream delivery stations and from in-between receipt stations).



Delivery station which potentially uses 100% of the volumes of some close-by receipt stations to satisfy its deliveries. All volumes from other close-by receipt stations flow to Empress.



Border delivery station.



Interchange point. Also called an exchange point, this is a place where the pipeline flows into at least 2 NGTL pipelines or laterals, which then carry the gas in different directions (ie. volume splits).



Typical-day flow direction.



Due to their geographical location, the Moosehorn and Joffre stations do not follow the physical flow assumed in the methodology since they are not directly in the north-south path. Appropriate adjustments have been made to the average distances of haul of the stations in the area where they have been “inserted” in the flow.

APPENDIX 3.1

Atmore B	3858/3413	Volume:	2,883.2
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Atmore	1297	250,732.9	85.65%	2,469.4	0.10	246.9	248,263.5
Atmore C	1488/385	38,562.2	13.17%	379.8	0.20	76.0	38,182.4
Blue Jay	1511	3,458.3	1.18%	34.1	7.70	262.3	3,424.2
House River	5007	0.0	0.00%	0.0	131.17	0.0	0.0

<u>292,753.40</u>	<u>100.00%</u>	<u>2,883.2</u>	<u>585.1</u>	<u>289,870.2</u>
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Average Kilometres of Haul	0.20
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APPENDIX 3.1

Bittern Lake	3446/3887	Volume:	57,190.5
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Ferintosh North	1438	0.0	0.00%	0.0	11.58	0.0	0.0
Duhamel	1475	0.0	0.00%	0.0	18.31	0.0	0.0
Ohaton	1532	0.0	0.00%	0.0	40.88	0.0	0.0
Bittern Lake	1542	0.0	0.00%	0.0	0.10	0.0	0.0
Armena	1567	22,529.0	11.67%	6,675.7	27.72	185,049.6	15,853.3
Camrose Creek	1651	42,137.1	21.83%	12,485.8	1.50	18,728.8	29,651.3
Miquelon Lake	1658	69,763.1	36.15%	20,671.8	30.72	635,038.5	49,091.3
Ferintosh West	1659	58,576.8	30.35%	17,357.2	31.39	544,824.0	41,219.6
Bittern Lake Sales	3446	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>193,006.0</u>	<u>100.00%</u>	<u>57,190.5</u>		<u>1,383,640.9</u>	<u>135,815.5</u>

Average Kilometres of Haul

24.19

APPENDIX 3.1

Carbon/ Wayne North B Sales	3866/3412	Volume:	19,812.6
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Bittern Lake	----	135,815.5	1.80%	356.1	283.44	100,924.8	135,459.4
From North Penhold	----	3,178,593.9	42.06%	8,333.3	228.05	1,900,404.3	3,170,260.6
Nevis South	1019	438,470.8	5.80%	1,149.5	186.01	213,825.3	437,321.3
Nevis North	1020	78,573.7	1.04%	206.0	191.07	39,359.7	78,367.7
Three Hills Creek	1029	127,909.0	1.69%	335.3	146.32	49,066.7	127,573.7
Innisfail	1030	0.0	0.00%	0.0	165.92	0.0	0.0
Chigwell	1034	15,071.1	0.20%	39.5	227.06	8,971.6	15,031.6
Wood River	1035	64,491.3	0.85%	169.1	178.51	30,181.8	64,322.2
Chigwell East	1040	37,260.5	0.49%	97.7	222.28	21,713.6	37,162.8
Wimborne	1046	117,943.5	1.56%	309.2	127.33	39,371.9	117,634.3
Swalwell	1047	0.0	0.00%	0.0	82.75	0.0	0.0
Twining North	1066	61,780.3	0.82%	162.0	121.89	19,742.4	61,618.3
Ghost Pine	1073	471,440.3	6.24%	1,236.0	70.39	87,000.1	470,204.3
Equity	1074	106,716.9	1.41%	279.8	105.76	29,589.4	106,437.1
Wayne Rosebud	1107	47,704.0	0.63%	125.1	223.13	27,905.8	47,578.9
Huxley	1142	94,200.9	1.25%	247.0	141.16	34,861.7	93,953.9
Mikwan North	1144	57,479.0	0.76%	150.7	165.24	24,900.4	57,328.3
Mikwan	1146	118,203.5	1.56%	309.9	165.44	51,268.8	117,893.6
Donalda	1147	59,961.9	0.79%	157.2	227.38	35,744.5	59,804.7
Carbon	1170/3866	160,409.4	2.12%	420.5	54.11	22,755.7	159,988.9
Carbon Sales	1171	0.0	0.00%	0.0	47.86	0.0	0.0
Twining	1190	84,674.9	1.12%	222.0	98.24	21,808.5	84,452.9
Erskine North	1232	17,135.4	0.23%	44.9	206.88	9,293.8	17,090.5
Wimborne North	1234	81,233.8	1.07%	213.0	140.55	29,933.0	81,020.8
Ferintosh	1254	0.0	0.00%	0.0	209.41	0.0	0.0
Tees	1305	0.0	0.00%	0.0	213.91	0.0	0.0
Stettler South	1308	146,971.7	1.94%	385.3	215.90	83,189.5	146,586.4
Bashaw	1329	39,796.6	0.53%	104.3	229.81	23,977.1	39,692.3
Three Hills Creek West	1335	19,758.8	0.26%	51.8	137.74	7,135.1	19,707.0
Carbon South	1349	0.0	0.00%	0.0	67.13	0.0	0.0
Grainger	1352	87,370.5	1.16%	229.1	80.19	18,368.2	87,141.4
Equity B	1359	4,027.4	0.05%	10.6	105.77	1,116.8	4,016.8
Bashaw West	1384	0.0	0.00%	0.0	225.38	0.0	0.0
Bashaw B	1393	31,142.9	0.41%	81.6	229.91	18,771.5	31,061.3
Mikwan East	1427	62,070.5	0.82%	162.7	177.02	28,806.5	61,907.8
Morrin	1458	72,662.7	0.96%	190.5	87.51	16,670.6	72,472.2
Lousana	1496	69,214.6	0.92%	181.5	178.57	32,403.2	69,033.1
Mirror	1500	180,213.6	2.38%	472.5	217.78	102,893.4	179,741.1
Doreenlee	1506	0.0	0.00%	0.0	244.36	0.0	0.0
Michichi	1508	36,400.5	0.48%	95.4	95.05	9,070.7	36,305.1
Rumsey	1530	25,910.7	0.34%	67.9	97.66	6,634.0	25,842.8
Delia	1539	17,915.1	0.24%	47.0	102.08	4,794.5	17,868.1
Rowley	1540	60,276.9	0.80%	158.0	95.91	15,156.4	60,118.9
Craigmyle	1541	42,999.4	0.57%	112.7	108.33	12,212.2	42,886.7
Elnora	1546	0.0	0.00%	0.0	142.09	0.0	0.0
Lakeview Lake	1562	5,255.3	0.07%	13.8	143.93	1,983.0	5,241.5
Delia East	1563	0.0	0.00%	0.0	108.07	0.0	0.0
Edberg	1568	3,509.9	0.05%	9.2	194.29	1,787.8	3,500.7
Pine Lake	1571	0.0	0.00%	0.0	140.49	0.0	0.0
Trochu	1574	70,842.1	0.94%	185.7	131.91	24,499.2	70,656.4
Craigmyle East	1583	43,043.4	0.57%	112.8	228.92	25,832.9	42,930.6
Equity East	1586	40,201.4	0.53%	105.4	105.78	11,148.8	40,096.0
Huxley East	1591	42,851.0	0.57%	112.3	151.81	17,054.7	42,738.7
Elnora East	1597	0.0	0.00%	0.0	173.80	0.0	0.0

APPENDIX 3.1

Carbon/ Wayne North B Sales	3866/3412	Volume:	19,812.6
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Rumsey West	1600	87,378.2	1.16%	229.1	101.11	23,162.2	87,149.1
Victor	1606	46,763.2	0.62%	122.6	111.00	13,608.5	46,640.6
Penhold West	1607	24,627.3	0.33%	64.6	152.80	9,865.6	24,562.7
Ghostpine B	1617	93,749.4	1.24%	245.8	70.40	17,303.1	93,503.6
Torrington East	1621	39,289.2	0.52%	103.0	117.75	12,128.8	39,186.2
Carbon West	1622	100,226.1	1.33%	262.8	58.61	15,400.5	99,963.3
Gatine	1623	198,116.9	2.62%	519.4	46.25	24,024.4	197,597.5
Rowley West	1748	0.0	0.00%	0.0	85.18	0.0	0.0
Orkney Hill	1761	0.0	0.00%	0.0	74.30	0.0	0.0
Lamerton	1767	111,764.1	1.48%	293.0	242.19	70,963.3	111,471.1
Munson	1774	20,387.8	0.27%	53.5	104.64	5,592.9	20,334.3
Atusis Creek East	1792	92,140.1	1.22%	241.6	27.26	6,584.5	91,898.5
Goosequill	1798	34,546.1	0.46%	90.6	401.81	36,391.2	34,455.5
Lakeview Lake #2	1828	50,679.0	0.67%	132.9	143.98	19,129.9	50,546.1
Innisfail Sales	3472	0.0	0.00%	0.0	164.29	0.0	0.0
		<u>7,557,172.0</u>	<u>100.00%</u>	<u>19,812.6</u>		<u>3,516,285.0</u>	<u>7,537,359.4</u>

Average Kilometres of Haul 177.48

APPENDIX 3.1

Carrot Creek	3060/3893	Volume:	11,539.0
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Ferd Interchange	----	2,616,095.0	79.03%	9,119.0	346.87	3,163,104.9	2,606,976.0
Pioneer	2046	35,300.4	1.07%	123.0	12.59	1,549.2	35,177.4
Niton	2071	180,592.8	5.46%	629.5	11.55	7,270.7	179,963.3
Rosevear	2077	0.0	0.00%	0.0	31.14	0.0	0.0
Pioneer East	2088	36,390.9	1.10%	126.8	20.16	2,557.3	36,264.1
Rosevear South	2099	337,134.8	10.18%	1,175.2	22.15	26,029.7	335,959.6
Peers	2135	380.2	0.01%	1.3	0.10	0.1	378.9
Yates	2163	0.0	0.00%	0.0	18.68	0.0	0.0
Niton North	2172	8,389.5	0.25%	29.2	16.33	477.5	8,360.3
Poison Creek	2173	60,998.6	1.84%	212.6	26.15	5,560.1	60,786.0
Carrot Creek	3060/3893	35,085.1	1.06%	122.3	0.10	12.2	34,962.8
		<u>3,310,367.3</u>	<u>100.00%</u>	<u>11,539.0</u>		<u>3,206,561.7</u>	<u>3,298,828.3</u>

Average Kilometres of Haul 277.89

APPENDIX 3.1

Carseland/Atusis Creek Sales	3409/3489	Volume:	48,380.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From James River Interchange	----	42,715,776.0	94.12%	45,536.4	551.69	25,121,786.0	42,670,239.6
Carstairs	1014	0.0	0.00%	0.0	68.80	0.0	0.0
Crossfield East	1052	0.0	0.00%	0.0	47.92	0.0	0.0
Olds	1053	311,784.4	0.69%	332.4	89.86	29,867.0	311,452.0
South Elkton	1065	16,685.2	0.04%	17.8	83.85	1,491.4	16,667.4
Lone Pine Creek	1069	88,973.9	0.20%	94.8	46.73	4,432.3	88,879.1
Lone Pine South	1139	379,170.0	0.84%	404.2	36.64	14,810.2	378,765.8
Harmattan Elkton	1166	712,542.5	1.57%	759.6	85.38	64,854.1	711,782.9
Harmattan East	1178	0.0	0.00%	0.0	85.36	0.0	0.0
Irricana	1235	0.0	0.00%	0.0	16.31	0.0	0.0
Netook	1316	4,572.8	0.01%	4.9	104.43	509.1	4,567.9
Gayford	1358	0.0	0.00%	0.0	3.55	0.0	0.0
Carstairs North	1478	0.0	0.00%	0.0	62.09	0.0	0.0
Nightingale	1747	105,126.1	0.23%	112.1	14.12	1,582.2	105,014.0
Crossfield East #2	1751	196,788.1	0.43%	209.8	58.99	12,375.1	196,578.3
Atusis Creek #2	1830	0.0	0.00%	0.0	0.03	0.0	0.0
Carseland	1840	94,918.5	0.21%	101.2	0.015	1.5	94,817.3
Carstairs/Crossfield	1948	0.0	0.00%	0.0	68.80	0.0	0.0
Garrington	2078	320,725.9	0.71%	341.9	142.90	48,858.1	320,384.0
Garrington East	2079	85,396.6	0.19%	91.0	146.06	13,296.6	85,305.6
Garrington East B	2080	0.0	0.00%	0.0	147.45	0.0	0.0
Eagle Hill	2081	63,630.9	0.14%	67.8	155.41	10,541.9	63,563.1
Deadrick Creek	2285	0.0	0.00%	0.0	82.09	0.0	0.0
Carseland Interconnection	3409	0.0	0.00%	0.0	0.10	0.0	0.0
Lone Pine Creek Sales	3482	0.0	0.00%	0.0	85.96	0.0	0.0
Westerdale Sales	3486	0.0	0.00%	0.0	84.53	0.0	0.0
Crossfield East Interconnection	3897	287,543.5	0.63%	306.5	58.99	18,082.2	287,237.0
		<u>45,383,634.4</u>	<u>100.00%</u>	<u>48,380.4</u>		<u>25,342,487.5</u>	<u>45,335,254.0</u>

Average Kilometres of Haul

523.82

APPENDIX 3.1

Cochrane Extraction	2360	Volume:	1,386,709.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From James River Interchange	----	17,988,393.8	84.42%	1,170,646.3	514.64	602,456,828.4	16,817,747.5
Wildcat Hills	2005	1,013,448.2	4.76%	65,953.0	9.80	646,339.9	947,495.2
East Calgary	2007	607,001.3	2.85%	39,502.4	37.77	1,492,003.8	567,498.9
Crossfield	2008	299,865.3	1.41%	19,514.6	56.06	1,093,968.6	280,350.7
Crossfield West	2017	7,928.8	0.04%	516.0	48.07	24,804.6	7,412.8
Burnt Timber	2032	965,047.6	4.53%	62,803.2	56.89	3,572,876.3	902,244.4
Jumping Pount West	2036	220,611.1	1.04%	14,356.9	10.00	143,569.0	206,254.2
Jackson Creek	2146	192,969.4	0.91%	12,558.0	78.63	987,438.4	180,411.4
Water Valley	2160	13,206.3	0.06%	859.4	36.12	31,042.9	12,346.9
Cochrane Extraction - ANG	2360	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>21,308,471.8</u>	<u>100.00%</u>	<u>1,386,709.9</u>		<u>610,448,872.0</u>	<u>19,921,761.9</u>

Average Kilometres of Haul 440.21

APPENDIX 3.1

Cousins A & B	3416/1963/3417/3458/3448	Volume: 1,004,327.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Alderson	1075	511,130.0	35.51%	356,637.9	75.80	27,033,149.9	154,492.1
Alderson South	1103	129,246.0	8.98%	90,180.6	75.79	6,834,698.5	39,065.4
Suffield East	1200	0.0	0.00%	0.0	19.71	0.0	0.0
Suffield	1202	0.0	0.00%	0.0	37.82	0.0	0.0
Ralston	1282	87,675.3	6.09%	61,174.9	59.17	3,619,964.1	26,500.4
Bowell South	1318	43,002.5	2.99%	30,004.7	38.99	1,169,884.6	12,997.8
Redcliff West	1346	29,715.4	2.06%	20,733.7	24.01	497,817.1	8,981.7
Aeco D	1381	0.0	0.00%	0.0	41.85	0.0	0.0
Aeco E	1390	0.0	0.00%	0.0	19.75	0.0	0.0
Suffield West	1423	104,034.0	7.23%	72,589.1	36.16	2,624,821.6	31,444.9
Cousins South	1431	0.0	0.00%	0.0	2.33	0.0	0.0
Cousins South B	1432	0.0	0.00%	0.0	2.43	0.0	0.0
Cousins West	1433	85,875.8	5.97%	59,919.3	2.51	150,397.5	25,956.5
Redcliff East	1450	0.0	0.00%	0.0	7.38	0.0	0.0
Etzikom A	1547	40,880.0	2.84%	28,523.8	77.43	2,208,595.7	12,356.2
Etzikom B	1548	52,175.6	3.62%	36,405.2	77.53	2,822,495.8	15,770.4
Etzikom C	1549	0.0	0.00%	0.0	77.63	0.0	0.0
Orion	1550	0.0	0.00%	0.0	70.33	0.0	0.0
Murray Lake	1551	0.0	0.00%	0.0	43.43	0.0	0.0
Seven Persons Creek	1552	0.0	0.00%	0.0	41.43	0.0	0.0
Whitla	1553	0.0	0.00%	0.0	38.64	0.0	0.0
Fitzgerald	1554	0.0	0.00%	0.0	35.98	0.0	0.0
Bullshead	1555	32,243.5	2.24%	22,497.7	19.44	437,355.4	9,745.8
South Saskatchewan Ri	1556	123,440.8	8.58%	86,130.1	20.26	1,744,995.2	37,310.7
Etzikom D	1557	5,262.9	0.37%	3,672.2	77.73	285,436.7	1,590.7
Maleb	1625	0.0	0.00%	0.0	70.28	0.0	0.0
Twelve Mile Coulee	1699	124,580.0	8.66%	86,924.9	85.389	7,422,433.7	37,655.1
Ralston South	1826	70,130.7	4.87%	48,933.3	42.06	2,058,280.2	21,197.4
Cousins A Sales	3416	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>1,439,392.5</u>	<u>100.00%</u>	<u>1,004,327.4</u>		<u>58,910,326.3</u>	<u>435,065.1</u>

Average Kilometres of Haul 58.66

Receipt Volume Shortage 0.0
to be made up by Medicine Hat Lateral

APPENDIX 3.1

Cousins A & B Sales (cont'd)
Medicine Hat Lateral

Receipt Station	Station Number	Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Medicine Hat South 1	1018	21,796.3	1.55%	0.0	51.17	1,115,316.7	21,796.3
Medicine Hat South 2	1043	164,175.6	11.65%	0.0	51.17	8,400,865.5	164,175.6
Medicine Hat South 3	1044	0.0	0.00%	0.0	51.17	0.0	0.0
Medicine Hat South 4	1128	63,567.8	4.51%	0.0	51.17	3,252,764.3	63,567.8
Vale	1154	46,505.2	3.30%	0.0	66.09	3,073,528.7	46,505.2
Vale South	1160	0.0	0.00%	0.0	66.19	0.0	0.0
Medicine Hat West	1172	29,343.8	2.08%	0.0	51.07	1,498,587.9	29,343.8
Medicine Hat East	1186	61,090.6	4.33%	0.0	59.47	3,633,058.0	61,090.6

APPENDIX 3.1

Cousins A & B	3416/1963/3417/3458/3448 Volume: 1,004,327.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Irvine	1201	2,529.2	0.18%	0.0	88.53	223,910.1	2,529.2
Bowmanton South	1204	147,357.1	10.46%	0.0	28.86	4,252,725.9	147,357.1
Redcliff	1209	166,579.2	11.82%	0.0	19.27	3,209,981.2	166,579.2
Vale East	1212	233,967.9	16.60%	0.0	78.53	18,373,499.2	233,967.9
Bowmanton	1216	206,689.1	14.67%	0.0	48.23	9,968,615.3	206,689.1
Redcliff South	1219	5,989.2	0.42%	0.0	14.74	88,280.8	5,989.2
Dunmore	1220	74,553.0	5.29%	0.0	38.31	2,856,125.4	74,553.0
Bowmanton West	1237	84,943.2	6.03%	0.0	54.77	4,652,339.1	84,943.2
Koomati	1533	0.0	0.00%	0.0	81.32	0.0	0.0
Redcliff South #2	1838	82,871.8	5.88%	0.0	14.77	1,224,016.5	82,871.8
Bowmanton East	1842	17,315.5	1.23%	0.0	48.23	835,057.3	17,315.5

<u>1,409,274.5</u>	<u>100.00%</u>	<u>0.0</u>	<u>66,658,671.7</u>	<u>1,409,274.5</u>
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Average Kilometres of Haul	47.30
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TOTALS (COUSINS + MEDICINE HAT LATERAL)

1,004,327.458,910,326.3

Average Kilometres of Haul	58.66
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APPENDIX 3.1

Cynthia/Pembina/W.Pembina S./Rat Cr/Paddy Cr (*)	Volume:	80,237.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Carrot Creek	----	3,298,828.3	57.79%	46,371.4	326.93	15,160,326.8	3,252,456.8
Pembina	2011	386.1	0.01%	5.4	0.10	0.5	380.7
Eta Lake	2049	186,905.7	3.27%	2,627.3	47.02	123,536.7	184,278.4
Rat Creek	2104	144,775.1	2.54%	2,035.1	0.10	203.5	142,740.0
Lobstick	2111	122,091.4	2.14%	1,716.2	70.18	120,445.2	120,375.2
West Pembina South	2120	119,451.3	2.09%	1,679.1	25.96	43,590.0	117,772.2
Granada	2129	157,170.6	2.75%	2,209.3	62.29	137,619.7	154,961.3
Bigoray River	2176	39,815.6	0.70%	559.7	62.30	34,868.4	39,255.9
Pembina West	2185	2,649.3	0.05%	37.2	10.27	382.5	2,612.1
Cynthia #2	2209	369,976.0	6.48%	5,200.7	8.26	42,958.0	364,775.3
Rat Creek West	2252	907,955.1	15.91%	12,763.1	18.58	237,176.2	895,192.0
Rat Creek South	2265	99,792.1	1.75%	1,402.8	10.70	15,012.5	98,389.3
Blue Rapids	2704	79,560.2	1.39%	1,118.4	5.82	6,512.3	78,441.8
Pembina Sales (*)	3061	178,669.0	3.13%	2,511.5	0.10	251.2	176,157.5
Cynthia Interconnection	3071	0.0	0.00%	0.0	0.10	0.0	0.0
Paddy Creek Sales	3072	0.0	0.00%	0.0	1.92	0.0	0.0
West Pembina S. Int.	3892	0.0	0.00%	0.0	25.96	0.0	0.0
		<u>5,708,025.8</u>	<u>100.00%</u>	<u>80,237.4</u>		<u>15,922,883.4</u>	<u>5,627,788.4</u>

Average Kilometres of Haul 198.45

(*)Includes following delivery stations: 3071/3804/3892/3877/3072

APPENDIX 3.1

Elk River South/Brazeau Sales	3082/3084/3094	Volume:	77.8
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Gordondale	----	12,410,248.3	31.19%	24.3	700.42	16,994.7	12,410,224.0
From Gold Creek Interchange	----	357,958.5	0.90%	0.7	612.02	428.3	357,957.8
From Marten Hills Interchange	----	119,718.8	0.30%	0.2	250.60	58.7	119,718.6
From Ferd Interchange	----	10,464,379.8	26.30%	20.5	410.23	8,393.0	10,464,359.4
Edson	1064	917,394.9	2.31%	1.8	73.30	131.5	917,393.1
Greencourt	1093	38,408.2	0.10%	0.1	210.65	15.8	38,408.1
Whitcourt	1094	172,986.2	0.43%	0.3	170.08	57.5	172,985.9
Corbett Creek	1158	0.0	0.00%	0.0	228.04	0.0	0.0
Dismal Creek	1185	377,858.8	0.95%	0.7	29.61	21.9	377,858.1
Edson South	1195	0.0	0.00%	0.0	67.63	0.0	0.0
Paddle River	1307	89,518.3	0.22%	0.2	187.94	32.9	89,518.1
Edson North	1367	0.0	0.00%	0.0	76.01	0.0	0.0
Edson West	1422	0.0	0.00%	0.0	107.85	0.0	0.0
Elmworth	1451	0.0	0.00%	0.0	363.86	0.0	0.0
Goodfare	1452	211,533.9	0.53%	0.4	388.12	160.5	211,533.5
Edson West B	1455	0.0	0.00%	0.0	107.89	0.0	0.0
Karr	1462	80,808.0	0.20%	0.2	245.91	38.9	80,807.8
Demmitt	1476	384,426.8	0.97%	0.8	410.31	308.4	384,426.0
Hythe	1479	210,622.0	0.53%	0.4	417.52	171.9	210,621.6
Whitcourt East	1481	0.0	0.00%	0.0	199.03	0.0	0.0
Cutbank River	1489	602,475.3	1.51%	1.2	389.57	458.9	602,474.1
Little Sundance	1494	33,216.9	0.08%	0.1	87.15	5.7	33,216.8
Robb	1499	2,768,664.6	6.96%	5.4	81.25	439.8	2,768,659.2
Sundance Creek	1516	1,169.1	0.00%	0.0	112.63	0.3	1,169.1
Elk River South	1558	714,176.2	1.79%	1.4	0.10	0.1	714,174.8
Nosehill Creek	1559	0.0	0.00%	0.0	114.49	0.0	0.0
Iroquois Creek	1569	2,489,230.8	6.26%	4.9	334.15	1,626.2	2,489,225.9
Marlboro	1572	297,352.0	0.75%	0.6	95.71	55.6	297,351.4
Ansell	1573	16,214.3	0.04%	0.0	80.30	2.5	16,214.3
Haddock	1576	128,644.5	0.32%	0.3	139.70	35.1	128,644.2
Albright	1588	7,650.6	0.02%	0.0	428.02	6.4	7,650.6
Haddock North	1589	179,939.5	0.45%	0.4	146.40	51.5	179,939.1
Sundance Lake	1592	0.0	0.00%	0.0	109.14	0.0	0.0
Sundance Lake East	1594	0.0	0.00%	0.0	96.59	0.0	0.0
Sundance Creek East	1595	28,170.1	0.07%	0.1	95.26	5.2	28,170.0
Elmworth High	1615	1,372,488.1	3.45%	2.7	363.86	976.4	1,372,485.4
Galloway	1618	0.0	0.00%	0.0	112.53	0.0	0.0
Bickerdike North	1626	0.0	0.00%	0.0	95.27	0.0	0.0
Haddock South	1636	98,791.2	0.25%	0.2	149.43	28.9	98,791.0
Mount Valley	1641	0.0	0.00%	0.0	392.65	0.0	0.0
Hargwen	1653	0.0	0.00%	0.0	119.53	0.0	0.0
Wild Hay River	1661	685,413.3	1.72%	1.3	143.42	192.2	685,412.0
Marlboro East	1663	99,160.4	0.25%	0.2	90.81	17.6	99,160.2
Hermit Lake	1673	28,420.8	0.07%	0.1	368.81	20.5	28,420.7
Benbow West	1683	0.0	0.00%	0.0	116.26	0.0	0.0
Minnow Lake	1693	74,155.9	0.19%	0.1	53.05	7.7	74,155.8
Obed North	1829	360,845.0	0.91%	0.7	109.88	77.5	360,844.3
Gold Creek	2031	340,969.7	0.86%	0.7	295.20	196.8	340,969.0
Valhalla	2107	14,273.5	0.04%	0.0	420.55	11.7	14,273.5
Burnt River	2118	70,955.0	0.18%	0.1	429.14	59.5	70,954.9
Bear River	2132	31,977.1	0.08%	0.1	430.39	26.9	31,977.0
Progress	2153	115,290.7	0.29%	0.2	445.19	100.3	115,290.5
Wembley	2158	157,227.5	0.40%	0.3	396.75	122.0	157,227.2
Bear River West	2186	19,278.1	0.05%	0.0	438.99	16.5	19,278.1
Valhalla East	2189	21,479.5	0.05%	0.0	420.45	17.7	21,479.5
Progress East	2191	236,430.7	0.59%	0.5	453.39	209.6	236,430.2
Valhalla #2	2227	66,850.6	0.17%	0.1	420.57	55.0	66,850.5
Marsh Head Creek	2228	122,206.9	0.31%	0.2	172.82	41.3	122,206.7
Millers Lake	2237	145,388.8	0.37%	0.3	98.92	28.1	145,388.5
Jones Lake North	2241	62,526.1	0.16%	0.1	438.28	53.6	62,526.0

APPENDIX 3.1

Elk River South/Brazeau Sales	3082/3084/3094	Volume:	77.8
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Niobe Creek	2242	22,779.7	0.06%	0.0	410.31	18.3	22,779.7
Deep Valley Creek South	2244	107,994.6	0.27%	0.2	178.49	37.7	107,994.4
Wapiti North	2257	0.0	0.00%	0.0	356.84	0.0	0.0
Jones Lake	2267	665,264.4	1.67%	1.3	418.79	544.7	665,263.1
Jones Lake East	2272	5,324.8	0.01%	0.0	422.30	4.4	5,324.8
Jones Lake #2	2279	182,174.3	0.46%	0.4	418.59	149.1	182,173.9
Mahaska West	2700	67,377.1	0.17%	0.1	149.94	19.8	67,377.0
Mahaska	2702	15,148.1	0.04%	0.0	165.32	4.9	15,148.1
Copton Creek	2736	157,536.8	0.40%	0.3	388.22	119.6	157,536.5
Demmitt Sales	3465	0.0	0.00%	0.0	413.68	0.0	0.0
Hermit Lake Sales	3611	0.0	0.00%	0.0	368.83	0.0	0.0
Musreau Lake	2711	293,603.8	0.74%	0.6	390.60	224.2	293,603.2
Kakwa	1811	13,773.0	0.03%	0.0	364.14	9.8	13,773.0
Demmit #2	2717	0.0	0.00%	0.0	410.30	0.0	0.0
Noel Lake South	2714	12,768.9	0.03%	0.0	214.80	5.4	12,768.9
Obed Creek	1824	149,850.0	0.38%	0.3	114.45	33.5	149,849.7
Narraway River	2745	808,403.2	2.03%	1.6	407.70	644.4	808,401.6
Marsh Head Creek West	2750	63,875.0	0.16%	0.1	166.60	20.8	63,874.9
		<u>39,792,769.0</u>	<u>100.00%</u>	<u>77.8</u>		<u>33,597.7</u>	<u>39,792,691.2</u>

Average Kilometres of Haul 431.85

APPENDIX 3.1

Empress Extraction Plants	3432/3434/3435/3440	Volume:	3,003,406.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Monarch North B	----	1,238,194.0	1.46%	43,769.7	232.36	10,170,406.8	1,194,424.3
From Carseland/Atusis Cr	----	45,335,254.0	53.36%	1,602,585.9	777.57	1,246,118,287.1	43,732,668.1
From Carbon/Wayne North B	----	7,537,359.4	8.87%	266,443.1	374.35	99,743,831.6	7,270,916.3
From Viking	----	12,814,350.5	15.08%	452,983.0	651.04	294,908,467.9	12,361,367.5
Bindloss South	1001	31,488.0	0.04%	1,113.1	47.42	52,782.7	30,374.9
Bindloss North 1	1002	38,207.7	0.04%	1,350.6	49.85	67,328.9	36,857.1
Provost North	1003	152,234.0	0.18%	5,381.4	186.94	1,006,002.7	146,852.6
Cessford Wardlow	1004	26,166.3	0.03%	925.0	130.84	121,023.1	25,241.3
Oyen	1007	48,622.8	0.06%	1,718.8	114.96	197,593.2	46,904.0
Sibbald	1008	0.0	0.00%	0.0	119.80	0.0	0.0
Atlee Buffalo	1009	108,840.0	0.13%	3,847.5	65.58	252,316.2	104,992.5
Princess Denhart	1010	37,817.9	0.04%	1,336.8	101.05	135,088.7	36,481.1
Princess	1011	0.0	0.00%	0.0	108.04	0.0	0.0
Cessford West	1012	388,187.1	0.46%	13,722.3	145.60	1,997,964.4	374,464.8
Provost South	1013	47,336.9	0.06%	1,673.3	180.67	302,323.0	45,663.6
Countess Makepeace	1015	525,136.7	0.62%	18,563.4	186.32	3,458,733.6	506,573.3
Hussar Chancellor	1016	218,398.0	0.26%	7,720.3	213.39	1,647,433.8	210,677.7
Wayne North	1021	169,075.0	0.20%	5,976.7	237.04	1,416,727.4	163,098.3
Princess Idlesleigh	1022	30,154.1	0.04%	1,065.9	91.27	97,288.1	29,088.2
Sedalia South	1023	11,140.3	0.01%	393.8	127.04	50,029.1	10,746.5
Enchant	1024	183,912.0	0.22%	6,501.2	202.46	1,316,238.4	177,410.8
Cessford East	1025	130,421.3	0.15%	4,610.3	152.31	702,202.2	125,811.0
Cessford Burfield West	1027	48,094.5	0.06%	1,700.1	192.04	326,491.9	46,394.4
Countess	1028	134,669.4	0.16%	4,760.5	154.44	735,214.4	129,908.9
Sedalia North	1036	73,228.9	0.09%	2,588.6	149.44	386,842.9	70,640.3
Provost Kessler	1038	135,453.4	0.16%	4,788.2	227.21	1,087,934.2	130,665.2
Wayne Dalum	1039	260,857.4	0.31%	9,221.2	226.93	2,092,571.6	251,636.2
Provost West	1045	41,672.1	0.05%	1,473.1	208.42	307,022.4	40,199.0
Bindloss North 3	1048	0.0	0.00%	0.0	60.38	0.0	0.0
Wildunn Creek Burfield	1049	0.0	0.00%	0.0	184.16	0.0	0.0
Verger	1056	113,367.2	0.13%	4,007.5	138.15	553,635.0	109,359.7
Oyen North	1058	47,825.6	0.06%	1,690.6	116.32	196,652.8	46,135.0
Cessford Burfield 2	1060	21,715.8	0.03%	767.6	184.11	141,331.3	20,948.2
Verger South	1062	0.0	0.00%	0.0	138.46	0.0	0.0
Wintering Hills	1070	362,127.3	0.43%	12,801.1	192.93	2,469,711.9	349,326.2
Vulcan	1076	259,464.5	0.31%	9,172.0	235.41	2,159,176.4	250,292.5
Verger Homestead	1077	19,469.8	0.02%	688.3	127.36	87,655.6	18,781.5
Sunnynook	1079	31,442.9	0.04%	1,111.5	170.66	189,687.9	30,331.4
Berry Carolside	1085	42,796.8	0.05%	1,512.9	166.46	251,829.4	41,283.9
Cessford West Gage	1086	17,687.4	0.02%	625.2	143.77	89,891.3	17,062.2
Atlee Buffalo South	1098	21,128.3	0.02%	746.9	55.74	41,631.0	20,381.4
Jenner West	1099	195,582.5	0.23%	6,913.8	79.74	551,304.4	188,668.7
Bantry	1100	147,929.2	0.17%	5,229.2	135.13	706,628.2	142,700.0
Provost Brownfield	1102	48,072.2	0.06%	1,699.3	227.13	385,970.2	46,372.9
Wintering Hills East	1104	86,040.4	0.10%	3,041.5	167.56	509,633.6	82,998.9
Rainier	1106	200,884.4	0.24%	7,101.2	158.09	1,122,628.0	193,783.2
Sedgewick	1114	54,276.2	0.06%	1,918.6	328.22	629,737.8	52,357.6
Atlee Buffalo East	1116	26,639.8	0.03%	941.7	32.37	30,483.1	25,698.1
Oyen South	1119	0.0	0.00%	0.0	98.96	0.0	0.0
Bantry North	1122	12,365.1	0.01%	437.1	131.48	57,470.2	11,928.0
Oyen East	1124	0.0	0.00%	0.0	121.92	0.0	0.0
Oyen Southeast	1126	1,035.6	0.00%	36.6	103.09	3,773.9	999.0
Hamilton Lake	1129	0.0	0.00%	0.0	180.82	0.0	0.0
Stanmore	1131	118,975.1	0.14%	4,205.7	202.79	852,879.9	114,769.4
Bantry West	1133	0.0	0.00%	0.0	135.08	0.0	0.0
Rockyford	1134	9,810.7	0.01%	346.8	230.94	80,091.1	9,463.9
Berry Creek East	1136	5,701.4	0.01%	201.5	181.31	36,541.7	5,499.9
Newell North	1140	6,486.9	0.01%	229.3	136.96	31,406.3	6,257.6
Jenner East	1143	23,417.4	0.03%	827.8	73.13	60,536.8	22,589.6
Cessford North	1145	20,245.6	0.02%	715.7	162.60	116,368.8	19,529.9

APPENDIX 3.1

Empress Extraction Plants	3432/3434/3435/3440	Volume:	3,003,406.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Matzihwin West	1150	119,835.2	0.14%	4,236.1	149.48	633,217.3	115,599.1
Cessford Northeast	1152	3,408.7	0.00%	120.5	162.60	19,592.7	3,288.2
Countess South	1155	0.0	0.00%	0.0	144.47	0.0	0.0
Stanmore South	1156	94,248.5	0.11%	3,331.7	193.14	643,475.4	90,916.8
Jarrow South	1159	32,903.1	0.04%	1,163.1	287.95	334,918.5	31,740.0
Holden	1161	181,543.5	0.21%	6,417.5	390.53	2,506,226.8	175,126.0
Killam	1162	67,420.0	0.08%	2,383.3	327.81	781,261.1	65,036.7
Jarrow	1163	100,826.4	0.12%	3,564.2	301.87	1,075,918.8	97,262.2
Ranfurly West	1165	198,144.3	0.23%	7,004.3	363.21	2,544,051.1	191,140.0
Bruce	1168	111,601.5	0.13%	3,945.1	374.37	1,476,917.8	107,656.4
Tilley	1169	259,604.3	0.31%	9,176.9	138.89	1,274,583.0	250,427.4
Benton	1175	0.0	0.00%	0.0	114.95	0.0	0.0
Scandia	1176	0.0	0.00%	0.0	166.52	0.0	0.0
Strome Holmberg	1179	172,000.4	0.20%	6,080.2	357.10	2,171,223.7	165,920.2
Bantry Northwest	1181	162,708.5	0.19%	5,751.7	127.44	732,995.4	156,956.8
Hanna	1182	32,845.0	0.04%	1,161.1	220.34	255,827.9	31,683.9
Princess West	1183	93,495.4	0.11%	3,305.0	108.17	357,505.2	90,190.4
Sullivan Lake	1193	59,535.1	0.07%	2,104.5	274.60	577,908.2	57,430.6
Chauvin	1196	22,041.8	0.03%	779.2	346.86	270,263.0	21,262.6
Baxter Lake	1197	31,813.3	0.04%	1,124.6	316.86	356,337.4	30,688.7
Baxter Lake West	1198	7,373.4	0.01%	260.6	308.69	80,459.2	7,112.8
Wainwright South	1199	19,587.6	0.02%	692.4	299.17	207,149.8	18,895.2
Verger Millicent	1203	33,211.0	0.04%	1,174.0	126.83	148,898.1	32,037.0
Lanfine	1206	87,590.0	0.10%	3,096.3	106.80	330,682.4	84,493.7
Hudson	1207	178,543.5	0.21%	6,311.5	149.60	944,193.3	172,232.0
Alderson North	1208	181,774.5	0.21%	6,425.7	129.66	833,152.0	175,348.8
Lake Newell East	1210	72,157.3	0.08%	2,550.7	148.24	378,121.1	69,606.6
Provost Monitor	1211	23,977.5	0.03%	847.6	200.61	170,036.3	23,129.9
Bruce North	1215	19,333.3	0.02%	683.4	388.28	265,360.5	18,649.9
Chinook Cereal	1221	29,064.1	0.03%	1,027.4	146.63	150,648.6	28,036.7
Monitor South	1222	79,659.2	0.09%	2,815.9	171.53	483,015.7	76,843.3
Tide Lake South	1223	195,332.0	0.23%	6,904.9	115.31	796,227.1	188,427.1
Cavendish South	1228	77,315.6	0.09%	2,733.1	25.61	69,994.2	74,582.5
Majestic	1229	6,375.1	0.01%	225.4	58.35	13,149.6	6,149.7
Baxter Lake South	1231	8,766.4	0.01%	309.9	300.61	93,155.8	8,456.5
Dorothy	1236	176,926.7	0.21%	6,254.3	214.86	1,343,798.7	170,672.4
Bodo West	1242	79,663.4	0.09%	2,816.1	221.01	622,380.6	76,847.3
Princess East	1246	187,409.3	0.22%	6,624.9	91.28	604,716.8	180,784.4
Gregory West	1259	35,583.2	0.04%	1,257.9	138.33	173,999.0	34,325.3
Edgerton	1265	14,654.8	0.02%	518.0	314.60	162,976.1	14,136.8
Edgerton West	1266	21,670.8	0.03%	766.1	303.84	232,758.3	20,904.7
Gregory	1267	45,383.4	0.05%	1,604.3	142.35	228,370.4	43,779.1
Tide Lake North	1268	33,705.0	0.04%	1,191.5	95.98	114,356.4	32,513.5
Matzihwin East	1270	98,535.1	0.12%	3,483.2	166.27	579,148.7	95,051.9
Verger West	1271	0.0	0.00%	0.0	156.38	0.0	0.0
Leo	1272	27,751.8	0.03%	981.0	259.86	254,927.0	26,770.8
Maple Glen	1273	197,963.9	0.23%	6,998.0	275.76	1,929,756.6	190,965.9
Benton West	1274	48,899.4	0.06%	1,728.6	110.58	191,146.1	47,170.8
Badger East	1275	7,984.7	0.01%	282.3	168.58	47,582.8	7,702.4
Iddesleigh South	1277	75,882.3	0.09%	2,682.4	101.00	270,923.8	73,199.9
Patricia	1278	40,490.7	0.05%	1,431.3	117.67	168,424.9	39,059.4
Jarrow West	1281	40,050.2	0.05%	1,415.8	306.72	434,242.2	38,634.4
Matzihwin North	1283	0.0	0.00%	0.0	153.98	0.0	0.0
Matzihwin Northeast	1284	95,912.0	0.11%	3,390.5	154.87	525,080.0	92,521.5
Countess West	1287	33,430.2	0.04%	1,181.7	160.03	189,114.9	32,248.5
Matzihwin West B	1288	0.0	0.00%	0.0	149.58	0.0	0.0
Patricia West	1289	71,785.9	0.08%	2,537.6	128.20	325,321.3	69,248.3
Halkirk North	1293	0.0	0.00%	0.0	299.43	0.0	0.0
Hudson North	1294	0.0	0.00%	0.0	149.70	0.0	0.0
Bantry Northeast	1296	148,797.7	0.18%	5,259.9	127.09	668,486.8	143,537.8

APPENDIX 3.1

Empress Extraction Plants	3432/3434/3435/3440	Volume:	3,003,406.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Killam North	1298	127,829.9	0.15%	4,518.7	343.50	1,552,188.5	123,311.2
Cessford South	1312	16,342.2	0.02%	577.7	138.76	80,160.4	15,764.5
Tillebrook	1314	81,424.7	0.10%	2,878.3	133.74	384,948.6	78,546.4
Cassils	1315	156,472.1	0.18%	5,531.2	151.90	840,194.7	150,940.9
Choice	1322	20,485.0	0.02%	724.1	280.53	203,142.4	19,760.9
Choice B	1323	25,458.7	0.03%	900.0	260.63	234,555.6	24,558.7
Princess South	1327	89,822.9	0.11%	3,175.2	111.74	354,797.9	86,647.7
Bassano South	1330	474,475.0	0.56%	16,772.5	195.03	3,271,146.7	457,702.5
Tide Lake East	1331	41,971.3	0.05%	1,483.7	102.29	151,764.7	40,487.6
Aeco C	1332	0.0	0.00%	0.0	108.84	0.0	0.0
Baxter Lake B	1334	22,926.2	0.03%	810.4	317.01	256,915.5	22,115.8
Wardlow East	1340	49,252.6	0.06%	1,741.1	118.34	206,037.4	47,511.5
Youngstown	1342	56,953.3	0.07%	2,013.3	226.93	456,873.6	54,940.0
Buffalo	1344	0.0	0.00%	0.0	41.15	0.0	0.0
Tide lake	1348	132,528.5	0.16%	4,684.8	107.13	501,882.0	127,843.7
Bullpound South	1350	26,882.2	0.03%	950.3	172.40	163,827.7	25,931.9
Aeco A	1351	0.0	0.00%	0.0	52.62	0.0	0.0
Aeco B	1360	0.0	0.00%	0.0	70.78	0.0	0.0
Hattie Lake	1361	0.0	0.00%	0.0	327.00	0.0	0.0
Hanna South	1364	0.0	0.00%	0.0	220.46	0.0	0.0
Gregory Northeast	1365	78,146.3	0.09%	2,762.4	144.88	400,223.1	75,383.9
Louisiana Lake	1366	225,878.3	0.27%	7,984.7	30.50	243,534.0	217,893.6
Rainier South	1378	231,422.6	0.27%	8,180.7	180.07	1,473,100.6	223,241.9
Matzihwin South	1379	70,341.1	0.08%	2,486.5	141.67	352,267.3	67,854.6
Rainier Southwest	1380	8,935.7	0.01%	315.9	173.05	54,662.0	8,619.8
Baxter Lake Northwest	1382	30,379.6	0.04%	1,073.9	324.37	348,343.7	29,305.7
Wainwright East	1383	41,040.5	0.05%	1,450.8	317.85	461,126.5	39,589.7
Jenner West B	1385	56,604.4	0.07%	2,000.9	79.79	159,655.5	54,603.5
Stevenville	1388	99,635.5	0.12%	3,522.1	121.71	428,672.5	96,113.4
Halkirk	1391	50,827.9	0.06%	1,796.7	294.17	528,549.7	49,031.2
Ribstone	1392	43,882.0	0.05%	1,551.2	344.00	533,617.6	42,330.8
Sedgewick East	1395	17,475.2	0.02%	617.7	311.09	192,173.5	16,857.5
Castor	1397	56,685.5	0.07%	2,003.8	304.77	610,702.2	54,681.7
Amisk	1399	0.0	0.00%	0.0	262.28	0.0	0.0
Bonar West	1401	26,272.1	0.03%	928.7	213.60	198,372.4	25,343.4
Sedgewick North	1403	41,749.3	0.05%	1,475.8	296.75	437,950.7	40,273.5
Tide Lake East B	1404	0.0	0.00%	0.0	102.39	0.0	0.0
Tilley South	1405	0.0	0.00%	0.0	153.14	0.0	0.0
Bullpound	1409	260,573.3	0.31%	9,211.2	194.17	1,788,534.4	251,362.1
Bullpound West	1410	0.0	0.00%	0.0	189.10	0.0	0.0
Hudson West	1413	39,906.1	0.05%	1,410.7	139.42	196,675.2	38,495.4
Hattie Lake North	1418	32,187.9	0.04%	1,137.8	329.75	375,199.9	31,050.1
Makepeace North	1419	107,062.0	0.13%	3,784.6	184.95	699,962.8	103,277.4
Acadia Valley	1424	73,733.5	0.09%	2,606.5	110.82	288,847.3	71,127.0
Aeco G	1425	0.0	0.00%	0.0	41.35	0.0	0.0
Aeco H	1426	2.2	0.00%	0.1	32.41	2.5	2.1
Gem South	1435	156,671.9	0.18%	5,538.3	153.18	848,356.6	151,133.6
Hussar North	1436	106,385.1	0.13%	3,760.7	204.03	767,291.0	102,624.4
Heisler	1439	144,339.0	0.17%	5,102.3	328.33	1,675,249.6	139,236.7
Taplow	1440	22,420.3	0.03%	792.6	200.18	158,652.7	21,627.7
Travers	1442	117,122.4	0.14%	4,140.2	193.66	801,798.3	112,982.2
Hardisty	1444	62,948.2	0.07%	2,225.2	278.70	620,162.6	60,723.0
Seiu Creek	1447	149,850.0	0.18%	5,297.1	210.81	1,116,691.5	144,552.9
Rosemary North	1461	71,528.4	0.08%	2,528.5	148.10	374,471.6	68,999.9
Lone Butte	1465	84,742.5	0.10%	2,995.6	209.43	627,372.4	81,746.9
Rosemary	1466	424,451.5	0.50%	15,004.2	148.78	2,232,327.4	409,447.3
Rosalind	1468	43,666.5	0.05%	1,543.6	361.92	558,658.3	42,122.9
Halkirk East	1470	0.0	0.00%	0.0	302.54	0.0	0.0
Hanna North	1471	0.0	0.00%	0.0	241.41	0.0	0.0
Aeco I	1473	0.0	0.00%	0.0	118.06	0.0	0.0

APPENDIX 3.1

Empress Extraction Plants	3432/3434/3435/3440	Volume:	3,003,406.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Bindloss West	1474	38,844.1	0.05%	1,373.1	60.77	83,444.9	37,471.0
Gleichen	1480	318,565.1	0.37%	11,261.2	219.11	2,467,434.6	307,303.9
Gem West	1490	50,793.5	0.06%	1,795.5	167.89	301,452.0	48,998.0
Wainwright North	1498	0.0	0.00%	0.0	314.65	0.0	0.0
Blood Indian Creek	1505	14,175.8	0.02%	501.1	135.24	67,770.1	13,674.7
Endiang	1507	26,155.7	0.03%	924.6	252.20	233,182.9	25,231.1
Rivercourse	1510	35,505.2	0.04%	1,255.1	340.97	427,950.4	34,250.1
Daysland	1529	5,149.8	0.01%	182.0	351.72	64,028.4	4,967.8
Scollard	1531	0.0	0.00%	0.0	291.92	0.0	0.0
Standard	1534	591,525.0	0.70%	20,910.2	224.13	4,686,605.1	570,614.8
Scottfield	1537	18,809.6	0.02%	664.9	219.18	145,735.6	18,144.7
Hackett	1538	63,822.3	0.08%	2,256.1	298.41	673,241.8	61,566.2
Gough Lake	1560	29,999.3	0.04%	1,060.5	268.09	284,300.1	28,938.8
Byemoor	1561	33,628.8	0.04%	1,188.8	273.27	324,854.3	32,440.0
Watts	1570	56,900.5	0.07%	2,011.4	226.44	455,464.5	54,889.1
Milo	1578	197,961.0	0.23%	6,997.9	207.49	1,451,984.8	190,963.1
Roselynn	1579	18,131.0	0.02%	640.9	189.08	121,186.0	17,490.1
Shorncliffe Creek	1582	0.0	0.00%	0.0	249.52	0.0	0.0
Rumsey North	1598	0.0	0.00%	0.0	307.66	0.0	0.0
Queenstown	1601	204,663.3	0.24%	7,234.8	246.97	1,786,773.2	197,428.5
Hays	1603	160,923.5	0.19%	5,688.6	228.86	1,301,891.0	155,234.9
Berry Creek South	1604	61,296.2	0.07%	2,166.8	185.56	402,071.4	59,129.4
Monitor Creek	1605	8,213.4	0.01%	290.3	159.58	46,332.6	7,923.1
Foreman	1611	0.0	0.00%	0.0	313.54	0.0	0.0
Coates Lake	1612	49,136.5	0.06%	1,737.0	170.15	295,543.5	47,399.5
Acadia North	1613	43,045.8	0.05%	1,521.7	99.17	150,902.5	41,524.1
Contracosta Lake	1614	26,078.0	0.03%	921.8	241.97	223,059.7	25,156.2
Blood Indian Creek East	1616	26,840.2	0.03%	948.8	140.93	133,713.3	25,891.4
Acadia East	1631	50,453.7	0.06%	1,783.5	100.92	179,993.0	48,670.2
Contracosta East	1635	34,112.9	0.04%	1,205.9	254.42	306,799.9	32,907.0
Tide Lake B	1639	161,960.6	0.19%	5,725.3	107.15	613,472.2	156,235.3
McGregor Lake	1640	0.0	0.00%	0.0	212.49	0.0	0.0
Tillbrook West	1644	122,043.2	0.14%	4,314.2	139.66	602,519.2	117,729.0
Metiskow North	1645	11,643.1	0.01%	411.6	245.54	101,059.3	11,231.5
Badger North	1649	192,219.2	0.23%	6,794.9	188.77	1,282,670.2	185,424.3
Wildunn Creek East	1650	27,807.8	0.03%	983.0	179.80	176,742.7	26,824.8
Sharrow South	1657	0.0	0.00%	0.0	14.00	0.0	0.0
Gilt Edge West	1662/386	100,796.5	0.12%	3,563.1	324.23	1,155,271.1	97,233.4
Parsons Lake	1665	14,410.2	0.02%	509.4	306.67	156,216.4	13,900.8
Indian Lake	1678	13,983.1	0.02%	494.3	216.24	106,887.0	13,488.8
Hastings Coulee	1709	60,694.4	0.07%	2,145.5	335.82	720,510.7	58,548.9
Indian Lake #2	1717	109,204.7	0.13%	3,860.3	216.37	835,263.8	105,344.4
Beltz Lake	1720	101,042.3	0.12%	3,571.8	318.91	1,139,086.3	97,470.5
Hackett West	1722	95,219.8	0.11%	3,366.0	340.281	1,145,381.7	91,853.8
Cadogan	1725	81,650.4	0.10%	2,886.3	248.16	716,267.7	78,764.1
Cadogan West	1726	0.0	0.00%	0.0	245.42	0.0	0.0
Paradise Valley	1728	4,198.2	0.00%	148.4	330.57	49,058.2	4,049.8
Cavalier	1737	398,130.4	0.47%	14,073.8	240.46	3,384,179.9	384,056.6
Estridge Lake	1746	5,315.8	0.01%	187.9	332.74	62,525.7	5,127.9
Lonesome Lake	1768	59,355.9	0.07%	2,098.2	182.25	382,392.7	57,257.7
Monitor Creek West	1771	12,586.6	0.01%	444.9	170.42	75,827.1	12,141.7
Bloor Lake	1779	127,768.5	0.15%	4,516.6	281.74	1,272,512.9	123,251.9
Bassano South #2	1794	90,255.3	0.11%	3,190.5	195.04	622,280.4	87,064.8
Galarneau Creek	1804	0.0	0.00%	0.0	188.94	0.0	0.0
Dowling	1818	98,600.6	0.12%	3,485.5	189.94	662,035.5	95,115.1
Lee Lake	1833	22,963.6	0.03%	811.8	291.81	236,877.6	22,151.8
Halkirk North #2	1834	124,580.1	0.15%	4,403.9	299.43	1,318,627.1	120,176.2
Bigknife Creek	1835	44,500.0	0.05%	1,573.1	291.87	459,129.0	42,926.9
Tilley South #2	1839	47,154.5	0.06%	1,666.9	153.13	255,251.7	45,487.6
Torlea East	1841	96,987.2	0.11%	3,428.5	348.38	1,194,401.7	93,558.7

APPENDIX 3.1

Empress Extraction Plants	3432/3434/3435/3440	Volume:	3,003,406.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Countess South #2	2296	213,695.9	0.25%	7,554.1	143.57	1,084,538.9	206,141.8
Aeco C Sales	3473	0.0	0.00%	0.0	108.91	0.0	0.0
Hamilton Lake Summary	3915	107,605.9	0.13%	3,803.8	180.82	687,808.9	103,802.1
Veteran Summary	3916	16,402.4	0.02%	579.8	206.18	119,547.1	15,822.6
Veteran	5080	0.0	0.00%	0.0	206.18	0.0	0.0
Severn Creek	1821	0.0	0.00%	0.0	208.47	0.0	0.0
Sedalia	1827	28,345.1	0.03%	1,002.0	135.733	136,003.1	27,343.1
		<u>84,962,818.7</u>	<u>100.00%</u>	<u>3,003,406.9</u>		<u>1,775,680,482.9</u>	<u>81,959,411.8</u>

Average Kilometres of Haul

591.22

APPENDIX 3.1

Inland Sales	3419/3857/3840	Volume:	745,832.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Bens Lake Interchange	----	13,009,041.2	99.69%	743,502.8	271.57	201,913,056.5	12,265,538.4
Warwick South	1173	20,000.0	0.15%	1,143.1	24.40	27,890.6	18,856.9
Fitzallan	1260	0.0	0.00%	0.0	24.41	0.0	0.0
Royal Park	1299	20,769.6	0.16%	1,187.0	6.50	7,715.8	19,582.6
Inland South	1525	0.0	0.00%	0.0	0.53	0.0	0.0
Inland Sales (***)	3419	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>13,049,810.8</u>	<u>100.00%</u>	<u>745,832.9</u>		<u>201,948,662.9</u>	<u>12,303,977.9</u>

Average Kilometres of Haul 270.77

(***) Sum of 3840, 3857 and 3419.

APPENDIX 3.1

Joffre	3466/3615	Volume:	882,978.2
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Rim-West	----	2,299,413.3	54.76%	483,510.4	113.60	54,928,794.3	1,815,902.9
Gilby 2	1037	318,510.1	7.59%	66,974.9	79.40	5,317,805.7	251,535.2
Gilby North 1	1041	145,714.5	3.47%	30,640.2	86.70	2,656,504.9	115,074.3
Gilby North 2	1042	0.0	0.00%	0.0	86.70	0.0	0.0
Gilby North 3	1050	979.3	0.02%	205.9	86.70	17,853.5	773.4
Gilby 3	1051	0.0	0.00%	0.0	79.50	0.0	0.0
Sylvan Lake	1054	241,904.7	5.76%	50,866.6	63.80	3,245,291.7	191,038.1
Sylvan Lake West	1055	420,386.6	10.01%	88,397.0	75.80	6,700,494.1	331,989.6
Prevo Dome	1063	0.0	0.00%	0.0	57.40	0.0	0.0
Gilby North HBOG	1078	0.0	0.00%	0.0	86.70	0.0	0.0
Gilby South	1084	178,769.6	4.26%	37,590.9	79.50	2,988,474.5	141,178.7
Joffre	1167	28,054.0	0.67%	5,899.1	46.40	273,716.8	22,154.9
Sylvan Lake East	1187	15,363.1	0.37%	3,230.5	56.80	183,491.5	12,132.6
Sylvan Lake South	1191	195,242.5	4.65%	41,054.7	74.10	3,042,154.9	154,187.8
Medicine River A	1214	18,778.7	0.45%	3,948.7	86.10	339,983.2	14,830.0
Cygnnet Lake	1226	0.0	0.00%	0.0	56.70	0.0	0.0
Benalto	1238	0.0	0.00%	0.0	63.70	0.0	0.0
Gilby East	1243	1,934.6	0.05%	406.8	81.80	33,276.2	1,527.8
Bentley	1261	0.0	0.00%	0.0	75.40	0.0	0.0
Benalto West	1264	24,229.5	0.58%	5,094.9	70.00	356,641.0	19,134.6
Forshee	1376	51,540.1	1.23%	10,837.6	71.40	773,806.2	40,702.5
Briggs	1619	180,492.5	4.30%	37,953.2	50.65	1,922,327.5	142,539.3
Piper Creek	1739	77,835.3	1.85%	16,366.9	9.00	147,301.7	61,468.4
Joffre Sales	3466	0.0	0.00%	0.0	0.10	0.0	0.0
Joffre Sales #3	3492	0.0	0.00%	0.0	0.119	0.0	0.0
		<u>4,199,148.4</u>	<u>100.00%</u>	<u>882,978.2</u>		<u>82,927,917.9</u>	<u>3,316,170.2</u>

Average Kilometres of Haul

93.92

APPENDIX 3.1

Leming Lake	3870/3605/3606/3621	Volume:	1,393,964.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Kirby Interchange	----	0.0	0.00%	0.0	242.51	0.0	0.0
Caribou Lake	1692	573,364.4	32.70%	455,808.3	51.50	23,474,125.0	117,556.1
Jackfish Creek	1694	30,792.7	1.76%	24,479.3	2.00	48,958.6	6,313.4
Canoe Lake	1805	1,144,844.6	65.29%	910,118.6	65.39	59,512,656.7	234,726.0
Marguerite Lake Sales	3604	0.0	0.00%	0.0	11.92	0.0	0.0
Loseman Lake Sales	3605	4,475.9	0.26%	3,558.2	19.39	68,993.7	917.7
Leming Lake Sales Lat Jct	5807	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>1,753,477.6</u>	<u>100.00%</u>	<u>1,393,964.4</u>		<u>83,104,734.0</u>	<u>359,513.2</u>

Average Kilometres of Haul

59.62

APPENDIX 3.1

Louise Creek/Judy Creek	3080/3078	Volume:	1,248.5
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Marten Hills Interchange	----	0.0	0.00%	0.0	80.32	0.0	0.0
Judy Creek	2022	102,096.8	100.00%	1,248.5	0.65	811.5	100,848.3
Judy Creek North	2025	0.0	0.00%	0.0	0.66	0.0	0.0
Virginia Hills Sales	3063	0.0	0.00%	0.0	16.19	0.0	0.0
Louise Creek Sales	3080	0.0	0.00%	0.0	0.58	0.0	0.0
		<u>102,096.8</u>	<u>100.00%</u>	<u>1,248.5</u>		<u>811.5</u>	<u>100,848.3</u>

Average Kilometres of Haul 0.65

APPENDIX 3.1

Mildred Lake	3120/3123/5100	Volume:	1,480,465.9
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Vandersteene Lake Int.	----	816,042.6	38.08%	563,741.7	321.40	181,187,602.2	252,301.0
Blanchet Lake North	1648	0.0	0.00%	0.0	155.43	0.0	0.0
Chelsea Creek	1708	134,612.0	6.28%	92,993.2	232.14	21,587,248.3	41,618.8
Rabbit Lake	1741	203,829.9	9.51%	140,810.5	202.12	28,461,189.6	63,019.4
Whistwow	1787	174,961.8	8.16%	120,867.8	184.05	22,245,834.0	54,094.0
Rod Lake	2715	2,066.1	0.10%	1,427.3	173.45	247,561.4	638.8
Mildred Lake Sales	3120	0.0	0.00%	0.0	0.02	0.0	0.0
Liege	5003	92,746.3	4.33%	64,071.3	170.27	10,909,684.8	28,675.0
Saleski	5004	43,142.7	2.01%	29,804.0	110.47	3,292,388.6	13,338.7
Mackay River	5021	31,685.0	1.48%	21,888.8	155.45	3,402,606.4	9,796.2
Dunkirk River	5022	285,941.6	13.34%	197,535.3	202.15	39,932,344.2	88,406.3
Chipewyan River	5023	0.0	0.00%	0.0	170.32	0.0	0.0
Grew Lake	5025	68,239.4	3.18%	47,141.4	151.32	7,133,389.4	21,098.0
Thickwood Hills	5027	50,749.7	2.37%	35,059.1	129.97	4,556,455.8	15,690.6
Grew Lake East	5028	124,106.9	5.79%	85,736.0	153.45	13,156,445.9	38,370.9
Osi Creek	5082	0.0	0.00%	0.0	191.10	0.0	0.0
Liege North	5083	114,920.2	5.36%	79,389.6	191.69	15,218,272.9	35,530.6
Osi Creek South	5084	0.0	0.00%	0.0	191.13	0.0	0.0
		<u>2,143,044.2</u>	<u>1.0</u>	<u>1,480,465.9</u>		<u>351,331,023.4</u>	<u>662,578.3</u>

Average Kilometres of Haul 237.3

APPENDIX 3.1

Monarch North B	3863/3411	Volume:	20,826.2
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Monarch North A	1313	5,030.6	0.82%	171.0	0.10	17.1	4,859.6
Whitney	1544	0.0	0.00%	0.0	0.11	0.0	0.0
Monarch North B Sales	3411/3863	440,196.8	71.83%	14,959.5	0.10	1,496.0	425,237.3
Orton	2726	167,601.0	27.35%	5,695.7	0.179	1,019.5	161,905.3
		<u>612,828.4</u>	<u>100.00%</u>	<u>20,826.2</u>		<u>2,532.6</u>	<u>592,002.2</u>
Excess receipt volumes		<u>(592,002.2)</u>					

Upstream Receipts	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Retlaw	1057	103,887.4	16.08%	0.0	51.61	0.0	103,887.4
Retlaw South	1218	316,675.7	49.01%	0.0	59.82	0.0	316,675.7
Keho Lake	1224	5,049.4	0.78%	0.0	15.21	0.0	5,049.4
Iron Springs	1593	505.0	0.08%	0.0	26.94	0.0	505.0
Picture Butte	1610	15,805.1	2.45%	0.0	20.21	0.0	15,805.1
McBride Lake	1735	0.0	0.00%	0.0	11.76	0.0	0.0
Keho Lake North	1775	14,253.2	2.21%	0.0	35.72	0.0	14,253.2
Bailey's Bottom	1782	32,846.5	5.08%	0.0	39.25	0.0	32,846.5
Diamond City	1793	20,483.8	3.17%	0.0	24.55	0.0	20,483.8
Welling	1825	136,685.7	21.15%	0.0	47.862	0.0	136,685.7
		<u>646,191.8</u>	<u>100.00%</u>	<u>0.0</u>		<u>0.0</u>	<u>1,238,194.0</u>
TOTALS				<u>20,826.2</u>		<u>2,532.6</u>	

Average Kilometres of Haul 0.12

Note: in 2002 all volumes From the Upstream Receipts flowed northeast to the Empress Extraction Plants

APPENDIX 3.1

Moosehorn River	3092	Volume:	22,203.2
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume- Distance	Remaining Volume
From Louise Creek/Judy Creek	----	100,848.3	100.00%	22,203.2	26.04	578,060.3	78,645.1
		<u>100,848.3</u>	<u>100.00%</u>	<u>22,203.2</u>		<u>578,060.3</u>	<u>78,645.1</u>
Average Kilometres of Haul						26.04	

APPENDIX 3.1

North Penhold	3454/3341	Volume:	153,868.0
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Joffre	----	3,316,170.2	99.51%	153,115.8	64.19	9,828,259.6	3,163,054.4
Penhold	1180	16,291.7	0.49%	752.2	7.10	5,340.8	15,539.5
Penhold North Sales	3454	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>3,332,461.9</u>	<u>100.00%</u>	<u>153,868.0</u>		<u>9,833,600.4</u>	<u>3,178,593.9</u>

Average Kilometres of Haul 63.91

APPENDIX 3.1

Outlet Creek	3091	Volume:	122.5
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Kaybob	2013	80,261.8	20.20%	24.7	2.00	49.4	80,237.1
Kaybob 11-36	2027	11,910.1	3.00%	3.7	5.46	20.1	11,906.4
Raspberry Lake	2211	150,001.0	37.76%	46.3	26.66	1,233.3	149,954.7
Two Creeks	2224	35,927.1	9.04%	11.1	38.76	429.4	35,916.0
Two Creeks East	2229	36,501.3	9.19%	11.3	53.34	600.3	36,490.0
Chickadee Creek West	2286	82,685.6	20.81%	25.5	48.9	1,245.7	82,660.1
Outlet Creek Sales	3091	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>397,286.9</u>	<u>100.00%</u>	<u>122.5</u>		<u>3,578.2</u>	<u>397,164.4</u>

Average Kilometres of Haul 29.21

APPENDIX 3.1

Ranfurly Sales/Elk Point	3610/3456/3911	Volume:	93,712.7
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Ranfurly (*)	1164	1,909.9	0.90%	843.9	0.10	84.4	1,066.0
Ranfurly B	1333	0.0	0.00%	0.0	0.10	0.0	0.0
Minburn	1396	27,546.2	12.99%	12,170.8	14.65	178,302.4	15,375.4
Irish	1441	84,587.1	39.88%	37,373.4	5.22	194,976.8	47,213.7
Beauvallon	1459	0.0	0.00%	0.0	74.64	0.0	0.0
Morecambe	1460	70,353.2	33.17%	31,084.4	97.38	3,026,901.1	39,268.8
Maughan	1514	19,511.7	9.20%	8,620.9	38.29	330,103.3	10,890.8
Clandonald	1535	2,264.2	1.07%	1,000.4	52.39	52,409.8	1,263.8
Myrnam	1730	5,927.6	2.79%	2,619.0	89.54	234,513.9	3,308.6
Landon Lake Sales	3460	0.0	0.00%	0.0	5.27	0.0	0.0
Ranfurly C	1756	0.0	0.00%	0.0	0.059	0.0	0.0
		<u>212,099.9</u>	<u>100.00%</u>	<u>93,712.7</u>		<u>4,017,291.7</u>	<u>118,387.2</u>

(*) Sum of 1164 and 3610

Average Kilometres of Haul

42.87

APPENDIX 3.1

Redwater B	3438/3406	Volume:	88,876.1
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Big Bend	1157	151,297.0	17.69%	15,719.6	134.69	2,117,270.0	135,577.4
Big Bend East	1225	20,857.4	2.44%	2,167.1	135.76	294,199.9	18,690.3
Bolloque	1227	11,262.4	1.32%	1,170.1	96.93	113,422.6	10,092.3
Nestow	1276	40,372.4	4.72%	4,194.6	41.95	175,965.3	36,177.8
Dapp East	1279	3,602.4	0.42%	374.3	63.39	23,725.9	3,228.1
Bolloque South	1290	44,521.8	5.20%	4,625.8	94.32	436,301.9	39,896.0
Westlock	1321	60,029.8	7.02%	6,237.0	233.44	1,455,971.0	53,792.8
Lawrence Lake	1324	11,016.0	1.29%	1,144.5	141.65	162,125.4	9,871.5
Rochester	1336	25,597.9	2.99%	2,659.6	65.99	175,506.4	22,938.3
Abee	1337	54,267.5	6.34%	5,638.3	61.71	347,941.3	48,629.2
Meyer	1362	28,256.8	3.30%	2,935.8	168.20	493,809.6	25,321.0
Meyer B	1363	0.0	0.00%	0.0	168.30	0.0	0.0
Thorhild	1377	26,717.6	3.12%	2,775.9	27.58	76,560.1	23,941.7
Flatbush	1394	12,436.9	1.45%	1,292.2	112.01	144,737.0	11,144.7
Tieland	1412	44,566.2	5.21%	4,630.4	128.27	593,938.2	39,935.8
Chisholm Mills	1434	18,625.5	2.18%	1,935.2	139.77	270,478.3	16,690.3
Egremont	1513	0.0	0.00%	0.0	27.72	0.0	0.0
Rourke Creek	1515	0.0	0.00%	0.0	144.77	0.0	0.0
Analta	1518	0.0	0.00%	0.0	62.25	0.0	0.0
Vimy	1527	39,247.8	4.59%	4,077.8	54.72	223,137.2	35,170.0
Linaria	1536	38,654.5	4.52%	4,016.2	117.31	471,135.3	34,638.3
Jarvie	1543	0.0	0.00%	0.0	101.09	0.0	0.0
Opal	1545	20,156.2	2.36%	2,094.2	0.20	418.8	18,062.0
Larkspur	1564	7,191.0	0.84%	747.1	79.91	59,703.7	6,443.9
Westlock B	1575	1,058.2	0.12%	109.9	67.88	7,463.1	948.3
Bolloque East	1629	0.0	0.00%	0.0	108.76	0.0	0.0
Fairydeil Creek	1677	18,030.3	2.11%	1,873.3	23.05	43,180.2	16,157.0
Lawrence Lake North	1695	61,559.0	7.20%	6,395.9	204.77	1,309,689.8	55,163.1
Rourke Creek East	1706	23,440.3	2.74%	2,435.4	210.50	512,655.7	21,004.9
Dancing Lake	1738	16,233.7	1.90%	1,686.7	121.93	205,654.7	14,547.0
Armstrong Lake	1770	21,359.5	2.50%	2,219.2	61.40	136,260.5	19,140.3
Bolloque #2	1778	48,923.0	5.72%	5,083.0	96.92	492,663.6	43,840.0
Horseshoe Lake	1788	0.0	0.00%	0.0	89.02	0.0	0.0
Flatbush South	1790	0.0	0.00%	0.0	109.54	0.0	0.0
Jarvie North	1799	3,732.0	0.44%	387.8	98.62	38,239.9	3,344.2
Westlock	3871	2,397.1	0.28%	249.1	67.92	16,915.9	2,148.0
Redwater B	3438	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>855,410.2</u>	<u>100.00%</u>	<u>88,876.1</u>			<u>766,534.1</u>

Average Kilometres of Haul

117.01

APPENDIX 3.1

Rim-West/Lloyd Creek	3405/3474/3115	Volume:	195,894.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Rimbey/Westerose	1949	1,672,555.9	67.03%	131,304.2	0.10	13,130.4	1,541,251.7
Rimbey	1033	0.0	0.00%	0.0	0.10	0.0	0.0
Ferrybank (*)	1141	0.0	0.00%	0.0	13.18	0.0	0.0
Ferrybank North	1258	0.0	0.00%	0.0	20.98	0.0	0.0
Falun South	1408	0.0	0.00%	0.0	29.54	0.0	0.0
Ferrybank East	1472	0.0	0.00%	0.0	16.58	0.0	0.0
Pigeon Lake	1642	0.0	0.00%	0.0	35.94	0.0	0.0
Springdale (**)	1687	0.0	0.00%	0.0	1.00	0.0	0.0
Bonnie Glenn	1796	821,556.9	32.92%	64,496.4	46.16	2,977,025.4	757,060.5
Westerose	2009	0.0	0.00%	0.0	0.10	0.0	0.0
Rim West	3405	1,194.9	0.05%	93.8	0.10	9.4	1,101.1
Lloyd Creek Sales	3474	0.0	0.00%	0.0	0.10	0.0	0.0
		<u>2,495,307.7</u>	<u>100.00%</u>	<u>195,894.4</u>		<u>2,990,165.2</u>	<u>2,299,413.3</u>

(*) Sum of 1141 and 1962

Average Kilometres of Haul

15.26

(**) Sum of 1687 and 1959

APPENDIX 3.1

Viking	3410/3890	Volume:	50,374.5
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Inland	----	12,303,977.9	95.64%	48,178.8	315.26	15,188,808.6	12,255,799.1
From Ranfurly	----	118,387.2	0.92%	463.6	84.66	39,245.0	117,923.6
From Bens Lake Interchange	----	0.0	0.00%	0.0	316.06	0.0	0.0
Plain Lake	1110	137,075.7	1.07%	536.7	48.25	25,898.1	136,539.0
Lavoy	1132	133,332.6	1.04%	522.1	34.31	17,913.0	132,810.5
West Viking	1188	71,596.8	0.56%	280.4	11.02	3,089.5	71,316.4
Ranfurly North	1189	70,296.1	0.55%	275.3	20.46	5,631.8	70,020.8
Viking North	1257	6,861.8	0.05%	26.9	15.62	419.7	6,834.9
Fitzallan South	1300	10,465.6	0.08%	41.0	41.06	1,682.6	10,424.6
Viking East	1347	9,542.3	0.07%	37.4	6.88	257.1	9,504.9
Torlea	1503	0.0	0.00%	0.0	0.10	0.0	0.0
Torlea North	1743	0.0	0.00%	0.0	5.47	0.0	0.0
Viking Sales	3410/389	3,189.0	0.02%	12.5	0.10	1.2	3,176.5
		<u>12,864,725.0</u>	<u>100.00%</u>	<u>50,374.5</u>		<u>15,282,946.6</u>	<u>12,814,350.5</u>

Average Kilometres of Haul

303.39

APPENDIX 3.2

ABC Border	2001	Volume:	21,764,919.0
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Cochrane	---	19,921,761.9	90.75%	19,752,074.0	654.76	12,932,943,580.7	169,687.9
Waterton 1	1945	1,057,813.6	4.82%	1,048,803.4	74.33	77,957,560.2	9,010.2
Coleman	2003	259,973.2	1.18%	257,758.8	7.35	1,894,527.3	2,214.4
Alberta Montana	2006/386	96,599.6	0.44%	95,776.8	0.00	0.0	822.8
Quirk Creek	2026	583,453.8	2.66%	578,484.1	167.08	96,653,124.7	4,969.7
Fish Creek	2161	2,326.7	0.01%	2,306.9	176.47	407,095.4	19.8
Hartell	2183	0.0	0.00%	0.0	149.79	0.0	0.0
Priddis Sales	3073/387	18,557.3	0.08%	18,399.2	176.00	3,238,265.2	158.1
Nelson Creek	2741	0.0	0.00%	0.0	70.95	0.0	0.0
Callum Creek	2743	11,412.9	0.05%	11,315.7	73.15	827,746.0	97.2
		<u>21,951,899.0</u>	<u>100.00%</u>	<u>21,764,919.0</u>		<u>13,113,921,899.5</u>	<u>186,980.0</u>

Average Kilometres of Haul

602.53

APPENDIX 3.2

Empress Border/McNeill Border	1958/6400/6404	Volume:	80,917,002.4
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
From Empress Extraction	----	81,959,411.8	97.61%	78,984,110.7	592.80	46,821,945,324.8	2,975,301.1
From Cousins A&B (*)	----	435,065.1	0.52%	419,271.3	153.26	64,256,052.0	15,793.8
From Medicine Hat Lateral (**)	----	1,409,274.5	1.68%	1,358,114.8	47.30	64,238,820.0	51,159.7
Medicine Hat North 1	1017	35,346.7	0.04%	34,063.5	29.67	1,010,665.2	1,283.2
Medicine Hat North 2	1059	0.0	0.00%	0.0	29.67	0.0	0.0
Medicine Hat North Arco	1184	62,015.2	0.07%	59,763.9	29.67	1,773,195.4	2,251.3
Medicine Hat Northwest	1205	32,177.0	0.04%	31,008.9	29.97	929,336.9	1,168.1
Medicine Hat North 4	1240	0.0	0.00%	0.0	29.97	0.0	0.0
Hilda North	1244	0.0	0.00%	0.0	14.99	0.0	0.0
Schuler	1263	0.0	0.00%	0.0	36.56	0.0	0.0
Medicine Hat North F	1325	20,277.1	0.02%	19,541.0	29.97	585,643.7	736.1
Hilda West	1402	11,547.4	0.01%	11,128.2	19.79	220,227.2	419.2
		<u>83,965,114.8</u>	<u>100.00%</u>	<u>80,917,002.4</u>		<u>46,954,959,265.3</u>	<u>3,048,112.4</u>
		161,363.4		Average Kilometres of Haul		580.29	

(*) see Cousins A&B calculation sheet for details

(**) see Medicine Hat calculation sheet for details

APPENDIX 3.2

Gordondale Border	2074	Volume:	57,539.0
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Receipt Station	Station Number	Available Volume	Proration Factor	Prorated Volume	Distance (km)	Volume-Distance	Remaining Volume
Owl Lake	1817	374,363.2	3.00%	1,727.7	194.421	335,899.4	372,635.5
Josephine East	2083	20,800.2	0.17%	96.0	69.85	6,705.1	20,704.2
Josephine	2087	46,533.5	0.37%	214.8	55.88	12,000.4	46,318.7
Fourth Creek	2103	26,448.6	0.21%	122.1	66.36	8,099.6	26,326.5
Mulligan Creek	2142	0.0	0.00%	0.0	75.75	0.0	0.0
Tanghe Creek	2157	2,287,268.7	18.35%	10,555.8	194.28	2,050,775.9	2,276,712.9
Fourth Creek South	2178	3,534.9	0.03%	16.3	41.91	683.7	3,518.6
Silver Valley	2184	0.0	0.00%	0.0	62.87	0.0	0.0
Gordondale (*)	2190/2074	184,619.2	1.48%	852.0	0.10	85.2	183,767.2
Fourth Creek West	2198	154,979.2	1.24%	715.2	55.88	39,967.1	154,264.0
Foulwater Creek	2199	1,414,027.0	11.34%	6,525.8	241.54	1,576,230.4	1,407,501.2
Tanghe Creek No. 2	2204	289,397.8	2.32%	1,335.6	194.30	259,502.1	288,062.2
Whitburn	2205	0.0	0.00%	0.0	26.81	0.0	0.0
Mulligan Creek South	2206	135.2	0.00%	0.6	78.00	48.7	134.6
Sneddon Creek North	2212	0.0	0.00%	0.0	62.99	0.0	0.0
Bear Canyon West	2222	73,486.3	0.59%	339.1	77.83	26,395.3	73,147.2
Moonshine Lake	2240	0.0	0.00%	0.0	67.96	0.0	0.0
Fontas River	2251	191,148.4	1.53%	882.2	271.16	239,204.4	190,266.2
Lathrop Creek	2259	439,070.4	3.52%	2,026.3	123.65	250,553.9	437,044.1
Zama Lake #2	2263	148,464.4	1.19%	685.2	468.23	320,812.1	147,779.2
Snowfall Creek	2264	41,868.9	0.34%	193.2	271.07	52,377.6	41,675.7
Shekilie River North	2276	586,951.5	4.71%	2,708.8	429.05	1,162,205.8	584,242.7
Foulwater Creek #2	2283	0.0	0.00%	0.0	241.55	0.0	0.0
Steen River	2284	293,789.6	2.36%	1,355.8	389.06	527,504.2	292,433.8
Zama Lake #3	2292/1944	430,015.0	3.45%	1,984.5	465.25	923,300.2	428,030.5
Whitburn East	2701	690,025.4	5.53%	3,184.5	31.68	100,884.2	686,840.9
Bootis Hill	2709	735,782.6	5.90%	3,395.6	443.79	1,506,940.3	732,387.0
Marlow Creek	2713	157,396.2	1.26%	726.4	416.01	302,185.1	156,669.8
Jackpot Creek	2723	30,539.3	0.24%	140.9	397.93	56,083.4	30,398.4
Owl Lake South	2728	35,433.2	0.28%	163.5	170.725	27,917.8	35,269.7
Owl Lake South #2	2742	1,025,734.2	8.23%	4,733.8	170.70	808,069.9	1,021,000.4
Owl Lake South #3	2746	2,456,394.4	19.70%	11,336.3	170.68	1,934,821.6	2,445,058.1
Tanghe Creek #3	2747	329,580.0	2.64%	1,521.0	194.3	295,533.4	328,059.0
Boundary Lake Border	3002	0.0	0.00%	0.0	90.72	0.0	0.0
		<u>12,467,787.3</u>	<u>100.00%</u>	<u>57,539.0</u>		<u>12,824,786.9</u>	<u>12,410,248.3</u>

(*) Sum of 2190, 2074 and 3886

Average Kilometres of Haul

222.89

Bens Lake Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Inland	To Viking
From Redwater	----	766,534.1	291.71	223,602,893.8	766,534.1	0.0
From Atmore B	----	289,870.2	160.38	46,490,238.1	289,870.2	0.0
From Leming Lake	----	359,513.2	312.64	112,398,762.0	359,513.2	0.0
From Kirby Interchange	----	2,309,551.9	303.09	699,995,280.8	2,309,551.9	0.0
From Vandersteene Lake Int.	----	204,010.7	519.89	106,062,660.6	204,010.7	0.0
From Mildred Lake	----	662,578.3	495.81	328,513,710.0	662,578.3	0.0
Figure Lake	1087/1942	51,307.2	129.39	6,638,638.6	51,307.2	0.0
Craigend	1088	19,318.2	166.11	3,208,946.2	19,318.2	0.0
Bellis	1089	59,424.7	55.40	3,292,128.4	59,424.7	0.0
Mitsue	1090	148,543.2	378.35	56,201,171.2	148,543.2	0.0
Marten Hills	1091	553,800.6	258.44	143,121,458.1	553,800.6	0.0
Boyle	1092	0.0	111.12	0.0	0.0	0.0
Flat Lake	1095	127,582.5	132.21	16,867,682.3	127,582.5	0.0
Marten Hills South	1097	154,584.3	266.49	41,194,551.8	154,584.3	0.0
Craigend East	1112	58,453.3	134.56	7,865,476.0	58,453.3	0.0
Warwick	1118	64,875.6	0.10	6,487.6	64,875.6	0.0
Ukalta	1120	23,759.1	50.28	1,194,607.5	23,759.1	0.0
Craigend South	1148	72,943.2	150.87	11,004,940.6	72,943.2	0.0
Nipisi	1194	40,152.7	378.37	15,192,536.9	40,152.7	0.0
Edwand	1213	86,118.9	72.19	6,216,923.4	86,118.9	0.0
Hairy Hill	1230	78,830.9	18.44	1,453,641.8	78,830.9	0.0
Hylo	1241	21,361.2	152.60	3,259,719.1	21,361.2	0.0
Flat Lake South	1245	0.0	118.73	0.0	0.0	0.0
Tweedie South	1256	22,760.6	174.17	3,964,213.7	22,760.6	0.0
Norma	1280	0.0	8.96	0.0	0.0	0.0
Hamlin	1291	16,004.5	58.34	933,702.5	16,004.5	0.0
Mons Lake	1292	760.2	83.51	63,484.3	760.2	0.0
Smoky River	1295	0.0	66.30	0.0	0.0	0.0
Flat Lake North	1302	12,187.0	147.39	1,796,241.9	12,187.0	0.0
Grassland	1303	0.0	151.12	0.0	0.0	0.0
Prosperity	1304	5,876.9	156.53	919,911.2	5,876.9	0.0
Richmond	1306	2,678.6	171.42	459,165.6	2,678.6	0.0
Pleasant	1309	0.0	165.56	0.0	0.0	0.0
Saddle Lake West	1310	45,786.1	52.56	2,406,517.4	45,786.1	0.0
Saddle Lake North	1311	102,128.8	51.88	5,298,442.1	102,128.8	0.0
Ukalta East	1317	0.0	42.77	0.0	0.0	0.0
Craigend North	1320	11,633.1	151.51	1,762,531.0	11,633.1	0.0
Athabasca	1326	18,641.8	167.85	3,129,026.1	18,641.8	0.0
September Lake	1328	0.0	179.78	0.0	0.0	0.0
Meanook	1338	55,098.0	160.75	8,857,003.5	55,098.0	0.0
Baptiste South	1339	21,100.5	176.46	3,723,394.2	21,100.5	0.0
Sprucefield	1341	45,696.9	110.14	5,033,056.6	45,696.9	0.0
Tweedie	1343	42,241.3	177.80	7,510,503.1	42,241.3	0.0
Whitford	1345	30,480.7	27.54	839,438.5	30,480.7	0.0
Warspite	1353	2,994.6	75.88	227,230.2	2,994.6	0.0
Slawa North	1354	69,825.7	60.87	4,250,290.4	69,825.7	0.0
Mons Lake East	1355	6,681.6	86.48	577,824.8	6,681.6	0.0
Hylo South	1357	7,914.0	145.82	1,154,019.5	7,914.0	0.0
Athabasca East	1368	25,104.6	159.40	4,001,673.2	25,104.6	0.0
September Lake North	1370	6,123.2	189.73	1,161,754.7	6,123.2	0.0
Steele Lake	1371	73,962.8	178.15	13,176,472.8	73,962.8	0.0

Bens Lake Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Inland	To Viking
Calling Lake	1373	85,773.3	188.21	16,143,392.8	85,773.3	0.0
Rich Lake	1374	22,242.0	159.63	3,550,490.5	22,242.0	0.0
Fawcett River	1375	62,840.8	255.85	16,077,944.4	62,840.8	0.0
Lucky Lake	1386	3,497.1	100.68	352,088.0	3,497.1	0.0
Calling Lake South	1387	44,773.6	194.65	8,715,181.2	44,773.6	0.0
Fawcett River East	1389	19,105.1	264.94	5,061,647.9	19,105.1	0.0
Baptiste	1398	18,972.5	171.50	3,253,783.8	18,972.5	0.0
Rock Island Lake	1400	92,910.9	284.43	26,426,368.6	92,910.9	0.0
Island Lake	1407	15,426.7	201.93	3,115,113.5	15,426.7	0.0
St Lina	1414	65,028.6	102.83	6,686,890.9	65,028.6	0.0
St Lina North	1415	150,873.3	113.72	17,157,311.7	150,873.3	0.0
St Lina West	1416	27,978.1	90.64	2,535,935.0	27,978.1	0.0
Kinikinik	1420	0.0	128.03	0.0	0.0	0.0
Willingdon	1428	73,154.4	15.28	1,117,799.2	73,154.4	0.0
Slawa South	1429	0.0	29.20	0.0	0.0	0.0
Thorhild West	1430	17,626.1	114.28	2,014,310.7	17,626.1	0.0
Calling Lake West	1443	121,985.9	206.12	25,143,733.7	121,985.9	0.0
Cossack	1445	0.0	84.26	0.0	0.0	0.0
Clyde	1454	113,556.0	221.66	25,170,823.0	113,556.0	0.0
Glendon	1456	28,654.0	106.85	3,061,679.9	28,654.0	0.0
Mitsue South	1457	50,195.5	348.22	17,478,826.0	50,195.5	0.0
Vilna	1464	96,472.5	83.13	8,019,758.9	96,472.5	0.0
Edwand South	1467	30,397.5	65.03	1,976,749.4	30,397.5	0.0
Andrew	1469	10,275.3	36.13	371,246.6	10,275.3	0.0
Kent	1483	108,131.0	158.13	17,098,755.0	108,131.0	0.0
Moose Lake River	1484	95,735.9	112.67	10,786,563.9	95,735.9	0.0
Wolyn	1486	0.0	100.25	0.0	0.0	0.0
Spurfield	1487	38,747.3	288.21	11,167,165.6	38,747.3	0.0
Caslan	1491	7,527.5	121.35	913,462.1	7,527.5	0.0
Caslan East	1492	26,742.1	128.12	3,426,197.9	26,742.1	0.0
Venice	1493	0.0	135.07	0.0	0.0	0.0
Owlseye	1495	12,541.7	70.18	880,176.5	12,541.7	0.0
Barich	1497	2,477.6	90.48	224,173.2	2,477.6	0.0
Dakin	1501	0.0	175.10	0.0	0.0	0.0
Newbrook	1502	19,546.9	122.95	2,403,291.4	19,546.9	0.0
Goodridge	1504	15,788.8	95.55	1,508,619.8	15,788.8	0.0
Kehiwin	1517	0.0	131.85	0.0	0.0	0.0
St. Brides	1519	26,991.8	61.68	1,664,854.2	26,991.8	0.0
Donatville	1520	12,446.2	154.73	1,925,800.5	12,446.2	0.0
Smith	1521	34,894.8	284.77	9,936,957.3	34,894.8	0.0
Calling Lake East	1522	36,926.8	194.17	7,170,076.8	36,926.8	0.0
Helina	1523	34,925.8	189.71	6,625,773.5	34,925.8	0.0
Mills	1524	24,500.6	194.66	4,769,286.8	24,500.6	0.0
Hoole	1528	525,257.9	309.63	162,637,179.4	525,257.9	0.0
Stoney Creek	1565	88,872.6	72.90	6,478,812.5	88,872.6	0.0
Stoney Creek West	1566	67,841.7	65.90	4,470,768.0	67,841.7	0.0
Spear Lake	1580	20,461.9	164.04	3,356,570.1	20,461.9	0.0
Square Lake	1581	323.3	188.20	60,845.1	323.3	0.0
Long Lake	1584	0.0	107.05	0.0	0.0	0.0
Weasel Creek	1585	19,713.4	92.71	1,827,629.3	19,713.4	0.0
Overlea	1587	84,789.0	364.34	30,892,278.6	84,789.0	0.0

Bens Lake Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Inland	To Viking
Decrene	1599	0.0	277.41	0.0	0.0	0.0
Fort Kent	1602	100,064.4	144.39	14,448,298.7	100,064.4	0.0
Kikino	1608	59,347.9	118.05	7,006,019.6	59,347.9	0.0
Fawcett River West	1620	0.0	257.26	0.0	0.0	0.0
Conklin	1624	117,686.6	277.65	32,675,684.5	117,686.6	0.0
Long Lake West	1630	22,425.5	138.03	3,095,391.8	22,425.5	0.0
Foisy	1632	33,313.5	34.20	1,139,321.7	33,313.5	0.0
May Hill	1633	122,236.7	275.39	33,662,764.8	122,236.7	0.0
Conklin West	1634	207.2	285.90	59,238.3	207.2	0.0
Smith West	1637	31,179.8	284.78	8,879,508.2	31,179.8	0.0
White Earth Creek	1638	0.0	90.51	0.0	0.0	0.0
Decrene North	1646	56,269.8	269.79	15,181,254.4	56,269.8	0.0
Willow River	1652	104,192.7	295.04	30,741,222.6	104,192.7	0.0
Rock Island Lake South	1654	0.0	278.39	0.0	0.0	0.0
Figure Lake West	1655	0.0	107.87	0.0	0.0	0.0
Truman	1656	0.0	117.79	0.0	0.0	0.0
Bonnyville	1660	19,450.3	129.43	2,517,452.3	19,450.3	0.0
Marten Hills North	1672	53,970.7	272.56	14,710,308.0	53,970.7	0.0
Bellis South	1675	12,286.5	51.57	633,614.8	12,286.5	0.0
Calling Lake North	1676	40,931.7	205.48	8,410,645.7	40,931.7	0.0
Chump Lake	1679	4,684.1	124.33	582,374.2	4,684.1	0.0
Cherry Grove East	1680	22,637.1	179.09	4,054,078.2	22,637.1	0.0
Wiau Lake	1684	53,894.4	256.66	13,832,536.7	53,894.4	0.0
Ipiatik Lake	1685	69,784.3	256.66	17,910,838.4	69,784.3	0.0
Dropoff Creek	1689	11,876.6	289.39	3,436,969.3	11,876.6	0.0
Corner Lake	1691	0.0	148.37	0.0	0.0	0.0
Corrigal Lake	1697	332,771.0	194.23	64,634,111.3	332,771.0	0.0
Island Lake No. 2	1700	25,399.8	201.93	5,128,981.6	25,399.8	0.0
Boyle West	1703	26,999.8	126.53	3,416,284.7	26,999.8	0.0
Meadow Creek	1704	144,069.8	320.23	46,134,895.8	144,069.8	0.0
Meadow Creek West	1705	206,780.2	304.86	63,039,218.6	206,780.2	0.0
Meadow Creek East	1707	29,258.6	325.83	9,533,417.4	29,258.6	0.0
Pleasant West	1710	6,710.7	167.28	1,122,565.9	6,710.7	0.0
Conklin West #2	1711/3904	3,280.5	285.92	937,970.4	3,280.5	0.0
Conn Lake	1713	20,192.5	129.58	2,616,544.2	20,192.5	0.0
Piche Lake	1714	65,661.8	213.58	14,024,047.2	65,661.8	0.0
Elinor Lake	1715	46,140.0	189.70	8,752,896.4	46,140.0	0.0
Osborne Lake	1716	87,390.7	138.28	12,084,386.0	87,390.7	0.0
Lacorey	1718	43,814.3	137.31	6,016,141.5	43,814.3	0.0
Manatoken Lake	1719	18,008.3	126.99	2,286,874.0	18,008.3	0.0
Lac La Biche	1721	2,872.0	158.58	455,441.8	2,872.0	0.0
Weaver Lake	1723	18,105.9	303.75	5,499,594.7	18,105.9	0.0
Wabasca Lake	1724	19,662.5	322.06	6,332,524.4	19,662.5	0.0
Devenish	1732	0.0	266.87	0.0	0.0	0.0
Devenish West	1733	74,481.8	270.32	20,133,920.2	74,481.8	0.0
Devenish South	1734	37,296.7	250.83	9,355,094.0	37,296.7	0.0
Waddell Creek West	1736	118,641.8	316.41	37,539,807.9	118,641.8	0.0
Elinor Lake East	1742	3,278.5	189.52	621,341.3	3,278.5	0.0
Fawcett River North	1753	116,290.3	282.19	32,815,610.9	116,290.3	0.0
Willow River North	1759	68,374.0	295.76	20,222,499.4	68,374.0	0.0
Decrene East	1760	143,796.5	274.25	39,436,046.3	143,796.5	0.0

Bens Lake Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Inland	To Viking
Whiskey Jack Lake	1762	0.0	73.53	0.0	0.0	0.0
Corner Lake #2	1763	9,305.5	145.54	1,354,294.6	9,305.5	0.0
Figure Lake #2	1764	32,175.6	113.67	3,657,239.6	32,175.6	0.0
Mastin Lake	1769	24,087.2	153.76	3,703,647.9	24,087.2	0.0
Kikino North	1772	15,732.3	115.11	1,810,897.9	15,732.3	0.0
Crow Lake South	1773	78,189.8	286.61	22,409,744.0	78,189.8	0.0
Wiau Lake South	1777	38,091.4	257.66	9,814,477.8	38,091.4	0.0
Weaver Lake South	1780	2,724.1	290.09	790,234.2	2,724.1	0.0
Moss Lake	1781	50,120.2	145.09	7,272,040.1	50,120.2	0.0
Goodridge North	1783	50,850.0	100.95	5,133,307.5	50,850.0	0.0
Muskwa River	1785	141,654.9	340.65	48,254,033.4	141,654.9	0.0
Agnes Lake	1789	0.0	277.15	0.0	0.0	0.0
Florida Lake	1791	0.0	354.33	0.0	0.0	0.0
Pitlo	1797	74,855.3	228.41	17,097,848.8	74,855.3	0.0
Moss Lake North	1802	36,692.0	134.43	4,932,505.6	36,692.0	0.0
Clyde North	1803	31,603.3	252.94	7,993,738.7	31,603.3	0.0
Orloff Lake	1814	22,491.7	251.04	5,646,271.4	22,491.7	0.0
Pastecho River	2260	91,716.3	330.33	30,296,370.2	91,716.3	0.0
McMillan Lake	2710	79,029.1	320.68	25,343,051.8	79,029.1	0.0
Orloff Lake South	1819	0.0	239.96	0.0	0.0	0.0
Rock Island Lake South #2	1820	38,898.4	278.47	10,831,920.8	38,898.4	0.0
Wandering River	1822	40,339.2	241.00	9,721,868.2	40,339.2	0.0
Moose Portage	1823	19,351.5	218.18	4,222,110.3	19,351.5	0.0
Granor	5005	162,061.9	332.87	53,945,058.5	162,061.9	0.0
Boivin	5012	35,949.1	313.38	11,265,657.1	35,949.1	0.0
Algar Lake	5026	101,685.3	350.68	35,658,797.6	101,685.3	0.0
Algar Lake South	5081	0.0	344.34	0.0	0.0	0.0
		<u>13,009,041.2</u>		<u>3,334,957,519.0</u>	<u>13,009,041.2</u>	<u>0.0</u>
Average Kilometres of Haul				256.36		

Ferd Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Elk River	To Carrot Creek
From Peace River Interchange	----	522,155.9	492.89	257,367,404.2	417,724.7	104,431.2
From Gold Creek Interchange	----	6,801,212.1	403.97	2,747,512,897.2	5,440,969.6	1,360,242.4
From Moosehorn River	----	78,645.1	151.18	11,889,487.6	62,916.1	15,729.0
From Outlet Creek	----	397,164.4	97.57	38,751,093.4	317,731.5	79,432.9
Crooked Lake South	1701	55,967.9	79.00	4,421,464.1	44,774.3	11,193.6
Windfall	2012	301,923.8	31.80	9,601,176.8	241,539.0	60,384.8
Carson Creek	2018	158,452.1	68.45	10,846,046.2	126,761.7	31,690.4
Kaybob South	2020	301,805.5	57.76	17,432,285.7	241,444.4	60,361.1
Bigstone	2023	0.0	67.76	0.0	0.0	0.0
Simonette	2028	120,778.2	115.08	13,899,155.3	96,622.6	24,155.6
Waskahigan	2029	780.8	94.43	73,730.9	624.6	156.2
Sturgeon Lake South	2030	86,706.3	156.17	13,540,922.9	69,365.0	17,341.3
Simonette North	2033	8,390.0	115.18	966,360.2	6,712.0	1,678.0
Virginia Hills	2034	30,850.4	110.24	3,400,948.1	24,680.3	6,170.1
Kaybob South 3	2035	1,343,087.0	21.67	29,104,695.3	1,074,469.6	268,617.4
Belloy	2043	148,626.5	257.22	38,229,708.3	118,901.2	29,725.3
Dunvegan	2044	1,131,782.2	310.58	351,508,915.7	905,425.8	226,356.4
Bigstone East	2048	0.0	52.42	0.0	0.0	0.0
Ante Creek B	2051	0.0	118.79	0.0	0.0	0.0
Sturgeon Lake North	2058	0.0	176.73	0.0	0.0	0.0
Waskahigan North	2062	0.0	107.41	0.0	0.0	0.0
Bigstone East B	2067	0.0	50.52	0.0	0.0	0.0
Clark Lake	2070	81,813.1	31.67	2,591,020.9	65,450.5	16,362.6
Virginia Hills East	2073	576.3	87.66	50,518.5	461.0	115.3
Whitelaw	2075	50,767.5	286.65	14,552,503.9	40,614.0	10,153.5
Tangent	2082	18,395.2	283.55	5,215,959.0	14,716.2	3,679.0
Dunvegan West	2084	134,220.2	327.04	43,895,374.2	107,376.2	26,844.0
Pass Creek	2089	77,197.6	36.81	2,841,643.7	61,758.1	15,439.5
Whitelaw West	2090	0.0	285.43	0.0	0.0	0.0
Tony Creek	2092	0.0	60.48	0.0	0.0	0.0
Waskahigan East	2096	0.0	109.74	0.0	0.0	0.0
Tony Creek North	2116	68,477.0	88.59	6,066,377.4	54,781.6	13,695.4
Tangent B	2121	144,823.9	283.65	41,079,299.2	115,859.1	28,964.8
Chicadee Creek	2122	0.0	53.60	0.0	0.0	0.0
Watino	2123	102,509.7	250.55	25,683,805.3	82,007.8	20,501.9
Ante Creek South	2136	23,653.8	118.79	2,809,834.9	18,923.0	4,730.8
Roxanna	2141	0.0	324.68	0.0	0.0	0.0
Crooked Lake	2162	0.0	86.09	0.0	0.0	0.0
Pass Creek West	2168	32,561.1	40.48	1,318,073.3	26,048.9	6,512.2
Benbow South	2177	93,903.3	20.12	1,889,334.4	75,122.6	18,780.7
Carson Creek East	2188	40,327.8	77.79	3,137,099.6	32,262.2	8,065.6
Deep Valley Creek East	2194/388	60,703.1	115.18	6,991,783.1	48,562.5	12,140.6
Boulder Creek	2220	64,258.6	220.70	14,181,873.0	51,406.9	12,851.7
Tangent East	2208	32,974.6	269.91	8,900,174.3	26,379.7	6,594.9
Birch Hills	2230	0.0	294.60	0.0	0.0	0.0
Bigstone East	2231	13,313.2	54.12	720,510.4	10,650.6	2,662.6
Bigstone East B	2232	12,242.4	54.10	662,313.8	9,793.9	2,448.5
Bluesky	2245	0.0	295.02	0.0	0.0	0.0
Snipe Lake	2253	50,506.9	189.40	9,565,905.8	40,405.5	10,101.4
Sweat House Creek	2270	0.0	189.40	0.0	0.0	0.0
Gilmore Lake	2722	36,695.8	187.53	6,881,563.4	29,356.6	7,339.2

Ferd Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Elk River	To Carrot Creek
Dunvegan West #2	2716	18,366.5	327.04	6,006,580.2	14,693.2	3,673.3
Crooked Lake West	2724	219,810.5	79.96	17,576,487.2	175,848.4	43,962.1
Mountain Lake	2732	12,051.9	223.74	2,696,443.9	9,641.5	2,410.4
Codesa	2735	92,573.8	264.79	24,512,709.1	74,059.0	18,514.8
Calais	2738	109,422.8	158.52	17,345,921.1	87,538.2	21,884.6
		<u>13,080,474.8</u>		<u>3,815,719,401.4</u>	<u>10,464,379.8</u>	<u>2,616,095.0</u>
Average Kilometres of Haul				291.71		

Gold Creek Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Gold Creek	To Ferd
From Peace River Interchange	----	4,699,403.2	340.32	1,599,318,693.5	234,970.2	4,464,433.0
Culp	1702	0.0	128.16	0.0	0.0	0.0
Culp North	1807	104,950.1	140.43	14,738,037.6	5,247.5	99,702.6
Teepee Creek	2076	67,687.7	173.15	11,720,125.3	3,384.4	64,303.3
Eaglesham	2097	24,654.1	77.64	1,914,144.3	1,232.7	23,421.4
Belloy West	2105	112,728.8	133.27	15,023,818.1	5,636.4	107,092.4
Blueberry Hill	2119	17,915.8	205.97	3,690,027.7	895.8	17,020.0
Woking	2124	0.0	163.45	0.0	0.0	0.0
Ksituan River	2134	12,028.3	176.54	2,123,476.1	601.4	11,426.9
Donnelly	2139	35,041.9	136.07	4,768,116.3	1,752.1	33,289.8
Heart River	2140	36,210.5	167.77	6,075,108.0	1,810.5	34,400.0
Baytree	2143	7,022.1	219.99	1,544,784.8	351.1	6,671.0
McLennan	2144	12,140.2	151.45	1,838,596.9	607.0	11,533.2
Kakut Creek	2154	0.0	153.98	0.0	0.0	0.0
Henderson Creek	2164	10.8	220.84	2,385.1	0.5	10.3
Sneddon Creek	2165	34,128.4	226.56	7,732,062.0	1,706.4	32,422.0
Henderson Creek East	2167	0.0	223.23	0.0	0.0	0.0
Howard Creek East	2169	15,347.3	160.12	2,457,409.7	767.4	14,579.9
Silverwood	2170	25,280.5	164.56	4,160,159.1	1,264.0	24,016.5
Henderson Creek S.E.	2174	48,575.0	222.81	10,822,947.2	2,428.8	46,146.3
Big Prairie	2175	124,946.1	162.56	20,311,612.9	6,247.3	118,698.8
Doe Creek	2197	8,617.4	238.65	2,056,568.4	430.9	8,186.5
Webster	2207	35,386.5	167.06	5,911,668.7	1,769.3	33,617.2
Debolt	2233	21,316.1	83.45	1,778,807.2	1,065.8	20,250.3
Ksituan River East	2234	0.0	153.57	0.0	0.0	0.0
Silverwood North	2239	28,698.8	177.24	5,086,575.3	1,434.9	27,263.9
Pete Lake South	2247	14.7	66.04	970.8	0.7	14.0
Webster North	2248	5,703.0	177.05	1,009,727.6	285.2	5,417.9
Frakes Flats	2268	274,081.1	19.83	5,434,480.1	13,704.1	260,377.0
Frakes Flats East	2269	0.0	14.13	0.0	0.0	0.0
Bezanson	2271	0.0	74.30	0.0	0.0	0.0
Mirage	2273	6,733.2	74.30	500,303.7	336.7	6,396.5
Blueberry Hill East	2274	0.0	193.83	0.0	0.0	0.0
Pete Lake	2280	299,288.7	78.13	23,384,024.7	14,964.4	284,324.3
Ballater	2293	0.0	135.06	0.0	0.0	0.0
Winagami Lake	2707	156,150.2	153.67	23,995,601.2	7,807.5	148,342.7
Doe Creek South	2712	373,508.3	242.01	90,391,623.2	18,675.4	354,832.9
Manir	2720	324,931.6	144.83	47,059,843.6	16,246.6	308,685.0
Culp #2	2718	12,422.6	140.46	1,744,878.4	621.1	11,801.5
Dreau	2719	419.3	140.53	58,922.1	21.0	398.3
Crowell	2731	189,878.9	161.98	30,757,153.9	9,493.9	180,385.0
Lalby Creek	2737	23,905.8	140.89	3,367,992.5	1,195.3	22,710.5
Cattail Lake	2727	13,867.3	51.90	719,699.0	693.4	13,173.9
Ballater #2	2744	6,176.3	135.06	834,171.1	308.8	5,867.5
Heart River Sales	3100	0.0	167.77	0.0	0.0	0.0
		<u>7,159,170.6</u>		<u>1,952,334,515.8</u>	<u>357,958.5</u>	<u>6,801,212.1</u>

Average Kilometres of Haul

272.70

James River Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Cochrane	To Carseland/Atusis Cr
From Elk River	----	39,792,691.2	584.69	23,266,259,939.0	11,791,720.5	28,000,970.8
From Cynthia	----	5,627,788.4	355.66	2,001,563,170.9	1,667,675.8	3,960,112.6
Brazeau	1083	259,836.1	142.26	36,964,283.6	76,996.9	182,839.2
Brazeau South	1096	594,743.8	117.08	69,630,225.1	176,239.7	418,504.1
Ferrier North	1101	747,009.9	82.33	61,501,325.1	221,360.5	525,649.4
Ferrier South B	1111	101,071.2	79.17	8,001,806.9	29,950.3	71,120.9
Strachan	1115	1,372,532.5	45.52	62,477,679.4	406,720.9	965,811.6
Ricinus	1135	4,639,556.5	56.08	260,186,328.5	1,374,834.2	3,264,722.3
Phoenix	1153	0.0	66.46	0.0	0.0	0.0
Ricinus South	1372	481,994.8	25.09	12,093,249.5	142,828.9	339,165.9
Horburg	1411	6,215.0	61.82	384,211.3	1,841.7	4,373.3
Ricinus West	1437	1,483,823.5	38.67	57,379,454.7	439,699.6	1,044,123.9
Grace Creek	1448	144,484.9	85.43	12,343,345.0	42,815.0	101,669.9
Brazeau West	1596	0.0	149.41	0.0	0.0	0.0
Crammond	1686	1,264,983.0	2.00	2,529,966.0	374,850.9	890,132.1
Tawadina Creek	1837	54,327.7	63.73	3,462,141.3	16,098.9	38,228.8
Minnehik Buck Lake	2010	482,196.5	127.33	61,398,080.3	142,888.7	339,307.8
Willesden Green	2014	98,761.8	73.87	7,295,534.2	29,266.0	69,495.8
Ferrier	2016	59,736.7	57.95	3,461,741.8	17,701.7	42,035.0
Wilson Creek	2019	289,282.9	114.90	33,238,605.2	85,722.9	203,560.0
Caroline	2021	0.0	3.07	0.0	0.0	0.0
Brazeau East (**)	2024	633,631.5	142.24	90,129,011.8	187,763.3	445,868.2
Gilby West	2037	412,684.6	101.15	41,743,047.3	122,290.3	290,394.3
Leafland	2040	34,532.7	76.84	2,653,492.7	10,233.0	24,299.7
Garrington Altana	2091	0.0	2.63	0.0	0.0	0.0
Brazeau North	2106	0.0	156.25	0.0	0.0	0.0
Alder Flats	2109	0.0	115.46	0.0	0.0	0.0
Willesden Green North	2112	253,744.0	84.00	21,314,496.0	75,191.7	178,552.3
Caroline North	2113	255,316.0	4.46	1,138,709.4	75,657.5	179,658.5
Ferrier South A	2115	115,397.5	58.05	6,698,824.9	34,195.6	81,201.9
Withrow	2147	40,599.8	91.12	3,699,453.8	12,030.9	28,568.9
Minnehik Buck Lake B	2149	17,441.6	127.43	2,222,583.1	5,168.4	12,273.2
Bingley	2150	3,154.0	62.32	196,557.3	934.6	2,219.4
Lasthill Creek	2151	2,558.2	64.07	163,903.9	758.1	1,800.1
Codner	2152	193,257.5	57.44	11,100,710.8	57,267.8	135,989.7
Wilson Creek Southeast	2171	53,121.7	113.72	6,040,999.7	15,741.5	37,380.2
Leedale	2179	94,814.8	83.84	7,949,272.8	28,096.4	66,718.4
Butte	2181	16,020.8	27.25	436,566.8	4,747.4	11,273.4
Alder Flats South	2200	321,673.6	107.83	34,686,064.3	95,321.2	226,352.4
Sand Creek	2281	517,618.3	140.97	72,968,651.8	153,385.2	364,233.1
Alder Flats #2	2291	237,566.8	115.44	27,424,711.4	70,397.9	167,168.9
Wilson Creek South Sales	3069	0.0	108.61	0.0	0.0	0.0
		<u>60,704,169.8</u>		<u>26,290,738,145.6</u>	<u>17,988,393.8</u>	<u>42,715,776.0</u>

Average Kilometres of Haul

433.10

(**) Sum of 1947 and 2024.

James River Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Cochrane	To Carseland/Atusis Cr
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APPENDIX 3.3

James River Available Volume Calculations

Station	Volume		
Gas available at James River		60,704,169.8	A
Downstream Deliveries			
Cochrane	2360	1,386,709.9	
ABC	2001	21,764,919.0	
Sundre Sales	3053	5,190.4	
Priddis	3879	26,892.4	
Saratoga	3050	5,113.6	
Alison Creek	3059	6,146.7	
Coleman	3052	4,447.8	
East Calgary B	3062	41,103.7	
Alberta/Montana	2002	98,085.4	
Total Deliveries Downstream of James River		23,338,608.9	B
Downstream Receipts (from both Cochrane and ABC Border)			
Jackson Creek	2146	192,969.4	
Burnt Timber	2032	965,047.6	
Water Valley	2160	13,206.3	
Wildcat Hills	2005	1,013,448.2	
Jumping Pound West	2036	220,611.1	
Alberta Montana	2006/386	96,599.6	
Crossfield	2008	299,865.3	
Crossfield West	2017	7,928.8	
Fish Creek	2161	2,326.7	
Quirk Creek	2026	583,453.8	
Coleman	2003	259,973.2	
Waterton	1945	1,057,813.6	
Hartell	2183	0.0	
East Calgary	2007	607,001.3	
Priddis Sales	3073/3879	18,557.3	
Nelson Creek	2741	0.0	
Callum Creek	2743	11,412.9	
Total Receipts Downstream of James River		5,350,215.1	C
Net Deliveries Downstream of James River		17,988,393.8	D = B - C
Available for Carseland/Atusis Creek from James		42,715,776.0	A - D
Percentage Available to Carseland/Atusis Creek		70.4%	
Percentage Available to Cochrane		29.6%	

Kirby Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Leming	To Bens Lake
Kirby	1446	461,710.6	6.93	3,199,654.5	0.0	461,710.6
Kirby North	1449	193,522.7	5.46	1,056,633.9	0.0	193,522.7
Graham	1482	86,046.7	70.61	6,075,929.6	0.0	86,046.7
Chard	1485	1,724.5	64.54	111,299.2	0.0	1,724.5
Winefred River	1577	47,948.5	33.56	1,609,151.7	0.0	47,948.5
Bohn Lake	1590	74,201.6	69.36	5,146,623.0	0.0	74,201.6
Kettle River	1627	110,204.4	79.82	8,796,515.2	0.0	110,204.4
Winefred River North	1628	19,649.5	53.26	1,046,532.4	0.0	19,649.5
Grist Lake	1647	427,089.0	7.90	3,373,576.0	0.0	427,089.0
Cheecham	1666	82,049.0	110.93	9,101,695.6	0.0	82,049.0
Cottonwood Creek	1667	45,543.3	99.84	4,547,043.1	0.0	45,543.3
Kettle River North	1668	0.0	98.92	0.0	0.0	0.0
Waddell Creek	1669	29,351.2	62.84	1,844,429.4	0.0	29,351.2
Winefred River West	1670	27,056.4	53.39	1,444,541.2	0.0	27,056.4
Winefred River South	1671	69,446.5	13.32	925,027.4	0.0	69,446.5
Sunday Creek	1674	24,242.6	49.90	1,209,705.7	0.0	24,242.6
Kinosis	1682	73,937.2	111.93	8,275,790.8	0.0	73,937.2
Sunday Creek South	1696	104,365.2	36.55	3,814,548.1	0.0	104,365.2
Christina Lake	1712	16,970.5	22.99	390,151.8	0.0	16,970.5
Kirby North #2	1727	333,996.2	5.51	1,840,319.1	0.0	333,996.2
Nisbit Lake	1776	80,496.3	16.89	1,359,582.5	0.0	80,496.3
Cheecham West	1784	0.0	108.70	0.0	0.0	0.0
		<u>2,309,551.9</u>		<u>65,168,750.0</u>	<u>0.0</u>	<u>2,309,551.9</u>
Average Kilometres of Haul				28.22		

Marten Hills Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Elk River	To Judy Creek
Akuinu River	1526	22,432.9	64.44	1,445,486.3	22,432.9	0.0
Chisholm Mills West	1609	1,601.3	70.48	112,856.4	1,601.3	0.0
Akuinu River West	1681	31,708.7	42.18	1,337,568.1	31,708.7	0.0
Florence Creek	1752	0.0	57.21	0.0	0.0	0.0
Delorme Lake	1786	0.0	74.94	0.0	0.0	0.0
Akuinu River West #2	1800	22,044.2	42.18	929,736.2	22,044.2	0.0
Doris Creek North	2254	0.0	16.28	0.0	0.0	0.0
Doris Creek South	2297	41,931.7	10.81	453,239.7	41,931.7	0.0
		<u>119,718.8</u>		<u>4,278,886.8</u>	<u>119,718.8</u>	<u>0.0</u>
Average Kilometres of Haul				35.74		

In 2002 all receipt volumes upstream of Slave Lake C/S and Paul Lake C/S flowed east to Bens Lake.

Peace River Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Gold Creek	To Ferd
Osland lake	1812	0.0	223.33	0.0	0.0	0.0
Hotchkiss	2047	45,204.1	94.39	4,266,815.0	40,683.7	4,520.4
Whitemud River	2050	11,465.3	43.21	495,415.6	10,318.8	1,146.5
Keg River	2053	31,255.3	178.92	5,592,198.3	28,129.8	3,125.5
Hotchkiss North	2054	77,675.3	98.95	7,685,970.9	69,907.8	7,767.5
Whitemud East	2055	13,900.0	34.66	481,774.0	12,510.0	1,390.0
Whitemud West	2056	2,922.2	43.31	126,560.5	2,630.0	292.2
Worsley East	2057	18,049.9	64.18	1,158,442.6	16,244.9	1,805.0
Hines Creek	2059	119,992.4	44.36	5,322,862.9	107,993.2	11,999.2
Zama Lake	2060	118,950.3	312.42	37,162,452.7	107,055.3	11,895.0
Clear Hills	2063	81,581.3	21.99	1,793,972.8	73,423.2	8,158.1
Haig River East	2064	35,850.4	207.73	7,447,203.6	32,265.4	3,585.0
Hotchkiss East	2065	12,472.8	91.78	1,144,753.6	11,225.5	1,247.3
Basset Lake West	2066	218,169.0	260.24	56,776,300.6	196,352.1	21,816.9
Keg River East	2068	17,714.1	185.45	3,285,079.8	15,942.7	1,771.4
Hotchkiss North B	2069	0.0	98.94	0.0	0.0	0.0
Hotchkiss Northeast	2072	0.0	109.43	0.0	0.0	0.0
Basset Lake South	2085	35,736.9	218.84	7,820,663.2	32,163.2	3,573.7
Haig River	2086	33,725.8	216.05	7,286,459.1	30,353.2	3,372.6
Paddle Prairie	2093	254,671.4	228.58	58,212,788.6	229,204.3	25,467.1
Hotchkiss Northeast B	2094	61,103.0	109.53	6,692,611.6	54,992.7	6,110.3
Hotchkiss Northeast C	2095	31,127.2	109.53	3,409,362.2	28,014.5	3,112.7
Paddle Prairie South	2098	76,177.7	207.81	15,830,487.8	68,559.9	7,617.8
Chinchaga	2108	487,809.0	131.44	64,117,615.0	439,028.1	48,780.9
Dixonville North	2110	29,910.1	27.80	831,500.8	26,919.1	2,991.0
Boyer	2114	0.0	197.54	0.0	0.0	0.0
Botha	2117	150,231.4	125.31	18,825,496.7	135,208.3	15,023.1
Hines Creek B	2125	0.0	44.46	0.0	0.0	0.0
Hay River	2126	43,817.9	283.35	12,415,802.0	39,436.1	4,381.8
Haig River North	2127	212,494.9	222.69	47,320,489.3	191,245.4	21,249.5
Lovet Creek	2128	36,940.5	102.78	3,796,744.6	33,246.5	3,694.1
Warrensville	2133	16,623.6	9.05	150,443.6	14,961.2	1,662.4
Sloat Creek	2137	958,707.7	169.29	162,299,626.5	862,836.9	95,870.8
Boyer East	2138	29,771.5	202.91	6,040,935.1	26,794.4	2,977.2
Haro River North	2145	55,050.7	212.03	11,672,399.9	49,545.6	5,505.1
Rambling Creek	2148	21,554.8	87.59	1,887,984.9	19,399.3	2,155.5
Rainbow Lake	2159	0.0	273.46	0.0	0.0	0.0
Ray Lake West	2166	27,242.5	74.18	2,020,848.7	24,518.3	2,724.3
Botha East	2182	125,031.5	110.94	13,870,994.6	112,528.4	12,503.2
Notikewan River	2192	47,119.7	88.01	4,147,004.8	42,407.7	4,712.0
Ray Lake South	2193	88,783.4	84.18	7,473,786.6	79,905.1	8,878.3
Rainbow Lake South	2201	112,913.6	273.56	30,888,644.4	101,622.2	11,291.4
Ole Lake	2202	0.0	146.76	0.0	0.0	0.0
Dixonville North #2	2210	1,062.8	27.90	29,652.1	956.5	106.3
Rambling Creek E.	2213	14,269.5	69.65	993,870.7	12,842.6	1,427.0
Keg River North	2216	32,353.3	196.18	6,347,070.4	29,118.0	3,235.3
Botha West	2217	59,325.3	156.52	9,285,596.0	53,392.8	5,932.5
Notikewin River North	2218	81,957.4	101.89	8,350,639.5	73,761.7	8,195.7
Hines Creek West	2219	9,478.3	55.67	527,657.0	8,530.5	947.8
Cadotte River	2221	200,810.0	123.66	24,832,967.8	180,729.0	20,081.0
Last Lake	2223	3,930.0	12.00	47,160.0	3,537.0	393.0

Peace River Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Gold Creek	To Ferd
Cranberry Lake	2225	0.0	77.53	0.0	0.0	0.0
Slims Lake	2235	17,216.7	105.88	1,822,887.0	15,495.0	1,721.7
Muskeg Creek	2236	209,922.2	276.69	58,083,793.4	188,930.0	20,992.2
Cadotte River South	2246	0.0	145.42	0.0	0.0	0.0
Lennard Creek	2249	44,075.3	265.37	11,696,042.0	39,667.8	4,407.5
Clear Hills North	2250	977.4	34.89	34,101.5	879.7	97.7
Lovet Creek West	2255	0.0	130.87	0.0	0.0	0.0
Chinchaga West	2266	165,540.6	233.80	38,703,557.8	148,986.5	16,554.1
Hay River South	2278	144,452.5	267.36	38,620,531.5	130,007.3	14,445.3
Running Lake	2282	0.0	84.67	0.0	0.0	0.0
McLean Creek	2706	169,015.7	131.40	22,208,324.9	152,114.1	16,901.6
Assumption	2708	39,572.2	274.97	10,881,326.1	35,615.0	3,957.2
Brownvale North	2721	9,284.2	0.06	566.3	8,355.8	928.4
Faria	2729	7,494.7	193.65	1,451,318.7	6,745.2	749.5
Assumption #2	2734	111,678.4	275.01	30,713,011.8	100,510.6	11,167.8
Stowe Creek	2740	57,473.7	78.93	4,536,169.2	51,726.3	5,747.4
Kemp River	2748	34,552.6	180.82	6,247,939.3	31,097.3	3,455.3
Cranberry Lake #2	2749	8,476.4	77.45	656,463.3	7,628.8	847.6
Boundary Lake South	3001	462.0	146.66	67,756.9	415.8	46.2
Shell Worsley	3004	0.0	84.08	0.0	0.0	0.0
Clear River South	3007	0.0	112.45	0.0	0.0	0.0
Cleardale	3008	1,316.9	130.31	171,598.7	1,185.2	131.7
Neptune	3009	36,811.4	146.63	5,397,802.8	33,130.3	3,681.1
Fire Creek Sales	3077	0.0	274.54	0.0	0.0	0.0
Rainbow Lake Sales	3083	0.0	273.47	0.0	0.0	0.0
Virgo Sales	3103	0.0	297.80	0.0	0.0	0.0
Trout River Sales	3081	0.0	1.10	0.0	0.0	0.0
Whitemud West	3917	18,302.4	43.31	792,676.9	16,472.2	1,830.2
Running Lake Interconnection	3912	0.0	84.68	0.0	0.0	0.0
		<u>5,221,559.1</u>		<u>902,252,974.5</u>	<u>4,699,403.2</u>	<u>522,155.9</u>

Average Kilometres of Haul

172.79

Vandersteene Lake Interchange

Receipt Station	Station Number	Available Volume	Distance (km)	Volume-Distance	To Bens Lake	To Mildred Lake
Vandersteene Lake	1801	57,790.7	6.35	367,202.1	11,558.1	46,232.6
Simon Lakes	1806	64,435.5	249.54	16,079,041.4	12,887.1	51,548.4
Wolverine River	2214	88,271.6	278.85	24,614,623.9	17,654.3	70,617.3
Bison Lake	2256	18,218.9	255.28	4,650,977.3	3,643.8	14,575.1
Russell Creek	2261	22,766.4	312.03	7,103,868.1	4,553.3	18,213.1
Hunt Creek	2277	352,312.1	116.78	41,142,654.7	70,462.4	281,849.7
Lafond	2287	15,683.5	90.67	1,422,007.3	3,136.7	12,546.8
Kidney Lake	2288	59,194.7	52.86	3,129,209.4	11,838.9	47,355.8
Darling Creek	2289	149,872.9	113.85	17,062,879.8	29,974.6	119,898.3
God's Lake	2290	0.0	39.23	0.0	-	-
Chester Creek	2705	84,887.2	245.65	20,852,880.2	16,977.4	67,909.8
Rossbear Lake	2725	27,240.6	290.06	7,901,381.2	5,448.1	21,792.5
Lafond East	2733	15,762.6	78.50	1,237,301.0	3,152.5	12,610.1
Keppler Creek	2739	29,720.6	224.18	6,662,883.0	5,944.1	23,776.5
Hunt Creek #2	2751	33,896.0	116.69	3,955,324.2	6,779.2	27,116.8
		<u>1,020,053.3</u>		<u>156,182,233.7</u>	<u>204,010.7</u>	<u>816,042.6</u>
Average Km of Haul				153.11		

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Bindloss South	1001	31,488.0
Bindloss North #1	1002	38,207.7
Provost North	1003	152,234.0
Cessford Wardlow	1004	26,166.3
Oyen	1007	48,622.8
Sibbald	1008	-
Atlee-Buffalo	1009	108,840.0
Princess-Denhardt	1010	37,817.9
Cessford West	1012	388,187.1
Provost South	1013	47,336.9
Countess Makepeace	1015	525,136.7
Hussar-Chancellor	1016	218,398.0
Med Hat North #1	1017	35,346.7
Med Hat South #1	1018	21,796.3
Nevis South	1019	438,470.8
Nevis North	1020	78,573.7
Wayne North	1021	169,075.0
Princess-Ildesleigh	1022	30,154.1
Sedalia South	1023	11,140.3
Enchant	1024	183,912.0
Cessford East	1025	130,421.3
Cessford-Burfield West	1027	48,094.5
Countess	1028	134,669.4
Three Hills Creek	1029	127,909.0
Rimbey	1033	-
Chigwell	1034	15,071.1
Wood River	1035	64,491.3
Sedalia North	1036	73,228.9
Gilby #2	1037	318,510.1
Provost-Kessler	1038	135,453.4
Wayne-Dalum	1039	260,857.4
Chigwell East	1040	37,260.5
Gilby North #1	1041	145,714.5
Med Hat South #2	1043	164,175.6
Provost West	1045	41,672.1
Wimborne	1046	117,943.5
Bindloss North #3	1048	-
Wildunn Creek Burfield	1049	-
Gilby North #3	1050	979.3
Olds	1053	311,784.4
Sylvan Lake	1054	241,904.7
Sylvan Lake West	1055	420,386.6
Verger	1056	113,367.2
Retlaw	1057	103,887.4
Oyen North	1058	47,825.6
Cessford-Burfield #2	1060	21,715.8
Verger South	1062	-
Edson	1064	917,394.9
South Elkton	1065	16,685.2
Twining North	1066	61,780.3
Lone Pine Creek	1069	88,973.9
Wintering Hills	1070	362,127.3
Ghostpine	1073	471,440.3
Equity	1074	106,716.9

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Abee	1337	54,267.5
Acadia East	1631	50,453.7
Acadia North	1613	43,045.8
Acadia Valley	1424	73,733.5
Aeco A	1351	-
Aeco H	1426	2.2
Aeco I	1473	-
Agnes Lake	1789	-
Akuinu River	1526	22,432.9
Akuinu River West	1681	31,708.7
Akuinu River West	1800	22,044.2
Alberta Montana Border	3868	64,399.6
Alberta-BC Border	2001	23.8
Albright	1588	7,650.6
Alder Flats	2109	-
Alder Flats #2	2291	237,566.8
Alder Flats South	2200	321,673.6
Alderson	1075	511,130.0
Alderson North	1208	181,774.5
Alderson South	1103	129,246.0
Algar Lake	5026	101,685.3
Algar Lake South	5081	-
Andrew	1469	10,275.3
Ansell	1573	16,214.3
Ante Creek South	2136	23,653.8
Armena	1567	22,529.0
Armstrong Lake	1770	21,359.5
Assumption #2	2734	111,678.4
Asumption	2708	39,572.2
Athabasca	1326	18,641.8
Athabasca East	1368	25,104.6
Atlee-Buffalo	1009	108,840.0
Atlee-Buffalo East	1116	26,639.8
Atlee-Buffalo South	1098	21,128.3
Atmore	1297	250,732.9
Atmore B Sales Exchange	3858	19,855.2
Atmore C	1488	18,707.0
Atusis Creek East	1792	92,140.1
Badger East	1275	7,984.7
Badger North	1649	192,219.2
Baileys Bottom	1782	32,846.5
Ballater #2	2744	6,176.3
Bantry	1100	147,929.2
Bantry North	1122	12,365.1
Bantry Northeast	1296	148,797.7
Bantry Northwest	1181	162,708.5
Baptiste	1398	18,972.5
Baptiste South	1339	21,100.5
Barich	1497	2,477.6
Bashaw	1329	39,796.6
Bashaw B	1393	31,142.9
Bassano South	1330	474,475.0
Bassano South #2	1794	90,255.3
Basset Lake South	2085	35,736.9

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>	<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Alderson	1075	511,130.0	Basset Lake West	2066	218,169.0
Vulcan	1076	259,464.5	Battle Lake East	1754	14,894.0
Verger-Homestead	1077	19,469.8	Baxter Lake	1197	31,813.3
Sunnynook	1079	31,442.9	Baxter Lake B	1334	22,926.2
Brazeau	1083	259,836.1	Baxter Lake Northwest	1382	30,379.6
Gilby South Pacific	1084	178,769.6	Baxter Lake South	1231	8,766.4
Berry-Carolside	1085	42,796.8	Baxter Lake West	1198	7,373.4
Cessford West Gage	1086	17,687.4	Bay Tree	2143	7,022.1
Figure Lake	1087	2,493.0	Bear Canyon West	2222	73,486.3
Craigend	1088	19,318.2	Bear River	2132	31,977.1
Bellis	1089	59,424.7	Bear River West	2186	19,278.1
Mitsue	1090	148,543.2	Beauvallon	1459	-
Marten Hills	1091	553,800.6	Bellis	1089	59,424.7
Greencourt	1093	38,408.2	Bellis South	1675	12,286.5
Whitecourt	1094	172,986.2	Belloy	2043	148,626.5
Fiat Lake	1095	127,582.5	Belloy West	2105	112,728.8
Brazeau South	1096	594,743.8	Beltz Lake	1720	101,042.3
Marten Hills South	1097	154,584.3	Benalto West	1264	24,229.5
Atlee-Buffalo South	1098	21,128.3	Benbow South	2177	93,903.3
Jenner West	1099	195,582.5	Bentley	1261	-
Bantry	1100	147,929.2	Benton	1175	-
Ferrier North	1101	747,009.9	Benton West	1274	48,899.4
Provost-Brownfield	1102	48,072.2	Berry Creek East	1136	5,701.4
Alderson South	1103	129,246.0	Berry Creek South	1604	61,296.2
Wintering Hills East	1104	86,040.4	Berry-Carolside	1085	42,796.8
Rainier	1106	200,884.4	Big Bend	1157	151,297.0
Wayne-Rosebud	1107	47,704.0	Big Bend East	1225	20,857.4
Plain Lake	1110	137,075.7	Big Prairie	2175	124,946.1
Ferrier South B	1111	101,071.2	Bigknife Creek	1835	44,500.0
Craigend East	1112	58,453.3	Bigoray River	2176	39,815.6
Sedgewick	1114	54,276.2	Bigstone	2023	-
Strachan	1115	1,372,532.5	Bigstone East	2231	13,313.2
Atlee-Buffalo East	1116	26,639.8	Bigstone East B	2232	12,242.4
Warwick	1118	64,875.6	Bindloss North #1	1002	38,207.7
Ukalta	1120	23,759.1	Bindloss North #3	1048	-
Bantry North	1122	12,365.1	Bindloss South	1001	31,488.0
Oyen East	1124	-	Bindloss West	1474	38,844.1
Oyen Southeast	1126	1,035.6	Bingley	2150	3,154.0
Med Hat South #4	1128	63,567.8	Bison Lake	2256	18,218.9
Hamilton Lake	1129	-	Blanchet Lake North	1648	-
Stanmore	1131	118,975.1	Blood Indian Creek	1505	14,175.8
Lavoy	1132	133,332.6	Blood Indian Creek East	1616	26,840.2
Rockyford	1134	9,810.7	Bloor Lake	1779	127,768.5
Ricinus	1135	4,639,556.5	Blue Jay	1511	3,458.3
Berry Creek East	1136	5,701.4	Blue Rapids	2704	79,560.2
Lone Pine South	1139	379,170.0	Blueberry Hill	2119	17,915.8
Newell North	1140	6,486.9	Blueberry Hill East	2274	-
Huxley	1142	94,200.9	Bluesky	2245	-
Jenner East	1143	23,417.4	Bodo West	1242	79,663.4
Mikwan North	1144	57,479.0	Bohn Lake	1590	74,201.6
Cessford North	1145	20,245.6	Boivin Creek	5012	35,949.1
Mikwan	1146	118,203.5	Bolloque	1227	11,262.4
Donalda	1147	59,961.9	Bolloque #2	1778	48,923.0
Craigend South	1148	72,943.2	Bolloque South	1290	44,521.8

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In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Matzhiwin West	1150	119,835.2
Cessford Northeast	1152	3,408.7
Vale	1154	46,505.2
Stanmore South	1156	94,248.5
Big Bend	1157	151,297.0
Jarrow South	1159	32,903.1
Holden	1161	181,543.5
Killam	1162	67,420.0
Jarrow	1163	100,826.4
Ranfurly	1164	1,909.9
Ranfurly West	1165	198,144.3
Harmattan-Elkton	1166	712,542.5
Joffre	1167	28,054.0
Bruce	1168	111,601.5
Tilley	1169	259,604.3
Medicine Hat West	1172	29,343.8
Warwick South	1173	20,000.0
Benton	1175	-
Harmattan East	1178	-
Strome Holmberg	1179	172,000.4
Penhold	1180	16,291.7
Bantry Northwest	1181	162,708.5
Hanna	1182	32,845.0
Princess West	1183	93,495.4
Medicine Hat North Arco	1184	62,015.2
Dismal Creek	1185	377,858.8
Medicine Hat East	1186	61,090.6
Sylvan Lake East #1	1187	15,363.1
West Viking	1188	71,596.8
Ranfurly North	1189	70,296.1
Twining	1190	84,674.9
Sylvan Lake South	1191	195,242.5
Sullivan Lake	1193	59,535.1
Nipisi	1194	40,152.7
Chauvin	1196	22,041.8
Baxter Lake	1197	31,813.3
Baxter Lake West	1198	7,373.4
Wainwright South	1199	19,587.6
Irvine	1201	2,529.2
Verger-Millicent	1203	33,211.0
Bowmanton South	1204	147,357.1
Medicine Hat Northwest	1205	32,177.0
Lanfine	1206	87,590.0
Hudson	1207	178,543.5
Alderson North	1208	181,774.5
Redcliff	1209	166,579.2
Lake Newell East	1210	72,157.3
Provost Monitor	1211	23,977.5
Vale East	1212	233,967.9
Edward	1213	86,118.9
Medicine River A	1214	18,778.7
Bruce North	1215	19,333.3
Bowmanton	1216	206,689.1
Retlaw South	1218	316,675.7

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Bonar West	1401	26,272.1
Bonnie Glenn	1796	821,556.9
Bonnyville	1660	19,450.3
Bootis Hill	2709	735,782.6
Botha	2117	150,231.4
Botha East	2182	125,031.5
Botha West	2217	59,325.3
Boulder Creek	2220	64,258.6
Boundary Lake South	3001	462.0
Bowell South	1318	43,002.5
Bowmanton	1216	206,689.1
BOWMANTON EAST	1842	17,315.5
Bowmanton South	1204	147,357.1
Bowmanton West	1237	84,943.2
Boyer East	2138	29,771.5
Boyle West	1703	26,999.8
Brazeau	1083	259,836.1
Brazeau East	2024	94,459.8
Brazeau North	2106	-
Brazeau South	1096	594,743.8
Brazeau/Brazeau East	1947	539,171.7
Briggs	1619	180,492.5
Brownvale North	2721	9,284.2
Bruce	1168	111,601.5
Bruce North	1215	19,333.3
Bullpound	1409	260,573.3
Bullpound South	1350	26,882.2
Bullshead	1555	32,243.5
Burnt River	2118	70,955.0
Burnt Timber	2032	965,047.6
Butte	2181	16,020.8
Byemore	1561	33,628.8
Cadogan	1725	81,650.4
Cadotte River	2221	200,810.0
Cadotte River South	2246	-
Calais	2738	109,422.8
Calling Lake	1373	85,773.3
Calling Lake East	1522	36,926.8
Calling Lake North	1676	40,931.7
Calling Lake South	1387	44,773.6
Calling Lake West	1443	121,985.9
Callum Creek	2743	11,412.9
Camrose Creek	1651	42,137.1
Canoe Lake	1805	1,144,844.6
Carbon Sales Ex	3866	160,409.4
Carbon West	1622	100,226.1
Caribou Lake	1692	573,364.4
Caroline North	2113	255,316.0
Carrot Creek Interconnection	3893	35,085.1
CARSELAND	1840	94,918.5
Carson Creek	2018	158,452.1
Carson Creek East	2188	40,327.8
Caslan	1491	7,527.5
Caslan East	1492	26,742.1

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In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Redcliff South	1219	5,989.2
Dunmore	1220	74,553.0
Chinook-Cereal	1221	29,064.1
Monitor South	1222	79,659.2
Tide Lake South	1223	195,332.0
Keho Lake	1224	5,049.4
Big Bend East	1225	20,857.4
Bolloque	1227	11,262.4
Cavendish South	1228	77,315.6
Majestic	1229	6,375.1
Hairy Hill	1230	78,830.9
Baxter Lake South	1231	8,766.4
Erskine North	1232	17,135.4
Wimborne North	1234	81,233.8
Dorothy	1236	176,926.7
Bowmantown West	1237	84,943.2
Hyllo	1241	21,361.2
Bodo West	1242	79,663.4
Gilby East	1243	1,934.6
Princess East	1246	187,409.3
Tweedie South	1256	22,760.6
Viking North	1257	6,861.8
Gregory West	1259	35,583.2
Bentley	1261	-
Schuler	1263	-
Benalto West	1264	24,229.5
Edgerton	1265	14,654.8
Edgerton West	1266	21,670.8
Gregory	1267	45,383.4
Tide Lake North	1268	33,705.0
Matzhiwin East	1270	98,535.1
Leo	1272	27,751.8
Maple Glen	1273	197,963.9
Benton West	1274	48,899.4
Badger East	1275	7,984.7
Nestow	1276	40,372.4
Iddesleigh South	1277	75,882.3
Patricia	1278	40,490.7
Dapp East	1279	3,602.4
Jarrow West	1281	40,050.2
Ralston	1282	87,675.3
Matzhiwin Northeast	1284	95,912.0
Countess West	1287	33,430.2
Matzhiwin West B	1288	-
Patricia West	1289	71,785.9
Bolloque South	1290	44,521.8
Hamlin	1291	16,004.5
Mons Lake	1292	760.2
Halkirk North	1293	-
Bantry Northeast	1296	148,797.7
Atmore	1297	250,732.9
Killam North	1298	127,829.9
Royal Park	1299	20,769.6
Fitzallan South	1300	10,465.6

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Cassils	1315	156,472.1
Castor	1397	56,685.5
Cattail Lake Meter Station	2727	13,867.3
Cavalier	1737	398,130.4
Cavendish South	1228	77,315.6
Cessford East	1025	130,421.3
Cessford North	1145	20,245.6
Cessford Northeast	1152	3,408.7
Cessford South	1312	16,342.2
Cessford Wardlow	1004	26,166.3
Cessford West	1012	388,187.1
Cessford West Gage	1086	17,687.4
Cessford-Burfield #2	1060	21,715.8
Cessford-Burfield West	1027	48,094.5
Chard	1485	1,724.5
Chauvin	1196	22,041.8
Cheecham	1666	82,049.0
Chelsea Creek	1708	134,612.0
Cherry Grove East	1680	22,637.1
Chester Creek	2705	84,887.2
Chickadee Creek	2122	-
Chickadee Creek	2286	82,685.6
Chigwell	1034	15,071.1
Chigwell East	1040	37,260.5
Chinchaga	2108	487,809.0
Chinchaga West	2266	165,540.6
Chinook-Cereal	1221	29,064.1
Chip Lake	5409	5,377.9
Chipewyan River	5023	-
Chisholm Mill West	1609	1,601.3
Chisholm Mills	1434	18,625.5
Choice	1322	20,485.0
Choice B	1323	25,458.7
Christina Lake	1712	16,970.5
Chump Lake	1679	4,684.1
Clandonald	1535	2,264.2
Clark Lake	2070	81,813.1
Clear Hills	2063	81,581.3
Clear Hills North	2250	977.4
Cleardale	3008	1,316.9
Clyde	1454	113,556.0
Clyde North	1803	31,603.3
Coaldale Interconnection	3883	454.4
Coaldale South A	5401	-
Coaldale South A & B	3884	178.2
Coaldale South B	5402	4,176.8
Coates Lake	1612	49,136.5
Codesa	2735	92,573.8
Codner	2152	193,257.5
Coleman	2003	259,973.2
Conklin	1624	117,686.6
Conklin West	1634	207.2
Conklin West #2	1711	1,417.3
Conklin West Interconnection	3904	1,863.2

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In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Flat Lake North	1302	12,187.0
Prosperity	1304	5,876.9
Richmond	1306	2,678.6
Paddle River	1307	89,518.3
Stettler South	1308	146,971.7
Saddle Lake West	1310	45,786.1
Saddle Lake North	1311	102,128.8
Cessford South	1312	16,342.2
Monarch North A	1313	5,030.6
Tillebrook	1314	81,424.7
Cassils	1315	156,472.1
Netook	1316	4,572.8
Ukalta East	1317	-
Bowell South	1318	43,002.5
Craigend North	1320	11,633.1
Westlock	1321	60,029.8
Choice	1322	20,485.0
Choice B	1323	25,458.7
Lawrence Lake	1324	11,016.0
Medicine Hat North F	1325	20,277.1
Athabasca	1326	18,641.8
Princess South	1327	89,822.9
September Lake	1328	-
Bashaw	1329	39,796.6
Bassano South	1330	474,475.0
Tide Lake East	1331	41,971.3
Baxter Lake B	1334	22,926.2
Three Hills Creek West	1335	19,758.8
Rochester	1336	25,597.9
Abee	1337	54,267.5
Meanook	1338	55,098.0
Baptiste South	1339	21,100.5
Wardlow East	1340	49,252.6
Sprucefield	1341	45,696.9
Youngstown	1342	56,953.3
Tweedie	1343	42,241.3
Whitford	1345	30,480.7
Redcliff West	1346	29,715.4
Viking East	1347	9,542.3
Tide Lake	1348	132,528.5
Bullpound South	1350	26,882.2
Aeco A	1351	-
Grainger	1352	87,370.5
Warspite	1353	2,994.6
Slawa North	1354	69,825.7
Mons Lake East	1355	6,681.6
Hylo South	1357	7,914.0
Gayford	1358	-
Equity B	1359	4,027.4
Meyer	1362	28,256.8
Meyer 'B'	1363	-
Gregory Northeast	1365	78,146.3
Louisiana Lake	1366	225,878.3
Athabasca East	1368	25,104.6

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Conn Lake	1713	20,192.5
Contracosta East	1635	34,112.9
Contracosta Lake	1614	26,078.0
Copton Creek	2736	157,536.8
Corner Lake	1691	-
Corner Lake #2	1763	9,305.5
Corrigall Lake	1697	332,771.0
Cottonwood Creek	1667	45,543.3
Countess	1028	134,669.4
Countess Makepeace	1015	525,136.7
Countess South	2296	213,695.9
Countess West	1287	33,430.2
Cousins West	1433	85,875.8
Craigend	1088	19,318.2
Craigend East	1112	58,453.3
Craigend North	1320	11,633.1
Craigend South	1148	72,943.2
Craigmyle	1541	42,999.4
Craigmyle East	1583	43,043.4
Crammond	1686	1,264,983.0
CRANBERRY LAKE #2	2749	8,476.4
Crooked Lake South	1701	55,967.9
Crooked Lake West	2724	219,810.5
Crossfield	2008	299,865.3
Crossfield East #2	1751	196,788.1
Crossfield East Interconnection	3897	287,543.5
Crossfield West	2017	7,928.8
Crow Lake South	1773	78,189.8
Crowell	2731	189,878.9
Culp #2	2718	12,422.6
Culp North	1807	104,950.1
Cutbank River	1489	602,475.3
Cynthia #2	2209	369,976.0
Dakin	1501	-
Dancing Lake	1738	16,233.7
Dapp East	1279	3,602.4
Darling Creek	2289	149,872.9
Daysland	1529	5,149.8
Deadrick	2285	-
Debolt	2233	21,316.1
Decrene East	1760	143,796.5
Decrene North	1646	56,269.8
Deep Valley Creek East	2194	31,704.2
Deep Valley Creek Interconnection	3888	28,998.9
Deep Valley Creek South	2244	107,994.6
Delia	1539	17,915.1
Demmitt	1476	384,426.8
Devenish South	1734	37,296.7
Devenish West	1733	74,481.8
Diamond City	1793	20,483.8
Dismal Creek	1185	377,858.8
Dixonville North	2110	29,910.1
Dixonville North #2	2210	1,062.8
Doe Creek	2197	8,617.4

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In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
September Lake North	1370	6,123.2
Steele Lake	1371	73,962.8
Ricinus South	1372	481,994.8
Calling Lake	1373	85,773.3
Rich Lake	1374	22,242.0
Fawcett River	1375	62,840.8
Forshee	1376	51,540.1
Thorhild	1377	26,717.6
Rainier South	1378	231,422.6
Matzhiwin South	1379	70,341.1
Rainier Southwest	1380	8,935.7
Baxter Lake Northwest	1382	30,379.6
Wainwright East	1383	41,040.5
Jenner West B	1385	56,604.4
Lucky Lake	1386	3,497.1
Calling Lake South	1387	44,773.6
Steveville	1388	99,635.5
Fawcett River East	1389	19,105.1
Halkirk	1391	50,827.9
Ribstone	1392	43,882.0
Bashaw B	1393	31,142.9
Flatbush	1394	12,436.9
Sedgewick East	1395	17,475.2
Minburn	1396	27,546.2
Castor	1397	56,685.5
Baptiste	1398	18,972.5
Rock Island Lake	1400	92,910.9
Bonar West	1401	26,272.1
Hilda West	1402	11,547.4
Sedgewick North	1403	41,749.3
Island Lake	1407	15,426.7
Bullpound	1409	260,573.3
Horburg	1411	6,215.0
Tieland	1412	44,566.2
Hudson West	1413	39,906.1
St. Lina	1414	65,028.6
St. Lina North	1415	150,873.3
St. Lina West	1416	27,978.1
Hattie Lake North	1418	32,187.9
Makepeace North	1419	107,062.0
Suffield West	1423	104,034.0
Acadia Valley	1424	73,733.5
Aeco H	1426	2.2
Mikwan East	1427	62,070.5
Willingdon	1428	73,154.4
Thorhild West	1430	17,626.1
Cousins West	1433	85,875.8
Chisholm Mills	1434	18,625.5
Gem South	1435	156,671.9
Hussar North	1436	106,385.1
Ricinus West	1437	1,483,823.5
Ferintosh North	1438	-
Heisler	1439	144,339.0
Taplow	1440	22,420.3

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Doe Creek South	2712	373,508.3
Donalda	1147	59,961.9
Donatville	1520	12,446.2
Donnelly	2139	35,041.9
Doris Creek North	2254	-
Doris Creek South	2297	41,931.7
Dorothy	1236	176,926.7
Dowling	1818	98,600.6
Dreau	2719	419.3
Dropoff Creek	1689	11,876.6
Duhamel	1475	-
Dunkirk River	5022	285,941.6
Dunmore	1220	74,553.0
Dunvegan	2044	1,131,782.2
Dunvegan West	2084	134,220.2
Dunvegan West #2	2716	18,366.5
Eagle Hill	2081	63,630.9
Eaglesham	2097	24,654.1
East Calgary	2007	607,001.3
Edberg	1568	3,509.9
Edgerton	1265	14,654.8
Edgerton West	1266	21,670.8
Edson	1064	917,394.9
Edwand	1213	86,118.9
Edwand South	1467	30,397.5
Elinor Lake	1715	46,140.0
Elinor Lake East	1742	3,278.5
Elk River South	1558	714,176.2
Elmworth High	1615	1,372,488.1
Empress Border	1958	12,772.0
Enchant	1024	183,912.0
Endiang	1507	26,155.7
Equity	1074	106,716.9
Equity B	1359	4,027.4
Equity East	1586	40,201.4
Erskine North	1232	17,135.4
Estridge Lake	1746	5,315.8
Eta Lake	2049	186,905.7
Etzikom A	1547	40,880.0
Etzikom B	1548	52,175.6
Etzikom C	1549	-
Etzikom D	1557	5,262.9
Fairy dell Creek	1677	18,030.3
Faria Creek	2729	7,494.7
Fawcett River	1375	62,840.8
Fawcett River East	1389	19,105.1
Fawcett River North	1753	116,290.3
Fawcett River West	1620	-
Ferintosh North	1438	-
Ferintosh West	1659	58,576.8
Ferrier	2016	59,736.7
Ferrier North	1101	747,009.9
Ferrier South A	2115	115,397.5
Ferrier South B	1111	101,071.2

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Irish	1441	84,587.1
Travers	1442	117,122.4
Calling Lake West	1443	121,985.9
Hardisty	1444	62,948.2
Kirby	1446	461,710.6
Seiu Creek	1447	149,850.0
Grace Creek	1448	144,484.9
Kirby North	1449	193,522.7
Goodfare	1452	211,533.9
Clyde	1454	113,556.0
Glendon	1456	28,654.0
Mitsue South	1457	50,195.5
Morrin	1458	72,662.7
Beauvallon	1459	-
Morecambe	1460	70,353.2
Rosemary North	1461	71,528.4
Karr	1462	80,808.0
Vilna	1464	96,472.5
Lone Butte	1465	84,742.5
Rosemary	1466	424,451.5
Edward South	1467	30,397.5
Rosalind	1468	43,666.5
Andrew	1469	10,275.3
Aeco I	1473	-
Bindloss West	1474	38,844.1
Duhamel	1475	-
Demmitt	1476	384,426.8
Hythe	1479	210,622.0
Gleichen	1480	318,565.1
Graham	1482	86,046.7
Kent	1483	108,131.0
Mooselake River	1484	95,735.9
Chard	1485	1,724.5
Spurfield	1487	38,747.3
Atmore C	1488	18,707.0
Cutbank River	1489	602,475.3
Gem West	1490	50,793.5
Caslan	1491	7,527.5
Caslan East	1492	26,742.1
Little Sundance	1494	33,216.9
Owlseye	1495	12,541.7
Lousana	1496	69,214.6
Barich	1497	2,477.6
Robb	1499	2,768,664.6
Mirror	1500	180,213.6
Dakin	1501	-
Newbrook	1502	19,546.9
Torlea	1503	-
Goodridge	1504	15,788.8
Blood Indian Creek	1505	14,175.8
Endiang	1507	26,155.7
Michichi	1508	36,400.5
Rivercourse	1510	35,505.2
Blue Jay	1511	3,458.3

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Figure Lake	1087	2,493.0
Figure Lake #2	1764	32,175.6
FIGURE LAKE SUMMARY	1942	48,814.2
Figure Lake West	1655	-
Fish Creek	2161	2,326.7
Fitzallan South	1300	10,465.6
Flat Lake	1095	127,582.5
Flat Lake North	1302	12,187.0
Flatbush	1394	12,436.9
Florence Creek	1752	-
Foisy	1632	33,313.5
Fontas River	2251	191,148.4
Forshee	1376	51,540.1
Fort Kent	1602	100,064.4
Foulwater Creek	2199	1,414,027.0
Foulwater Creek #2	2283	-
Fourth Creek	2103	26,448.6
Fourth Creek South	2178	3,534.9
Fourth Creek West	2198	154,979.2
Frakes Flats	2268	274,081.1
Frakes Flats East	2269	-
Garrington	2078	320,725.9
Garrington East	2079	85,396.6
Gatine	1623	198,116.9
Gayford	1358	-
Gem South	1435	156,671.9
Gem West	1490	50,793.5
Ghostpine	1073	471,440.3
Ghostpine B	1617	93,749.4
Gilby #2	1037	318,510.1
Gilby East	1243	1,934.6
Gilby North #1	1041	145,714.5
Gilby North #3	1050	979.3
Gilby South Pacific	1084	178,769.6
Gilby West	2037	412,684.6
Gilmore Lake	2722	36,695.8
Gilt Edge West	1662	13,327.4
Gilt Edge West Interconnection	3894	87,469.1
Gleichen	1480	318,565.1
Glendon	1456	28,654.0
God's Lake	2290	-
Gold Creek	2031	340,969.7
Goodfare	1452	211,533.9
Goodridge	1504	15,788.8
Goodridge North	1783	50,850.0
Goosequill	1798	34,546.1
Gordondale Border	2074	1,429.0
Gordondale Interconnection	3886	14,401.3
Gordondale Receipt	2190	168,788.9
Gough Lake	1560	29,999.3
Grace Creek	1448	144,484.9
Graham	1482	86,046.7
Grainger	1352	87,370.5
Granada	2129	157,170.6

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2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Maughan	1514	19,511.7
Rourke Creek	1515	-
Sundance Creek	1516	1,169.1
Kehiwin	1517	-
St. Brides	1519	26,991.8
Donatville	1520	12,446.2
Smith	1521	34,894.8
Calling Lake East	1522	36,926.8
Helina	1523	34,925.8
Mills	1524	24,500.6
Inland South	1525	-
Akuinu River	1526	22,432.9
Vimy	1527	39,247.8
Hoole	1528	525,257.9
Daysland	1529	5,149.8
Rumsey	1530	25,910.7
Ohaton	1532	-
Standard	1534	591,525.0
Clandonald	1535	2,264.2
Linaria	1536	38,654.5
Scotfield	1537	18,809.6
Hackett	1538	63,822.3
Delia	1539	17,915.1
Rowley	1540	60,276.9
Craigmyle	1541	42,999.4
Jarvie	1543	-
Whitney	1544	-
Opal	1545	20,156.2
Etzikom A	1547	40,880.0
Etzikom B	1548	52,175.6
Etzikom C	1549	-
Murray Lake	1551	-
Bullshead	1555	32,243.5
South Saskatchewan River	1556	123,440.8
Etzikom D	1557	5,262.9
Elk River South	1558	714,176.2
Gough Lake	1560	29,999.3
Byemoor	1561	33,628.8
Lakeview Lake	1562	5,255.3
Larkspur	1564	7,191.0
Stoney Creek	1565	88,872.6
Stoney Creek West	1566	67,841.7
Armena	1567	22,529.0
Edberg	1568	3,509.9
Iroquois Creek	1569	2,489,230.8
Watts	1570	56,900.5
Marlboro	1572	297,352.0
Ansell	1573	16,214.3
Trochu	1574	70,842.1
Westlock B	1575	1,058.2
Haddock	1576	128,644.5
Winefred River	1577	47,948.5
Milo	1578	197,961.0
Rose Lynne	1579	18,131.0

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Granor	5005	162,061.9
Greencourt	1093	38,408.2
Gregory	1267	45,383.4
Gregory Northeast	1365	78,146.3
Gregory West	1259	35,583.2
Grew Lake	5025	68,239.4
Grew Lake East	5028	124,106.9
Grist Lake	1647	427,089.0
Hackett	1538	63,822.3
Hackett West	1722	95,219.8
Haddock	1576	128,644.5
Haddock North	1589	179,939.5
Haddock South	1636	98,791.2
Haig River	2086	33,725.8
Haig River East	2064	35,850.4
Haig River North	2127	212,494.9
Hairy Hill	1230	78,830.9
Halkirk	1391	50,827.9
Halkirk North	1293	-
Halkirk North #2	1834	124,580.1
Hamilton Lake	1129	-
Hamilton Lake S	3915	107,605.9
Hamlin	1291	16,004.5
Hanna	1182	32,845.0
Hardisty	1444	62,948.2
Harmattan East	1178	-
Harmattan-Elkton	1166	712,542.5
Haro River North	2145	55,050.7
Hastings Coulee	1709	60,694.4
Hattie Lake North	1418	32,187.9
Hay River	2126	43,817.9
Hay River South	2278	144,452.5
Hays	1603	160,923.5
Heart River	2140	36,210.5
Heisler	1439	144,339.0
Helina	1523	34,925.8
Henderson Creek	2164	10.8
Henderson Creek Southeast	2174	48,575.0
Hermit Lake	1673	28,420.8
Hilda West	1402	11,547.4
Hines Creek	2059	119,992.4
Hines Creek West	2219	9,478.3
Holden	1161	181,543.5
Hoole	1528	525,257.9
Horburg	1411	6,215.0
Hotchkiss	2047	45,204.1
Hotchkiss East	2065	12,472.8
Hotchkiss North	2054	77,675.3
Hotchkiss Northeast B	2094	61,103.0
Hotchkiss Northeast C	2095	31,127.2
Howard Creek East	2169	15,347.3
Hudson	1207	178,543.5
Hudson West	1413	39,906.1
Hunt Creek	2277	352,312.1

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2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Spear Lake	1580	20,461.9
Square Lake	1581	323.3
Craigmyle East	1583	43,043.4
Weasel Creek	1585	19,713.4
Equity East	1586	40,201.4
Overlea	1587	84,789.0
Albright	1588	7,650.6
Haddock North	1589	179,939.5
Bohn Lake	1590	74,201.6
Huxley East	1591	42,851.0
Iron Springs	1593	505.0
Sundance Creek East	1595	28,170.1
Rumsey West	1600	87,378.2
Queenstown	1601	204,663.3
Fort Kent	1602	100,064.4
Hays	1603	160,923.5
Berry Creek South	1604	61,296.2
Monitor Creek	1605	8,213.4
Victor	1606	46,763.2
Penhold West	1607	24,627.3
Kikino	1608	59,347.9
Chisholm Mill West	1609	1,601.3
Picture Butte	1610	15,805.1
Coates Lake	1612	49,136.5
Acadia North	1613	43,045.8
Contracosta Lake	1614	26,078.0
Elmworth High	1615	1,372,488.1
Blood Indian Creek East	1616	26,840.2
Ghostpine B	1617	93,749.4
Briggs	1619	180,492.5
Fawcett River West	1620	-
Torrington East	1621	39,289.2
Carbon West	1622	100,226.1
Gatine	1623	198,116.9
Conklin	1624	117,686.6
Kettle River	1627	110,204.4
Winefred River North	1628	19,649.5
Long Lake West	1630	22,425.5
Acadia East	1631	50,453.7
Foisy	1632	33,313.5
May Hill	1633	122,236.7
Conklin West	1634	207.2
Contracosta East	1635	34,112.9
Haddock South	1636	98,791.2
Smith West	1637	31,179.8
Tide Lake B	1639	161,960.6
Mount Valley	1641	-
Tillebrook West	1644	122,043.2
Metiskow North	1645	11,643.1
Decrene North	1646	56,269.8
Grist Lake	1647	427,089.0
Blanchet Lake North	1648	-
Badger North	1649	192,219.2
Wildunn Creek East	1650	27,807.8

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
HUNT CREEK #2	2751	33,896.0
Hussar North	1436	106,385.1
Hussar-Chancellor	1016	218,398.0
Huxley	1142	94,200.9
Huxley East	1591	42,851.0
Hylo	1241	21,361.2
Hylo South	1357	7,914.0
Hythe	1479	210,622.0
Iddesleigh South	1277	75,882.3
Indian Lake	1678	13,983.1
Indian Lake #2	1717	109,204.7
Inland South	1525	-
Ipiatik Lake	1685	69,784.3
Irish	1441	84,587.1
Iron Springs	1593	505.0
Iroquois Creek	1569	2,489,230.8
Irvine	1201	2,529.2
Island Lake	1407	15,426.7
Island Lake #2	1700	25,399.8
Jackfish Creek	1694	30,792.7
Jackpot Creek	2723	30,539.3
Jackson Creek	2146	192,969.4
James River Interchange	2045	-
Jarrow	1163	100,826.4
Jarrow South	1159	32,903.1
Jarrow West	1281	40,050.2
Jarvie	1543	-
Jarvie North	1799	3,732.0
Jenner East	1143	23,417.4
Jenner West	1099	195,582.5
Jenner West B	1385	56,604.4
Joffre	1167	28,054.0
Jones Lake	2267	665,264.4
Jones Lake #2	2279	182,174.3
Jones Lake East	2272	5,324.8
Jones Lake North	2241	62,526.1
Josephine	2087	46,533.5
Josephine East	2083	20,800.2
Judy Creek	2022	102,096.8
Judy Creek North	2025	-
Jumping Pound	2006	32,200.0
Jumping Pound West	2036	220,611.1
Karr	1462	80,808.0
Kaybob	2013	80,261.8
Kaybob 11-36	2027	11,910.1
Kaybob South	2020	301,805.5
Kaybob South #3	2035	1,343,087.0
Keg River	2053	31,255.3
Keg River East	2068	17,714.1
Keg River North	2216	32,353.3
Kehiwin	1517	-
Keho Lake	1224	5,049.4
Keho Lake North	1775	14,253.2
KEMP RIVER	2748	34,552.6

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2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Camrose Creek	1651	42,137.1
Willow River	1652	104,192.7
Rock Island Lake South	1654	-
Figure Lake West	1655	-
Miquelon Lake	1658	69,763.1
Ferintosh West	1659	58,576.8
Bonnyville	1660	19,450.3
Wildhay River	1661	685,413.3
Gilt Edge West	1662	13,327.4
Marlboro East	1663	99,160.4
Parsons Lake	1665	14,410.2
Cheecham	1666	82,049.0
Cottonwood Creek	1667	45,543.3
Kettle River North	1668	-
Waddell Creek	1669	29,351.2
Winefred River West	1670	27,056.4
Winefred River South	1671	69,446.5
Marten Hills North	1672	53,970.7
Hermit Lake	1673	28,420.8
Sunday Creek	1674	24,242.6
Bellis South	1675	12,286.5
Calling Lake North	1676	40,931.7
Fairydel Creek	1677	18,030.3
Indian Lake	1678	13,983.1
Chump Lake	1679	4,684.1
Cherry Grove East	1680	22,637.1
Akuinu River West	1681	31,708.7
Kinosis	1682	73,937.2
Wiau Lake	1684	53,894.4
Ipiatik Lake	1685	69,784.3
Crammond	1686	1,264,983.0
Dropoff Creek	1689	11,876.6
Corner Lake	1691	-
Caribou Lake	1692	573,364.4
Minnow Lake	1693	74,155.9
Jackfish Creek	1694	30,792.7
Lawrence Lake North	1695	61,559.0
Sunday Creek South	1696	104,365.2
Corrigall Lake	1697	332,771.0
Twelve Mile Coulee	1699	124,580.0
Island Lake #2	1700	25,399.8
Crooked Lake South	1701	55,967.9
Boyle West	1703	26,999.8
Meadow Creek	1704	144,069.8
Meadow Creek West	1705	206,780.2
Rourke Creek East	1706	23,440.3
Meadow Creek East	1707	29,258.6
Chelsea Creek	1708	134,612.0
Hastings Coulee	1709	60,694.4
Pleasant West	1710	6,710.7
Conklin West #2	1711	1,417.3
Christina Lake	1712	16,970.5
Conn Lake	1713	20,192.5
Piche Lake	1714	65,661.8

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Kent	1483	108,131.0
Keppler Creek	2739	29,720.6
Kettle River	1627	110,204.4
Kettle River North	1668	-
Kidney Lake	2288	59,194.7
Kikino	1608	59,347.9
Kikino North	1772	15,732.3
Killam	1162	67,420.0
Killam North	1298	127,829.9
Kinosis	1682	73,937.2
Kirby	1446	461,710.6
Kirby North	1449	193,522.7
Kirby North #2	1727	333,996.2
Ksituan River	2134	12,028.3
Lac La Biche	1721	2,872.0
Lacorey	1718	43,814.3
Lafond Creek	2287	15,683.5
Lafond East	2733	15,762.6
Lake Newell East	1210	72,157.3
Lakeview Lake	1562	5,255.3
Lakeview Lake #2	1828	50,679.0
Lalby Creek	2737	23,905.8
Lamerton	1767	111,764.1
Lanfine	1206	87,590.0
Larkspur	1564	7,191.0
Last Lake	2223	3,930.0
Lasthill Creek	2151	2,558.2
Lathrop Creek	2259	439,070.4
Lavoy	1132	133,332.6
Lawrence Lake	1324	11,016.0
Lawrence Lake North	1695	61,559.0
Leafland	2040	34,532.7
Lee Lake	1833	22,963.6
Leedale	2179	94,814.8
Leming Lake Sales	3605	4,475.9
Lennard Creek	2249	44,075.3
Leo	1272	27,751.8
Liege	5003	92,746.3
Liege North	5083	114,920.2
Linaria	1536	38,654.5
Little Sundance	1494	33,216.9
Lobstick	2111	122,091.4
Lone Butte	1465	84,742.5
Lone Pine Creek	1069	88,973.9
Lone Pine South	1139	379,170.0
Lonesome Lake	1768	59,355.9
Long Lake West	1630	22,425.5
Louisiana Lake	1366	225,878.3
Lousana	1496	69,214.6
Lovet Creek	2128	36,940.5
Lucky Lake	1386	3,497.1
Mackay River	5021	31,685.0
Mahaska	2702	15,148.1
Mahaska West	2700	67,377.1

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Elinor Lake	1715	46,140.0
Osborne Lake	1716	87,390.7
Indian Lake #2	1717	109,204.7
Lacorey	1718	43,814.3
Manatoken Lake	1719	18,008.3
Beltz Lake	1720	101,042.3
Lac La Biche	1721	2,872.0
Hackett West	1722	95,219.8
Weaver Lake	1723	18,105.9
Wabasca	1724	19,662.5
Cadogan	1725	81,650.4
Kirby North #2	1727	333,996.2
Paradise Valley	1728	4,198.2
Myrnam	1730	5,927.6
Devenish West	1733	74,481.8
Devenish South	1734	37,296.7
Waddell Creek West	1736	118,641.8
Cavalier	1737	398,130.4
Dancing Lake	1738	16,233.7
Piper Creek	1739	77,835.3
Rabbit Lake	1741	203,829.9
Elinor Lake East	1742	3,278.5
Estridge Lake	1746	5,315.8
Nightingale	1747	105,126.1
Crossfield East #2	1751	196,788.1
Florence Creek	1752	-
Fawcett River North	1753	116,290.3
Battle Lake East	1754	14,894.0
Ranfurly C	1756	-
Willow River North	1759	68,374.0
Decrene East	1760	143,796.5
Whiskyjack Lake	1762	-
Corner Lake #2	1763	9,305.5
Figure Lake #2	1764	32,175.6
Lamerton	1767	111,764.1
Lonesome Lake	1768	59,355.9
Mastin Lake	1769	24,087.2
Armstrong Lake	1770	21,359.5
Monitor Creek West	1771	12,586.6
Kikino North	1772	15,732.3
Crow Lake South	1773	78,189.8
Munson	1774	20,387.8
Keho Lake North	1775	14,253.2
Nisbet Lake	1776	80,496.3
Wiau Lake South	1777	38,091.4
Bolloque #2	1778	48,923.0
Bloor Lake	1779	127,768.5
Weaver Lake South	1780	2,724.1
Moss Lake	1781	50,120.2
Baileys Bottom	1782	32,846.5
Goodridge North	1783	50,850.0
Muskwa River	1785	141,654.9
Whistwow	1787	174,961.8
Agnes Lake	1789	-

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Majestic	1229	6,375.1
Makepeace North	1419	107,062.0
Manatoken Lake	1719	18,008.3
Manir	2720	324,931.6
Maple Glen	1273	197,963.9
Marlboro	1572	297,352.0
Marlboro East	1663	99,160.4
Marlow Creek	2713	157,396.2
Marsh Head Creek	2228	122,206.9
MARSH HEAD CREEK WEST	2750	63,875.0
Marten Hills	1091	553,800.6
Marten Hills North	1672	53,970.7
Marten Hills South	1097	154,584.3
Mastin Lake	1769	24,087.2
Matzhiwin East	1270	98,535.1
Matzhiwin Northeast	1284	95,912.0
Matzhiwin South	1379	70,341.1
Matzhiwin West	1150	119,835.2
Matzhiwin West B	1288	-
Maughan	1514	19,511.7
May Hill	1633	122,236.7
McLean Creek	2706	169,015.7
McLennan	2144	12,140.2
McMillan Lake	2710	79,029.1
Mcneill Border	6404	27.8
Meadow Creek	1704	144,069.8
Meadow Creek East	1707	29,258.6
Meadow Creek West	1705	206,780.2
Meanook	1338	55,098.0
Med Hat North #1	1017	35,346.7
Med Hat South #1	1018	21,796.3
Med Hat South #2	1043	164,175.6
Med Hat South #4	1128	63,567.8
Medicine Hat East	1186	61,090.6
Medicine Hat North Arco	1184	62,015.2
Medicine Hat North F	1325	20,277.1
Medicine Hat Northwest	1205	32,177.0
Medicine Hat West	1172	29,343.8
Medicine River A	1214	18,778.7
Metiskow North	1645	11,643.1
Meyer	1362	28,256.8
Meyer 'B'	1363	-
Michichi	1508	36,400.5
Mikwan	1146	118,203.5
Mikwan East	1427	62,070.5
Mikwan North	1144	57,479.0
Millers Lake	2237	145,388.8
Mills	1524	24,500.6
Milo	1578	197,961.0
Minburn	1396	27,546.2
Minnehik Buck Lake	2010	482,196.5
Minnehik Buck Lake B	2149	17,441.6
Minnow Lake	1693	74,155.9
Miquelon Lake	1658	69,763.1

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Atusis Creek East	1792	92,140.1
Diamond City	1793	20,483.8
Bassano South #2	1794	90,255.3
Bonnie Glenn	1796	821,556.9
Pitlo	1797	74,855.3
Goosequill	1798	34,546.1
Jarvie North	1799	3,732.0
Akuinu River West	1800	22,044.2
Vandersteene Lake	1801	57,790.7
Moss Lake North	1802	36,692.0
Clyde North	1803	31,603.3
Canoe Lake	1805	1,144,844.6
Simon Lakes	1806	64,435.5
Culp North	1807	104,950.1
Whitemud West	1811	13,773.0
Osland Lake	1812	-
Orloff Lake	1814	22,491.7
Owl Lake	1817	374,363.2
Dowling	1818	98,600.6
Orloff Lake South	1819	-
Rock Island Lake South #2	1820	38,898.4
Wandering River	1822	40,339.2
Moose Portage	1823	19,351.5
Obed Creek	1824	149,850.0
Welling	1825	136,685.7
Ralston South	1826	70,130.7
Sedalia	1827	28,345.1
Lakeview Lake #2	1828	50,679.0
Obed North	1829	360,845.0
Lee Lake	1833	22,963.6
Halkirk North #2	1834	124,580.1
Bigknife Creek	1835	44,500.0
TAWADINA CREEK	1837	54,327.7
REDCLIFF SOUTH #2	1838	82,871.8
TILLEY SOUTH #2	1839	47,154.5
CARSELAND	1840	94,918.5
TORLEA EAST	1841	96,987.2
BOWMANTON EAST	1842	17,315.5
FIGURE LAKE SUMMARY	1942	48,814.2
Zama Lake Summary	1944	350,432.2
Waterton 1 & 2 Summary	1945	1,057,813.6
Brazeau/Brazeau East	1947	539,171.7
Rimbey/Westerose	1949	1,672,555.9
Empress Border	1958	12,772.0
Alberta-BC Border	2001	23.8
Coleman	2003	259,973.2
Wildcat Hills	2005	1,013,448.2
Jumping Pound	2006	32,200.0
East Calgary	2007	607,001.3
Crossfield	2008	299,865.3
Westerose	2009	-
Minnehik Buck Lake	2010	482,196.5
Pembina	2011	386.1
Windfall	2012	301,923.8

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Mirage	2273	6,733.2
Mirror	1500	180,213.6
Mitsue	1090	148,543.2
Mitsue South	1457	50,195.5
Monarch Exchange	3863	440,196.8
Monarch North A	1313	5,030.6
Monitor Creek	1605	8,213.4
Monitor Creek West	1771	12,586.6
Monitor South	1222	79,659.2
Mons Lake	1292	760.2
Mons Lake East	1355	6,681.6
Moonshine Lake	2240	-
Moose Portage	1823	19,351.5
Mooselake River	1484	95,735.9
Morecambe	1460	70,353.2
Morrin	1458	72,662.7
Moss Lake	1781	50,120.2
Moss Lake North	1802	36,692.0
Mount Valley	1641	-
Mountain Lake	2732	12,051.9
Mulligan Creek South	2206	135.2
Munson	1774	20,387.8
Murray Lake	1551	-
Muskeg Creek	2236	209,922.2
Muskwa River	1785	141,654.9
Musreau Lake	2711	293,603.8
Myrnam	1730	5,927.6
NARRAWAY RIVER	2745	808,403.2
Neptune	3009	36,811.4
Nestow	1276	40,372.4
Netook	1316	4,572.8
Nevis North	1020	78,573.7
Nevis South	1019	438,470.8
Newbrook	1502	19,546.9
Newell North	1140	6,486.9
Nightingale	1747	105,126.1
Niobe Creek	2242	22,779.7
Nipisi	1194	40,152.7
Nisbet Lake	1776	80,496.3
Niton	2071	180,592.8
Niton North	2172	8,389.5
Noel Lake South	2714	12,768.9
Notikewin River	2192	47,119.7
Notikewin River North	2218	81,957.4
Obed Creek	1824	149,850.0
Obed North	1829	360,845.0
Ohaton	1532	-
Olds	1053	311,784.4
Ole Lake	2202	-
Opal	1545	20,156.2
Orloff Lake	1814	22,491.7
Orloff Lake South	1819	-
Orton	2726	167,601.0
Osborne Lake	1716	87,390.7

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Kaybob	2013	80,261.8
Willesden Green	2014	98,761.8
Ferrier	2016	59,736.7
Crossfield West	2017	7,928.8
Carson Creek	2018	158,452.1
Wilson Creek	2019	289,282.9
Kaybob South	2020	301,805.5
Judy Creek	2022	102,096.8
Bigstone	2023	-
Brazeau East	2024	94,459.8
Judy Creek North	2025	-
Quirk Creek	2026	583,453.8
Kaybob 11-36	2027	11,910.1
Simonette	2028	120,778.2
Waskahigan	2029	780.8
Sturgeon Lake South	2030	86,706.3
Gold Creek	2031	340,969.7
Burnt Timber	2032	965,047.6
Simonette North	2033	8,390.0
Virginia Hills	2034	30,850.4
Kaybob South #3	2035	1,343,087.0
Jumping Pound West	2036	220,611.1
Gilby West	2037	412,684.6
Leafland	2040	34,532.7
Belloy	2043	148,626.5
Dunvegan	2044	1,131,782.2
James River Interchange	2045	-
Pioneer	2046	35,300.4
Hotchkiss	2047	45,204.1
Eta Lake	2049	186,905.7
Whitemud River	2050	11,465.3
Keg River	2053	31,255.3
Hotchkiss North	2054	77,675.3
Whitemud East	2055	13,900.0
Whitemud West	2056	2,922.2
Worsley East	2057	18,049.9
Hines Creek	2059	119,992.4
Zama Lake	2060	118,950.3
Waskahigan North	2062	-
Clear Hills	2063	81,581.3
Haig River East	2064	35,850.4
Hotchkiss East	2065	12,472.8
Basset Lake West	2066	218,169.0
Keg River East	2068	17,714.1
Clark Lake	2070	81,813.1
Niton	2071	180,592.8
Virginia Hls East	2073	576.3
Gordondale Border	2074	1,429.0
Whitelaw	2075	50,767.5
Teepee Creek	2076	67,687.7
Rosevear	2077	-
Garrington	2078	320,725.9
Garrington East	2079	85,396.6
Eagle Hill	2081	63,630.9

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Osland Lake	1812	-
Overlea	1587	84,789.0
Owl Lake	1817	374,363.2
Owl Lake South	2728	35,433.2
Owl Lake South #2	2742	1,025,734.2
OWL LAKE SOUTH #3	2746	2,456,394.4
Owlseye	1495	12,541.7
Oyen	1007	48,622.8
Oyen East	1124	-
Oyen North	1058	47,825.6
Oyen Southeast	1126	1,035.6
Paddle Prair South	2098	76,177.7
Paddle Prairie	2093	254,671.4
Paddle River	1307	89,518.3
Paradise Valley	1728	4,198.2
Parsons Lake	1665	14,410.2
Pass Creek	2089	77,197.6
Pass Creek West	2168	32,561.1
Pastecho River	2260	91,716.3
Patricia	1278	40,490.7
Patricia West	1289	71,785.9
Peers	2135	380.2
Pembina	2011	386.1
Pembina Interconnection	3804	178,669.0
Pembina West	2185	2,649.3
Penhold	1180	16,291.7
Penhold West	1607	24,627.3
Pete Lake	2280	299,288.7
Pete Lake South	2247	14.7
Piche Lake	1714	65,661.8
Picture Butte	1610	15,805.1
Pioneer	2046	35,300.4
Pioneer East	2088	36,390.9
Piper Creek	1739	77,835.3
Pitlo	1797	74,855.3
Plain Lake	1110	137,075.7
Pleasant West	1710	6,710.7
Poison Creek	2173	60,998.6
Priddis Interconnection	3879	18,557.3
Princess East	1246	187,409.3
Princess South	1327	89,822.9
Princess West	1183	93,495.4
Princess-Denhardt	1010	37,817.9
Princess-Iddesleigh	1022	30,154.1
Progress	2153	115,290.7
Progress East	2191	236,430.7
Prosperity	1304	5,876.9
Provost Monitor	1211	23,977.5
Provost North	1003	152,234.0
Provost South	1013	47,336.9
Provost West	1045	41,672.1
Provost-Brownfield	1102	48,072.2
Provost-Kessler	1038	135,453.4
Queenstown	1601	204,663.3

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Tangent	2082	18,395.2
Josephine East	2083	20,800.2
Dunvegan West	2084	134,220.2
Basset Lake South	2085	35,736.9
Haig River	2086	33,725.8
Josephine	2087	46,533.5
Pioneer East	2088	36,390.9
Pass Creek	2089	77,197.6
Paddle Prairie	2093	254,671.4
Hotchkiss Northeast B	2094	61,103.0
Hotchkiss Northeast C	2095	31,127.2
Waskahigan East	2096	-
Eaglesham	2097	24,654.1
Paddle Prair South	2098	76,177.7
Rosevear South	2099	337,134.8
Fourth Creek	2103	26,448.6
Rat Creek	2104	144,775.1
Bellroy West	2105	112,728.8
Brazeau North	2106	-
Valhalla	2107	14,273.5
Chinchaga	2108	487,809.0
Alder Flats	2109	-
Dixonville North	2110	29,910.1
Lobstick	2111	122,091.4
Willesden Green North	2112	253,744.0
Caroline North	2113	255,316.0
Ferrier South A	2115	115,397.5
Tony Creek North	2116	68,477.0
Botha	2117	150,231.4
Burnt River	2118	70,955.0
Blueberry Hill	2119	17,915.8
West Pembina South	2120	119,451.3
Tangent B	2121	144,823.9
Chickadee Creek	2122	-
Watino	2123	102,509.7
Woking	2124	-
Hay River	2126	43,817.9
Haig River North	2127	212,494.9
Lovet Creek	2128	36,940.5
Granada	2129	157,170.6
Bear River	2132	31,977.1
Warrensville	2133	16,623.6
Ksituan River	2134	12,028.3
Peers	2135	380.2
Ante Creek South	2136	23,653.8
Sloat Creek	2137	958,707.7
Boyer East	2138	29,771.5
Donnelly	2139	35,041.9
Heart River	2140	36,210.5
Bay Tree	2143	7,022.1
Mclennan	2144	12,140.2
Haro River North	2145	55,050.7
Jackson Creek	2146	192,969.4
Withrow	2147	40,599.8

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Quirk Creek	2026	583,453.8
Rabbit Lake	1741	203,829.9
Rainbow Lake	2159	-
Rainbow Lake South	2201	112,913.6
Rainier	1106	200,884.4
Rainier South	1378	231,422.6
Rainier Southwest	1380	8,935.7
Ralston	1282	87,675.3
Ralston South	1826	70,130.7
Rambling Creek	2148	21,554.8
Rambling Creek East	2213	14,269.5
Ranfurly	1164	1,909.9
Ranfurly C	1756	-
Ranfurly North	1189	70,296.1
Ranfurly West	1165	198,144.3
Raspberry Lake	2211	150,001.0
Rat Creek	2104	144,775.1
Rat Creek South	2265	99,792.1
Rat Creek West	2252	907,955.1
Ray Lake South	2193	88,783.4
Ray Lake West	2166	27,242.5
Redcliff	1209	166,579.2
Redcliff South	1219	5,989.2
REDCLIFF SOUTH #2	1838	82,871.8
Redcliff West	1346	29,715.4
Retlaw	1057	103,887.4
Retlaw South	1218	316,675.7
Ribstone	1392	43,882.0
Rich Lake	1374	22,242.0
Richmond	1306	2,678.6
Ricinus	1135	4,639,556.5
Ricinus South	1372	481,994.8
Ricinus West	1437	1,483,823.5
Rimbey	1033	-
Rimbey/Westerose	1949	1,672,555.9
Rim-West Sales	3405	1,194.9
Rivercourse	1510	35,505.2
Robb	1499	2,768,664.6
Rochester	1336	25,597.9
Rock Island Lake	1400	92,910.9
Rock Island Lake South	1654	-
Rock Island Lake South #2	1820	38,898.4
Rockyford	1134	9,810.7
Rod Lake	2715	2,066.1
Rosalind	1468	43,666.5
Rose Lynne	1579	18,131.0
Rosemary	1466	424,451.5
Rosemary North	1461	71,528.4
Rosevear	2077	-
Rosevear South	2099	337,134.8
Rossbear Lake	2725	27,240.6
Rourke Creek	1515	-
Rourke Creek East	1706	23,440.3
Rowley	1540	60,276.9

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Rambling Creek	2148	21,554.8
Minnehik Buck Lake B	2149	17,441.6
Bingley	2150	3,154.0
Lasthill Creek	2151	2,558.2
Codner	2152	193,257.5
Progress	2153	115,290.7
Tanghe Creek	2157	2,287,268.7
Wembley	2158	157,227.5
Rainbow Lake	2159	-
Water Valley	2160	13,206.3
Fish Creek	2161	2,326.7
Henderson Creek	2164	10.8
Sneddon Creek	2165	34,128.4
Ray Lake West	2166	27,242.5
Pass Creek West	2168	32,561.1
Howard Creek East	2169	15,347.3
Silverwood	2170	25,280.5
Wilson Creek Southeast	2171	53,121.7
Niton North	2172	8,389.5
Poison Creek	2173	60,998.6
Henderson Creek Southeast	2174	48,575.0
Big Prairie	2175	124,946.1
Bigoray River	2176	39,815.6
Benbow South	2177	93,903.3
Fourth Creek South	2178	3,534.9
Leedale	2179	94,814.8
Butte	2181	16,020.8
Botha East	2182	125,031.5
Silver Valley	2184	-
Pembina West	2185	2,649.3
Bear River West	2186	19,278.1
Carson Creek East	2188	40,327.8
Valhalla East	2189	21,479.5
Gordondale Receipt	2190	168,788.9
Progress East	2191	236,430.7
Notikewin River	2192	47,119.7
Ray Lake South	2193	88,783.4
Deep Valley Creek East	2194	31,704.2
Doe Creek	2197	8,617.4
Fourth Creek West	2198	154,979.2
Foulwater Creek	2199	1,414,027.0
Alder Flats South	2200	321,673.6
Rainbow Lake South	2201	112,913.6
Ole Lake	2202	-
Tanghe Creek #2	2204	289,397.8
Mulligan Creek South	2206	135.2
Webster	2207	35,386.5
Tangent East	2208	32,974.6
Cynthia #2	2209	369,976.0
Dixonville North #2	2210	1,062.8
Raspberry Lake	2211	150,001.0
Rambling Creek East	2213	14,269.5
Wolverine River	2214	88,271.6
Keg River North	2216	32,353.3

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Royal Park	1299	20,769.6
Rumsey	1530	25,910.7
Rumsey West	1600	87,378.2
Running Lake	2282	-
Russell Creek	2261	22,766.4
Saddle Lake North	1311	102,128.8
Saddle Lake West	1310	45,786.1
Saleski	5004	43,142.7
Sand Creek	2281	517,618.3
Schuler	1263	-
Scotfield	1537	18,809.6
Sedalia	1827	28,345.1
Sedalia North	1036	73,228.9
Sedalia South	1023	11,140.3
Sedgewick	1114	54,276.2
Sedgewick East	1395	17,475.2
Sedgewick North	1403	41,749.3
Seiu Creek	1447	149,850.0
September Lake	1328	-
September Lake North	1370	6,123.2
Shekilie River North	2276	586,951.5
Sibbald	1008	-
Silver Valley	2184	-
Silverwood	2170	25,280.5
Silverwood North	2239	28,698.8
Simon Lakes	1806	64,435.5
Simonette	2028	120,778.2
Simonette North	2033	8,390.0
Slawa North	1354	69,825.7
Slims Lake	2235	17,216.7
Sloat Creek	2137	958,707.7
Smith	1521	34,894.8
Smith West	1637	31,179.8
Sneddon Creek	2165	34,128.4
Snipe Lake	2253	50,506.9
Snowfall Creek	2264	41,868.9
South Elktion	1065	16,685.2
South Saskatchewan River	1556	123,440.8
Spear Lake	1580	20,461.9
Sprucefield	1341	45,696.9
Spurfield	1487	38,747.3
Square Lake	1581	323.3
St. Brides	1519	26,991.8
St. Lina	1414	65,028.6
St. Lina North	1415	150,873.3
St. Lina West	1416	27,978.1
Standard	1534	591,525.0
Stanmore	1131	118,975.1
Stanmore South	1156	94,248.5
Steele Lake	1371	73,962.8
Steen River	2284	293,789.6
Stettler South	1308	146,971.7
Steveville	1388	99,635.5
Stoney Creek	1565	88,872.6

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Botha West	2217	59,325.3
Notikewin River North	2218	81,957.4
Hines Creek West	2219	9,478.3
Boulder Creek	2220	64,258.6
Cadotte River	2221	200,810.0
Bear Canyon West	2222	73,486.3
Last Lake	2223	3,930.0
Two Creeks	2224	35,927.1
Valhalla #2	2227	66,850.6
Marsh Head Creek	2228	122,206.9
Two Creeks East	2229	36,501.3
Bigstone East	2231	13,313.2
Bigstone East B	2232	12,242.4
Debolt	2233	21,316.1
Slims Lake	2235	17,216.7
Muskeg Creek	2236	209,922.2
Millers Lake	2237	145,388.8
Silverwood North	2239	28,698.8
Moonshine Lake	2240	-
Jones Lake North	2241	62,526.1
Niobe Creek	2242	22,779.7
Deep Valley Creek South	2244	107,994.6
Bluesky	2245	-
Cadotte River South	2246	-
Pete Lake South	2247	14.7
Webster North	2248	5,703.0
Lennard Creek	2249	44,075.3
Clear Hills North	2250	977.4
Fontas River	2251	191,148.4
Rat Creek West	2252	907,955.1
Snipe Lake	2253	50,506.9
Doris Creek North	2254	-
Bison Lake	2256	18,218.9
Wapiti North	2257	-
Lathrop Creek	2259	439,070.4
Pastecho River	2260	91,716.3
Russell Creek	2261	22,766.4
Zama Lake #2	2263	148,464.4
Snowfall Creek	2264	41,868.9
Rat Creek South	2265	99,792.1
Chinchaga West	2266	165,540.6
Jones Lake	2267	665,264.4
Frakes Flats	2268	274,081.1
Frakes Flats East	2269	-
Jones Lake East	2272	5,324.8
Mirage	2273	6,733.2
Blueberry Hill East	2274	-
Shekilie River North	2276	586,951.5
Hunt Creek	2277	352,312.1
Hay River South	2278	144,452.5
Jones Lake #2	2279	182,174.3
Pete Lake	2280	299,288.7
Sand Creek	2281	517,618.3
Running Lake	2282	-

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Stoney Creek West	1566	67,841.7
Stowe Creek	2740	57,473.7
Strachan	1115	1,372,532.5
Strome Holmberg	1179	172,000.4
Sturgeon Lake South	2030	86,706.3
Suffield West	1423	104,034.0
Sullivan Lake	1193	59,535.1
Sundance Creek	1516	1,169.1
Sundance Creek East	1595	28,170.1
Sunday Creek	1674	24,242.6
Sunday Creek South	1696	104,365.2
Sunnynook	1079	31,442.9
Sylvan Lake	1054	241,904.7
Sylvan Lake East #1	1187	15,363.1
Sylvan Lake South	1191	195,242.5
Sylvan Lake West	1055	420,386.6
Tangent	2082	18,395.2
Tangent B	2121	144,823.9
Tangent East	2208	32,974.6
Tanghe Creek	2157	2,287,268.7
Tanghe Creek #2	2204	289,397.8
TANGHE CREEK #3	2747	329,580.0
Taplow	1440	22,420.3
TAWADINA CREEK	1837	54,327.7
Teepee Creek	2076	67,687.7
Thickwood Hills	5027	50,749.7
Thorhild	1377	26,717.6
Thorhild West	1430	17,626.1
Three Hills Creek	1029	127,909.0
Three Hls Creek West	1335	19,758.8
Tide Lake	1348	132,528.5
Tide Lake B	1639	161,960.6
Tide Lake East	1331	41,971.3
Tide Lake North	1268	33,705.0
Tide Lake South	1223	195,332.0
Tieland	1412	44,566.2
Tillebrook	1314	81,424.7
Tillebrook West	1644	122,043.2
Tilley	1169	259,604.3
TILLEY SOUTH #2	1839	47,154.5
Tony Creek North	2116	68,477.0
Torlea	1503	-
TORLEA EAST	1841	96,987.2
Torrington East	1621	39,289.2
Travers	1442	117,122.4
Trochu	1574	70,842.1
Tweedie	1343	42,241.3
Tweedie South	1256	22,760.6
Twelve Mile Coulee	1699	124,580.0
Twining	1190	84,674.9
Twining North	1066	61,780.3
Two Creeks	2224	35,927.1
Two Creeks East	2229	36,501.3
Ukalta	1120	23,759.1

Appendix 4

2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Foulwater Creek #2	2283	-
Steen River	2284	293,789.6
Deadrick	2285	-
Chickadee Creek	2286	82,685.6
Lafond Creek	2287	15,683.5
Kidney Lake	2288	59,194.7
Darling Creek	2289	149,872.9
God's Lake	2290	-
Alder Flats #2	2291	237,566.8
Zama Lake #3	2292	79,582.8
Countess South	2296	213,695.9
Doris Creek South	2297	41,931.7
Mahaska West	2700	67,377.1
Whitburn East	2701	690,025.4
Mahaska	2702	15,148.1
Blue Rapids	2704	79,560.2
Chester Creek	2705	84,887.2
McLean Creek	2706	169,015.7
Winagami Lake	2707	156,150.2
Assumption	2708	39,572.2
Bootis Hill	2709	735,782.6
McMillan Lake	2710	79,029.1
Musreau Lake	2711	293,603.8
Doe Creek South	2712	373,508.3
Marlow Creek	2713	157,396.2
Noel Lake South	2714	12,768.9
Rod Lake	2715	2,066.1
Dunvegan West #2	2716	18,366.5
Culp #2	2718	12,422.6
Dreau	2719	419.3
Manir	2720	324,931.6
Brownvale North	2721	9,284.2
Gilmore Lake	2722	36,695.8
Jackpot Creek	2723	30,539.3
Crooked Lake West	2724	219,810.5
Rossbear Lake	2725	27,240.6
Orton	2726	167,601.0
Cattail Lake Meter Station	2727	13,867.3
Owl Lake South	2728	35,433.2
Faria Creek	2729	7,494.7
Crowell	2731	189,878.9
Mountain Lake	2732	12,051.9
Lafond East	2733	15,762.6
Assumption #2	2734	111,678.4
Codesa	2735	92,573.8
Copton Creek	2736	157,536.8
Laiby Creek	2737	23,905.8
Calais	2738	109,422.8
Keppler Creek	2739	29,720.6
Stowe Creek	2740	57,473.7
Owl Lake South #2	2742	1,025,734.2
Callum Creek	2743	11,412.9
Ballater #2	2744	6,176.3
NARRAWAY RIVER	2745	808,403.2

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Ukalta East	1317	-
Vale	1154	46,505.2
Vale East	1212	233,967.9
Valhalla	2107	14,273.5
Valhalla #2	2227	66,850.6
Valhalla East	2189	21,479.5
Vandersteene Lake	1801	57,790.7
Verger	1056	113,367.2
Verger South	1062	-
Verger-Homestead	1077	19,469.8
Verger-Millicent	1203	33,211.0
Veteran	5080	-
Veteran Summary	3916	16,402.4
Victor	1806	46,763.2
Viking East	1347	9,542.3
Viking Interconnection	3890	3,189.0
Viking North	1257	6,861.8
Vilna	1464	96,472.5
Vimy	1527	39,247.8
Virginia Hills	2034	30,850.4
Virginia Hls East	2073	576.3
Vulcan	1076	259,464.5
Wabasca	1724	19,662.5
Waddell Creek	1669	29,351.2
Waddell Creek West	1736	118,641.8
Wainwright East	1383	41,040.5
Wainwright South	1199	19,587.6
Wandering River	1822	40,339.2
Wapiti North	2257	-
Wardlow East	1340	49,252.6
Warrensville	2133	16,623.6
Warspite	1353	2,994.6
Warwick	1118	64,875.6
Warwick South	1173	20,000.0
Waskahigan	2029	780.8
Waskahigan East	2096	-
Waskahigan North	2062	-
Water Valley	2160	13,206.3
Waterton #1	5008	-
Waterton #2	5009	-
Waterton 1 & 2 Summary	1945	1,057,813.6
Watino	2123	102,509.7
Watts	1570	56,900.5
Wayne North	1021	169,075.0
Wayne-Dalum	1039	260,857.4
Wayne-Rosebud	1107	47,704.0
Weasel Creek	1585	19,713.4
Weaver Lake	1723	18,105.9
Weaver Lake South	1780	2,724.1
Webster	2207	35,386.5
Webster North	2248	5,703.0
Welling	1825	136,685.7
Wembley	2158	157,227.5
West Pembina South	2120	119,451.3

Appendix 4
2002 RECEIPT DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
OWL LAKE SOUTH #3	2746	2,456,394.4
TANGHE CREEK #3	2747	329,580.0
KEMP RIVER	2748	34,552.6
CRANBERRY LAKE #2	2749	8,476.4
MARSH HEAD CREEK WEST	2750	63,875.0
HUNT CREEK #2	2751	33,896.0
Boundary Lake South	3001	462.0
Cleardale	3008	1,316.9
Neptune	3009	36,811.4
Rim-West Sales	3405	1,194.9
Leming Lake Sales	3605	4,475.9
Pembina Interconnection	3804	178,669.0
Atmore B Sales Exchange	3858	19,855.2
Monarch Exchange	3863	440,196.8
Carbon Sales Ex	3866	160,409.4
Alberta Montana Border	3868	64,399.6
Westlock Sales	3871	2,397.1
Priddis Interconnection	3879	18,557.3
Coaldale Interconnection	3883	454.4
Coaldale South A & B	3884	178.2
Gordondale Interconnection	3886	14,401.3
Deep Valley Creek Interconnection	3888	28,998.9
Viking Interconnection	3890	3,189.0
Carrot Creek Interconnection	3893	35,085.1
Gilt Edge West Interconnection	3894	87,469.1
Crossfield East Interconnection	3897	287,543.5
Conklin West Interconnection	3904	1,863.2
Hamilton Lake S	3915	107,605.9
Veteran Summary	3916	16,402.4
Whitemud West	3917	18,302.4
Liege	5003	92,746.3
Saleski	5004	43,142.7
Granor	5005	162,061.9
Waterton #1	5008	-
Waterton #2	5009	-
Boivin Creek	5012	35,949.1
Mackay River	5021	31,685.0
Dunkirk River	5022	285,941.6
Chipewyan River	5023	-
Grew Lake	5025	68,239.4
Algar Lake	5026	101,685.3
Thickwood Hills	5027	50,749.7
Grew Lake East	5028	124,106.9
Veteran	5080	-
Algar Lake South	5081	-
Liege North	5083	114,920.2
Coaldale South A	5401	-
Coaldale South B	5402	4,176.8
Chip Lake	5409	5,377.9
Mcneill Border	6404	27.8

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
West Viking	1188	71,596.8
Westerose	2009	-
Westlock	1321	60,029.8
Westlock B	1575	1,058.2
Westlock Sales	3871	2,397.1
Whiskyjack Lake	1762	-
Whistwow	1787	174,961.8
Whitburn East	2701	690,025.4
Whitcourt	1094	172,986.2
Whitelaw	2075	50,767.5
Whitemud East	2055	13,900.0
Whitemud River	2050	11,465.3
Whitemud West	1811	13,773.0
Whitemud West	2056	2,922.2
Whitemud West	3917	18,302.4
Whitford	1345	30,480.7
Whitney	1544	-
Wiau Lake	1684	53,894.4
Wiau Lake South	1777	38,091.4
Wildcat Hills	2005	1,013,448.2
Wildhay River	1661	685,413.3
Wildunn Creek Burfield	1049	-
Wildunn Creek East	1650	27,807.8
Willesden Green	2014	98,761.8
Willesden Green North	2112	253,744.0
Willingdon	1428	73,154.4
Willow River	1652	104,192.7
Willow River North	1759	68,374.0
Wilson Creek	2019	289,282.9
Wilson Creek Southeast	2171	53,121.7
Wimborne	1046	117,943.5
Wimborne North	1234	81,233.8
Winagami Lake	2707	156,150.2
Windfall	2012	301,923.8
Winefred River	1577	47,948.5
Winefred River North	1628	19,649.5
Winefred River South	1671	69,446.5
Winefred River West	1670	27,056.4
Wintering Hills	1070	362,127.3
Wintering Hills East	1104	86,040.4
Withrow	2147	40,599.8
Woking	2124	-
Wolverine River	2214	88,271.6
Wood River	1035	64,491.3
Worsley East	2057	18,049.9
Youngstown	1342	56,953.3
Zama Lake	2060	118,950.3
Zama Lake #2	2263	148,464.4
Zama Lake #3	2292	79,582.8
Zama Lake Summary	1944	350,432.2

Appendix 4
2002 DELIVERY DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Unity Border	1250	340,162.0
Cold Lake Border	1417	265,542.9
Empress Border	1958	58,967,797.9
Cousins B&C Sales	1963	916,019.0
ABC Border	2001	21,764,919.0
Alberta-Montana Border	2002	98,085.4
Gordondale Border	2074	57,539.0
Cochrane Plant	2360	1,386,709.9
Boundary Lk Border	3002	0.0
Saratoga Sales	3050	
Simonette Sales	3051	
Town Of Coleman	3052	
Grande Prairie Sales	3055	0.0
Lundbreck-Cowley Sales	3058	
Allison Creek Sales	3059	6,146.7
East Calgary B Sales	3062	41,103.7
Virginia Hills Sales	3063	2,331.4
Bigstone Sales	3067	
Beaver Hill Sales	3068	
Wilson Creek South Sales	3069	
Paddy Creek Sales	3072	48,821.8
Rainbow Sales	3076	102.2
Fire Creek Sales	3077	
Judy Creek Sales	3078	0.0
Louise Creek Sales	3080	1,248.5
Elk River South Sales	3082	1.8
Rainbow Lake Sales	3083	0.0
Deep Valley Creek Sales	3085	4,930.8
Pine Creek Sales	3086	5,265.5
Gold Creek Sales	3087	12,059.6
Valhalla Sales	3088	3,020.4
Outlet Creek Sales	3091	122.5
Moosehorn River Sales	3092	22,203.2
Brazeau North Sales	3094	
Sakwatamau Sales	3095	24,284.7
Chickadee Creek Sales	3097	22,777.1
Sousa Creek East Sales	3099	5,373.3
Heart River Sales	3100	
Caroline Sales	3101	
Virgo Sales	3103	
Carmon Creek Sales	3106	225.6
Ferguson Sales	3107	36,223.5
Caldwell Sales	3109	4,217.9
Marsh Head Creek West Sales	3110	
Minnow Lake South Sales	3111	
Falher Sales	3112	
Twinlakes Creek Sales	3113	
Wembley Sales	3114	
Usona Sales	3115	
Grizzly Sales	3117	
Gilby North #2 Sales	3118	
Deadrick Creek Sales	3119	
Mildred Lake Sales	3120	

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
ABC Border	2001	21,764,919.0
Alberta-Montana Border	2002	98,085.4
Allison Creek Sales	3059	6,146.7
Amoco Empress Plant	3434	1,538,526.5
Amoco Sales Tap	3562	
Ardley Sales	3488	12,047.7
Atmore Interconnection	3858	2,883.2
Atusis Creek Sales	3489	41,769.5
Bashaw West Sales	3423	
Beaver Hill Sales	3068	
Bigstone Sales	3067	
Bittern Lake Interconnection	3887	57,190.5
Bleak Lake Sales	3468	13,394.2
Blue Ridge East Sales	3471	49,472.9
Boundary Lk Border	3002	0.0
Brazeau North Sales	3094	
Caldwell Sales	3109	4,217.9
Canoe Lake Sales	3634	
Carmon Creek Sales	3106	225.6
Caroline Sales	3101	
Carrot Creek Interconnection	3893	11,539.0
Carseland Interconnection	3409	6,610.9
Cavalier Sales	3495	
Cheecham West Sales	3622	
Chickadee Creek Sales	3097	22,777.1
Chigwell North Sales	3305	3,715.3
Chipewyan River Sales	3496	
Cochrane Plant	2360	1,386,709.9
Cold Lake Border	1417	265,542.9
Conklin West Interchange Interconn	3904	82,104.4
Cousins A Sales	3416	0.0
Cousins B&C Sales	1963	916,019.0
Crammond Sales	3483	
Cranberry Summary	3909	161,836.5
Crow Lake Sales	5024	8,470.6
Deadrick Creek Sales	3119	
Deep Valley Creek Sales	3085	4,930.8
Deep Valley Creek South	3124	
Demmitt Sales	3465	
East Calgary B Sales	3062	41,103.7
East Calgary Sales	3632	
Elk Point Sales	3456	13,708.7
Elk River South Sales	3082	1.8
Empress Border	1958	58,967,797.9
Empress Gas Liquids Joint Venture	3440	195,938.9
Evergreen Sales	3469	
Falher Sales	3112	
Ferguson Sales	3107	36,223.5
Ferintosh North Sales (Return Run)	3623	387.0
Ferintosh Sales	3430	1,321.1
Fire Creek Sales	3077	
Fleet Sales	3449	
Forestburg Sales	3304	6,911.7

Appendix 4
2002 DELIVERY DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Mildred Lake #2 Sales	3123	
Deep Valley Creek South	3124	
Huggard Creek Sales	3125	
Otauwau Sales	3300	1,473.5
Saulteaux Sales	3301	382.3
Forestburg Sales	3304	6,911.7
Chigwell North Sales	3305	3,715.3
Noel Lake Sales	3368	45,933.6
Rim-West Sales	3405	164,559.8
Redwater Sales	3406	61,054.7
Carseland Interconnection	3409	6,610.9
Wayne North B Sales	3412	19,812.6
Hanna South B Sales	3414	9,370.8
Cousins A Sales	3416	0.0
Thorild Sales	3422	
Bashaw West Sales	3423	
Grande Centre Sales	3424	
Wood River Sales	3425	61,876.5
Westlock Sales	3427	
St. Paul Sales	3429	19,510.2
Ferintosh Sales	3430	1,321.1
Petro-Canada Empress Plant	3432	957,854.0
Amoco Empress Plant	3434	1,538,526.5
Pancanadian Empress Plant	3435	311,087.5
Harmattan Sales	3437	732.3
Redwater B Interconnection	3438	27,821.4
Sheerness Sales	3439	8,440.4
Empress Gas Liquids Joint Venture	3440	195,938.9
Pincher Creek Sales	3444	7,376.5
Kakwa Sales	3445	0.0
Ross Creek Interconnection	3448	88,308.4
Fleet Sales	3449	
Joffre Extraction	3452	
Green Glade Sales	3453	0.0
Penhold North Sales	3454	153,868.0
Elk Point Sales	3456	13,708.7
Mitsue Sales	3457	0.2
Landon Lake Sales	3460	5,365.5
Greencourt West Sales	3464	17,845.7
Demmitt Sales	3465	
Bleak Lake Sales	3468	13,394.2
Evergreen Sales	3469	
Nosehill Creek Sales	3470	11,353.2
Blue Ridge East Sales	3471	49,472.9
Innisfail Sales	3472	1,426.5
Lac La Biche Sales	3476	3,303.8
Onetree Sales	3478	22,067.6
Nosehill Creek North Sales	3479	5,142.6
Sawridge Sales	3481	33,755.9
Lone Pine Creek Sales	3482	
Crammond Sales	3483	
Shomcliffe Creek Sales	3485	
Westerdale Sales	3486	3,665.6

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Gaetz Lake Sales	3490	6,838.3
Gas City Sales	3616	
Gilby North #2 Sales	3118	
God's Lake Sales (Return Run)	3624	
Gold Creek Sales	3087	12,059.6
Gordondale Border	2074	57,539.0
Grande Centre Sales	3424	
Grande Prairie Sales	3055	0.0
Green Glade Sales	3453	0.0
Greencourt West Sales	3464	17,845.7
Grizzly Sales	3117	
Hanna South B Sales	3414	9,370.8
Harmattan Sales	3437	732.3
Haynes Sales	3615	8,024.7
Heart River Sales	3100	
Hermit Lake Interconnection	3611	115,628.8
House River	5007	203,966.7
Huggard Creek Sales	3125	
Inland Interconnection	3857	745,832.9
Innisfail Sales	3472	1,426.5
Jenner East Sales	3618	4,486.4
Joffre Extraction	3452	
Joffre Sales Interconnection	3864	882,978.2
Judy Creek Sales	3078	0.0
Kakwa Sales	3445	0.0
Lac La Biche Sales	3476	3,303.8
Landon Lake Sales	3460	5,365.5
Leming Lake Sales	3605	1,085,597.8
Lone Pine Creek Sales	3482	
Loseman Lake Sales	3606	287,191.2
Loseman Lake Sales #2	3621	
Louise Creek Sales	3080	1,248.5
Lundbreck-Cowley Sales	3058	
Marguerite Lake Sales	3604	59,313.8
Marsh Head Creek West Sales	3110	
Mcneill Border	6404	21,949,204.5
Meyer 'B' Sales	3493	
Mildred Lake #2 Sales	3123	
Mildred Lake Sales	3120	
Minnow Lake South Sales	3111	
Mitsue Sales	3457	0.2
Monarch Interconnection	3863	20,826.2
Moosehorn River Sales	3092	22,203.2
Nipisi Interconnection	3878	0.0
Noel Lake Sales	3368	45,933.6
Nosehill Creek North Sales	3479	5,142.6
Nosehill Creek Sales	3470	11,353.2
Onetree Sales	3478	22,067.6
Otauwau Sales	3300	1,473.5
Outlet Creek Sales	3091	122.5
Paddy Creek Sales	3072	48,821.8
Pancanadian Empress Plant	3435	311,087.5
Pembina Interconnection	3804	31,415.6

Appendix 4
2002 DELIVERY DATA

In Ascending Order by Station Number

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Ardley Sales	3488	12,047.7
Atusis Creek Sales	3489	41,769.5
Gaetz Lake Sales	3490	6,838.3
Meyer 'B' Sales	3493	
Silver Valley Sales	3494	
Cavalier Sales	3495	
Chipewyan River Sales	3496	
Sunday Creek South Sales	3497	
Amoco Sales Tap	3562	
Stornham Coulee Sales	3600	9,674.6
Marguerite Lake Sales	3604	59,313.8
Leming Lake Sales	3605	1,085,597.8
Loseman Lake Sales	3606	287,191.2
Sarrai Sales	3609	
Hermit Lake Interconnection	3611	115,628.8
Shantz Sales	3613	
Haynes Sales	3615	8,024.7
Gas City Sales	3616	
Jenner East Sales	3618	4,486.4
Loseman Lake Sales #2	3621	
Cheecham West Sales	3622	
Ferintosh North Sales (Return Run)	3623	387.0
God's Lake Sales (Return Run)	3624	
East Calgary Sales	3632	
Ruth Lake Sales	3633	
Canoe Lake Sales	3634	
Rod Lake Sales	3635	
Ruth Lake Sales #2	3637	
Pembina Interconnection	3804	31,415.6
Inland Interconnection	3857	745,832.9
Atmore Interconnection	3858	2,883.2
Monarch Interconnection	3863	20,826.2
Joffre Sales Interconnection	3864	882,978.2
Rat Creek Interconnection	3877	0.0
Nipisi Interconnection	3878	0.0
Priddis Interconnection	3879	26,892.4
Bitter Lake Interconnection	3887	57,190.5
Viking Interconnection	3890	50,374.5
Carrot Creek Interconnection	3893	11,539.0
Conklin West Interchange Interconn	3904	82,104.4
Cranberry Summary	3909	161,836.5
Ranfurly Interconnection	3911	80,004.0
House River	5007	203,966.7
Crow Lake Sales	5024	8,470.6
Moneill Border	6404	21,949,204.5

In Alphabetical Order by Station Name

<u>Station Name</u>	<u>Station Number</u>	<u>Annual Station Throughput (1000m3)</u>
Penhold North Sales	3454	153,868.0
Petro-Canada Empress Plant	3432	957,854.0
Pincher Creek Sales	3444	7,376.5
Pine Creek Sales	3086	5,265.5
Priddis Interconnection	3879	26,892.4
Rainbow Lake Sales	3083	0.0
Rainbow Sales	3076	102.2
Ranfurly Interconnection	3911	80,004.0
Rat Creek Interconnection	3877	0.0
Redwater B Interconnection	3438	27,821.4
Redwater Sales	3406	61,054.7
Rim-West Sales	3405	164,559.8
Rod Lake Sales	3635	
Ross Creek Interconnection	3448	88,308.4
Ruth Lake Sales	3633	
Ruth Lake Sales #2	3637	
Sakwatamau Sales	3095	24,284.7
Saratoga Sales	3050	
Sarrai Sales	3609	
Saulteaux Sales	3301	382.3
Sawridge Sales	3481	33,755.9
Shantz Sales	3613	1,681.4
Sheerness Sales	3439	8,440.4
Shomcliffe Creek Sales	3485	1.2
Silver Valley Sales	3494	828.9
Simonette Sales	3051	14,245.3
Sousa Creek East Sales	3099	5,373.3
St. Paul Sales	3429	19,510.2
Stornham Coulee Sales	3600	9,674.6
Sunday Creek South Sales	3497	
Thorhild Sales	3422	
Town Of Coleman	3052	
Twinlakes Creek Sales	3113	
Unity Border	1250	340,162.0
Usona Sales	3115	
Valhalla Sales	3088	3,020.4
Viking Interconnection	3890	50,374.5
Virginia Hills Sales	3063	2,331.4
Virgo Sales	3103	
Wayne North B Sales	3412	19,812.6
Wembley Sales	3114	
Westerdale Sales	3486	3,665.6
Westlock Sales	3427	
Wilson Creek South Sales	3069	
Wood River Sales	3425	61,876.5

APPENDIX C: MAINLINE FACILITY DEFINITIONS AND MAPS**Definition A: Functional**

Mainline assets were defined as the facilities which are most aligned with a continental North American pipeline transmission function while the facilities that are most aligned with local gas aggregation were defined as lateral assets. Under this definition mainline includes the following facilities:

1. All pipelines of a Nominal Pipe Size (NPS) of 24 inches and greater, excluding short segments greater than or equal to NPS 24 used for river crossings of lines less than NPS 24.
2. All pipelines less than NPS 24 that are in the right-of-way (one mile radius) of pipe with a diameter of NPS 24 and greater (as defined in 1 above).
3. All pipes that connect to the transmission systems outside Alberta at the following border delivery points:
 - a) Gordondale (Duke)
 - b) A/BC (TransCanada B.C. System)
 - c) Alberta/Montana (Montana Power)
 - d) McNeill (Foothills Saskatchewan)
 - e) Empress (TransCanada Mainline)
 - f) Cold Lake (TransGas)

4. Select crossovers that are required for operational flexibility:

a) Hidden Lake Compressor to Meikle River Compressor

b) Saddle Hills Compressor to East of Bellow West Meter Station

c) Gold Creek Compressor Station to south of Frakes Flats East Meter Station

d) Paul Lake Compressor to North of Swartz Creek Compressor

e) Westeros Meter Station to South of Bingley Meter Station

5. All pipes connecting existing storage locations:

a) Demmit

b) January Creek

c) Crossfield East

d) Carbon

e) Severn Creek

f) AECO C

6. All existing pipes in the proposed Northwest Mainline corridor, south of Keppler Creek meter station to Weaver Lake South meter station

7. Other pipes:

a) Zama Lake Meter Station to Meikle River Compressor Station

b) Field Lake Compressor Station to Hanmore Lake Compressor Station

c) Pipes between Mainline and Simmons/Albersun at Atmore

d) Connections to 41 additional receipt stations

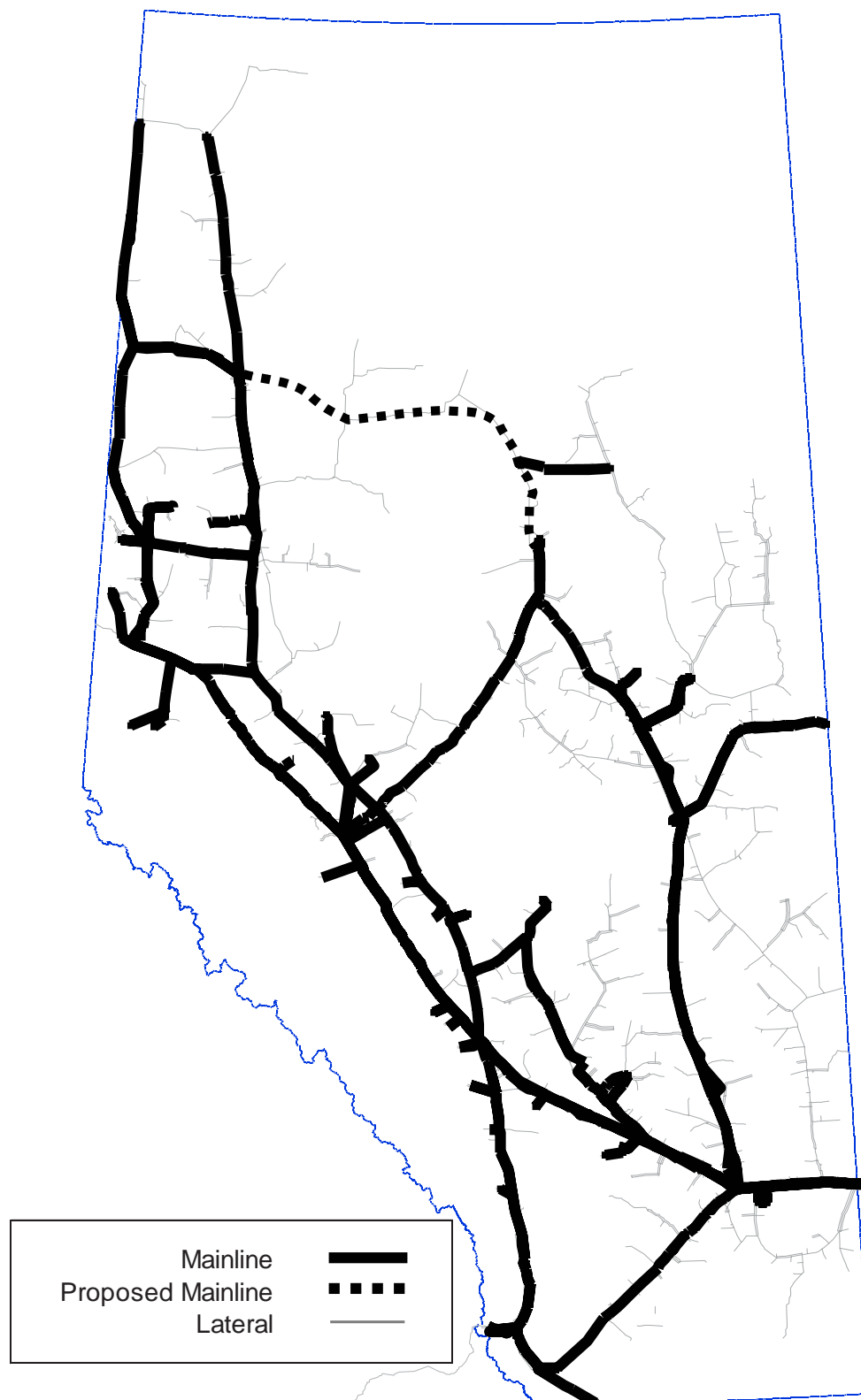
Definition B: Physical size with a diameter of 24 inches or greater

In this definition, only those pipes described under the first criterion of Definition A (i.e. all pipelines of NPS 24 and greater, excluding short segments greater than or equal to NPS 24 used for river crossings of lines less than NPS 24) were defined as mainline assets. All pipelines less than NPS 24 and short segments greater than or equal to NPS 24 used for river crossings of lines less than NPS 24 were defined as lateral assets. In this definition, only the storage facilities at January Creek, Crossfield East and AECO C are in the mainline area because, as of December 31, 2002, they are the only storage facilities serviced by pipes that are at least 24 inches in diameter.

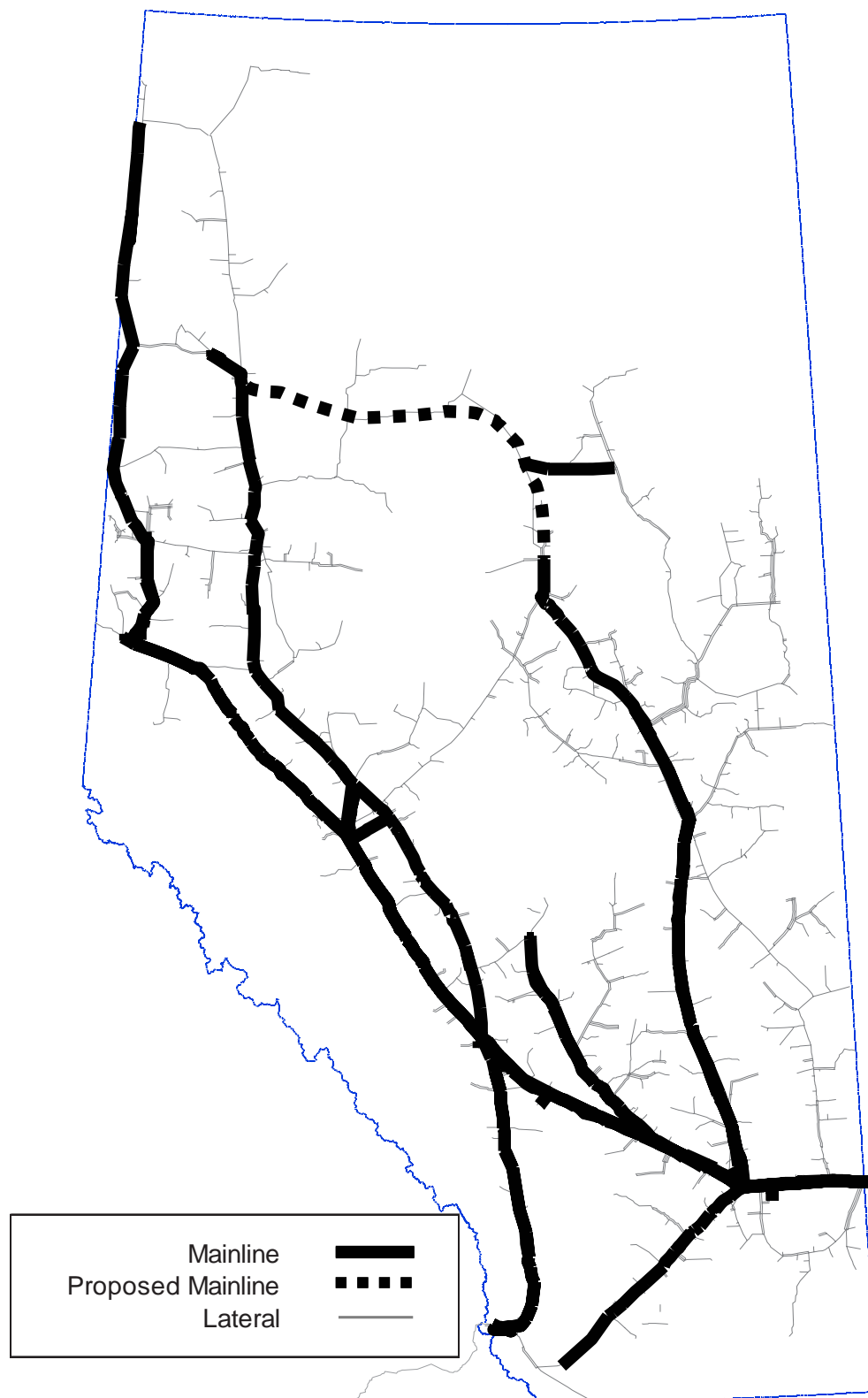
Definition C: Physical size with a diameter of 12 inches or greater

This definition is the same as Definition B except the diameter of the pipe must be 12 inches or greater and no distinction is made for river crossings. Therefore, all pipelines of NPS 12 and greater were defined as mainline assets and all pipelines less than NPS 12 were defined as lateral assets. In this definition, as for Definition A, all storage facilities are defined as mainline.

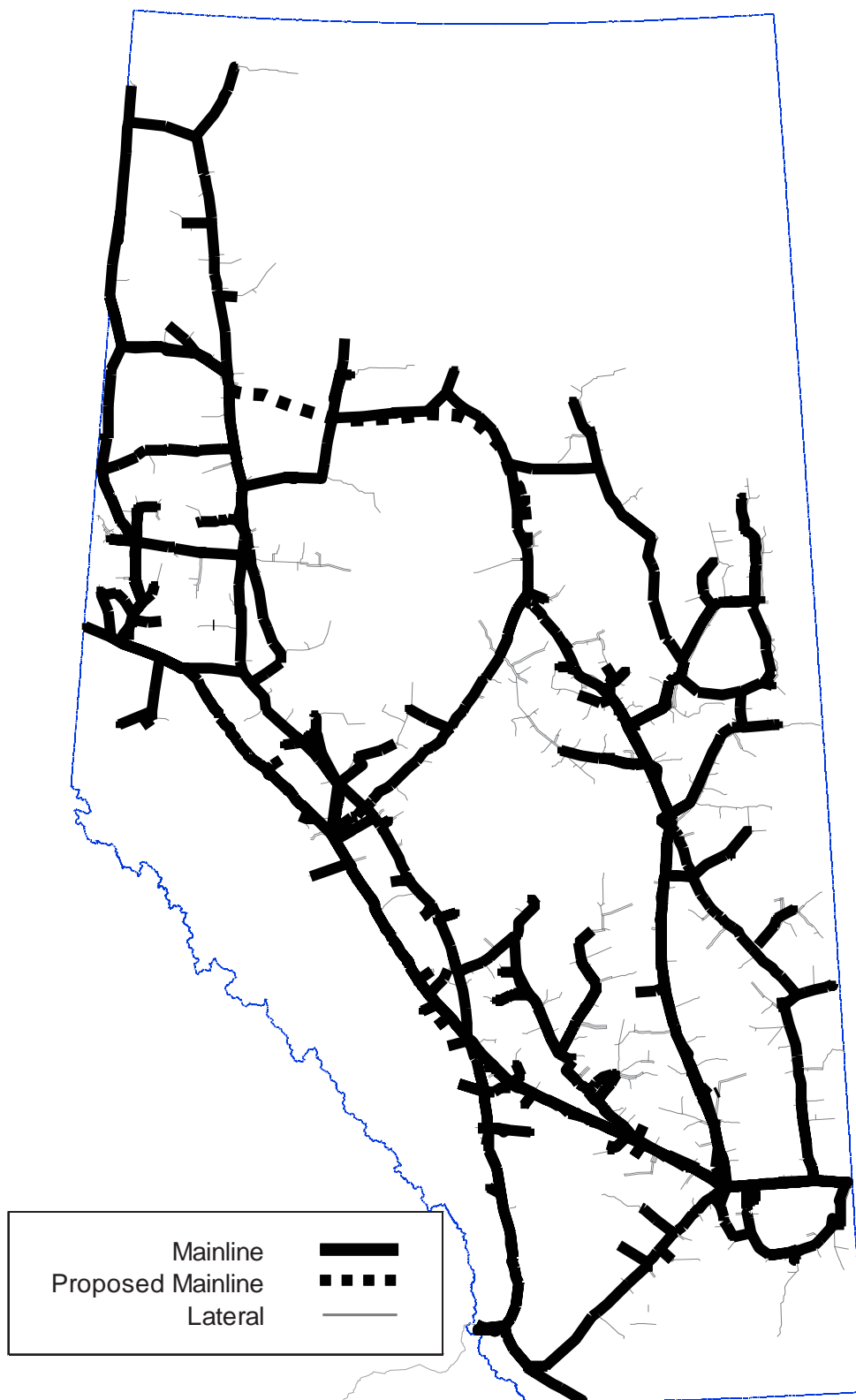
Definition A: Functional



Definition B: Physical size with a diameter of 24 inches or greater



Definition C: Physical size with a diameter of 12 inches or greater



1 APPENDIX D: COST OF HAUL STUDY 2002 CALENDAR YEAR



NOVA Gas Transmission Ltd.

**Cost of Haul Study
2002 Calendar Year**

November 2003

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5.1	COH Results for 2002
6.1	Comparison of COH and DOH Results

1. SUMMARY

The purpose of this cost of haul study ("COH Study") is to provide an indication of the relative cost of transporting gas between intra-Alberta and ex-Alberta deliveries for the Alberta System. This study is for the 2002 calendar year.

The results indicate that the average cost of haul for intra-Alberta deliveries is 67.9% of the average cost of haul for ex-Alberta deliveries. The intra-Alberta cost of haul to ex-Alberta cost of haul ratio is higher than the intra-Alberta distance of haul to ex-Alberta distance of haul ratio, which is 44.9%. This results from the fact that on average intra-Alberta deliveries utilize a higher percentage of smaller diameter, less cost efficient, pipe than ex-Alberta deliveries.

2. OBJECTIVES

The primary objective of this COH Study is to provide an indication of the relative cost of transporting gas between intra-Alberta and ex-Alberta deliveries. This COH Study incorporates two well accepted engineering/cost axioms as the basis for determining relative costs which are:

- unit costs increase with an increase in distance and
- unit costs decrease with an increase in pipe diameter

Distance is taken into account by tracking the flow of gas.

Diameter is taken into account by applying a relative cost index against the length of each pipe diameter that was used to transport the gas.

3. METHODOLOGY

For each month, a hydraulic simulation is performed to balance the gas received at each receipt point against the volume of gas delivered to each delivery point on the Alberta System. The flows are balanced based on the operating parameters and conditions employed on the Alberta System during that month. From this, the flow path from each receipt meter station to its associated downstream delivery stations can be determined. By reversing direction, the flow path to each delivery station can also be determined. Based on this hydraulic simulation, the costs of haul are calculated using the following steps:

- 1) The flow of gas is tracked in the reverse direction of the actual flow through all pipes from each delivery station to all upstream receipt stations that contribute flows to the delivery station. For each pipe in the system the following information is recorded:
 - the length and diameter of this pipe; and
 - the percent of volume at each downstream delivery station that was transported through this pipe. This is called the delivery station flow fraction. Each pipe gets a delivery station flow fraction for each downstream delivery station whose path it is in.
- 2) The cost of haul for a delivery station for the month is calculated by summing, for all pipes that have a delivery station flow fraction for that delivery station, the product of:
 - the length of the pipe;
 - the delivery station flow fraction; and
 - the unit cost index for this pipe diameter.

The monthly COH for the delivery station is recorded. This process is repeated for every delivery station for all 12 months.

- 3) The overall annual average COH for a delivery station is determined by:
- summing the product of the monthly COH and actual delivered volume (the “Relative Volume-Distance Cost”) over all 12 months and
 - dividing this sum by the actual delivery station volume for the year.

This process is repeated for each delivery station.

- 4) The average cost of haul for intra-Alberta deliveries and ex-Alberta deliveries is calculated by:
- summing the product of the overall annual COH and total yearly volume for all stations in each group and
 - dividing this sum by the actual total volume for the year for all stations in each group.

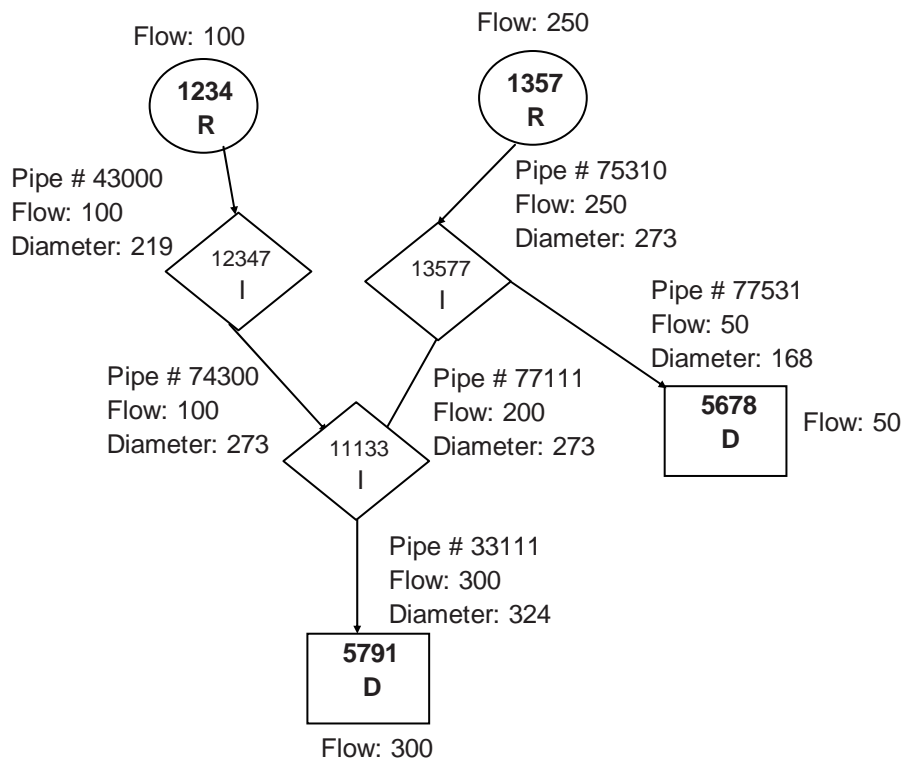
4. ILLUSTRATIVE EXAMPLE

The following is a detailed illustrative example of calculating the cost of haul for delivery stations in a simplified network. The actual delivery stations on the Alberta System have much more complex paths. Nevertheless, their COH is calculated in exactly the same way as described in this simplified example.

In this example the network is composed of two receipt meter stations (R) and two delivery stations (D). There are 6 pieces of pipe and three intermediate nodes (I) that join different pipes together. All stations, intermediate nodes and pipes have their unique identification number. Two of those intermediate nodes are junctions. For this example, assume that the following flows in 10^3m^3 occurred at those stations for the month of January:

Meter station number	Meter station type	Meter station flow in January
1234	R	100
1357	R	250
5678	D	50
5791	D	300

From the hydraulic simulation based on the above actual flows at the meter stations, the following schematic could be derived.



At this stage of the methodology the recording spreadsheet would look like Table #1.

Table #1

Pipe #	January flow
43000	100
74300	100
75310	250
77531	50
77111	200
33111	300

In Step 1 of the methodology, the length and diameter of each pipe and the delivery flow fractions for each delivery meter station at each pipe would be recorded. The flow fraction for a particular delivery station at a particular pipe is calculated as follows:

- Flow fraction = Sum of delivery station flow fraction on links leaving downstream node * flow on current link / sum of flows on all links entering downstream node.

For example, the delivery flow fraction for pipe 33111 for station 5791 is 1.0000 (or 100% of the flow) as it is the first pipe or link. The delivery flow fraction for pipe 77111 for station 5791 is $1.0000 \times (200 / (200 + 100)) = 0.6667$ and the delivery flow fraction for pipe 75310 for station 5791 is $0.6667 \times (250 / 250) = 0.6667$; that means that 67% of the volume for station 5791 flows through pipe 77111 and 75310 (the other 33% of the volume would come from a different path – pipes 43000 and 74300). At the end of Step 1 the recording spreadsheet for this example would look like Table #2.

Table #2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)/(7)
Delivery Station	Pipe #	D/S Node	Flow Fraction on Links Leaving D/S Node	Flow on Current Link	Links Entering D/S Node	Flows from Links Entering D/S Node	Flow Fraction
5791	33111	5791	1.0000	300	33111	300	1.0000
	77111	11133	1.0000	200	77111,74300	300	0.6667
	74300	11133	1.0000	100	77111,74300	300	0.3333
	43000	12347	0.3333	100	43000	100	0.3333
	77531	5678	0.0000	50	77531	50	0.0000
	75310	13577	0.6667	250	75310	250	0.6667
5678	33111	5791	0.0000	300	33111	300	0.0000
	77111	11133	0.0000	200	77111,74300	300	0.0000
	74300	11133	0.0000	100	77111,74300	300	0.0000
	43000	12347	0.0000	100	43000	100	0.0000
	77531	5678	1.0000	50	77531	50	1.0000
	75310	13577	1.0000	250	75310	250	1.0000

To calculate the cost of haul, described in Step 2, a cost index is multiplied by the flow fraction and length for each pipe. The cost index is based on historical costs for different pipe diameters and is derived by calculating a unit cost for each pipe size relative to the largest pipe diameter. This is the index used in determining the receipt point rates in accordance with the methodology approved by the EUB in Decision 2000-6. The relative cost index for each pipe diameter for 2002 is shown below.

<u>Outside Diameter (mm)</u>	<u>Cost Index</u>
114	62.87
168	24.03
219	14.34
273	9.73
324	6.91
356	6.36
406	5.10
457	4.26
508	3.49
559	3.15
610	1.77
660	1.64
711	1.52
762	1.42
864	1.23
914	1.16
1067	1.17
1219	1.00

All the information required to calculate the cost of haul for each delivery station for the illustrative month of January is now available. The product of the cost index, length and flow fraction is then summed for all pipes in the path to determine a total cost of haul for each station. After step 2 of the methodology, for the month of January, the recording spreadsheet would look like Table #3.

Table #3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(4)*(5)*(6)	(9)=(4)*(5)*(7)
<u>Pipe #</u>	<u>January flow</u>	<u>Outside Diameter (mm)</u>	<u>Cost Index</u>	<u>Length in km</u>	<u>Delivery 5678 flow fractions</u>	<u>Delivery 5791 flow fractions</u>	<u>COH for 5678 in km</u>	<u>COH for 5791 in km</u>
43000	100	219	14.34	2	0.0000	0.3333	-	9.6
74300	100	273	9.73	5	0.0000	0.3333	-	16.2
75310	250	273	9.73	10	1.0000	0.6667	97.3	64.9
77531	50	168	24.03	3	1.0000	0.0000	72.1	-
77111	200	273	9.73	15	0.0000	0.6667	-	97.3
33111	300	324	6.91	5	0.0000	1.0000	-	34.6
					Total Cost of Haul		169.4	222.5

The COH calculations for the remaining months (February to December) would be done exactly the same way as demonstrated above. For this example assume that at the end of the year, the monthly results have been obtained for station 5678 as shown in columns 2 to 4 and station 5791 as shown in columns 5 to 7 of Table #4. By following Step 3, the overall volume weighted average annual COH for each delivery station can be derived as shown at the bottom of Table #4. It should be noted that the COH for meter station 5678 is not volume dependent, so will be 169.4 for all months as only gas from receipt meter station 1357 via pipe 75310 (COH = 97.3) and pipe 77531 (COH = 72.1) is physically available. The COH for station 5791 is volume dependant and does change from month to month as flow fractions for pipe in the station's path change.

Table #4

(1)	(2)	(3)	(4)=(2)*(3)	(5)	(6)	(7)=(5)*(6)
	Meter Station 5678			Meter Station 5791		
	Delivery Volume	COH	Relative Volume- Distance Cost	Delivery Volume	COH	Relative Volume- Distance Cost
Jan	50	169.4	8,469.2	300	222.5	66,748.0
Feb	75	169.4	12,703.8	350	213.2	74,628.0
Mar	75	169.4	12,703.8	400	223.4	89,368.2
Apr	50	169.4	8,469.2	350	185.4	64,893.9
May	50	169.4	8,469.2	300	208.6	62,576.3
Jun	50	169.4	8,469.2	300	208.6	62,576.3
Jul	-	-	-	320	213.2	68,231.3
Aug	50	169.4	8,469.2	340	222.5	75,647.8
Sep	50	169.4	8,469.2	350	224.3	78,521.6
Oct	50	169.4	8,469.2	300	210.4	63,132.5
Nov	50	169.4	8,469.2	310	197.5	61,213.5
Dec	50	169.4	8,469.2	310	207.7	64,374.8
Total	600		101,630.4	3,930		831,912.1
Annual Average		169.4			211.7	

In accordance with Step 4, the volume-weighted average annual cost of haul for all delivery stations, which in this example is two delivery stations, would be calculated as follows:

$$(169.4 * 600 + 211.7 * 3,930) / (600 + 3,930) = 206.1$$

5. RESULTS

Table 5.1 contains the COH results for 2002. The average cost of haul for:

- intra-Alberta deliveries was 635.6; and
- ex-Alberta deliveries was 936.4.

For 2002, the average cost of haul for intra-Alberta deliveries is 67.9% of the average cost of haul for ex-Alberta deliveries.

TABLE 5.1
COH RESULTS FOR 2002

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	2002
Aver. Intra-Alberta COH	607	632	631	655	636	654	635	629	624	630	664	636	635.6
Aver. Ex-Alberta COH	886	913	912	974	1001	990	981	964	958	919	901	848	936.4
Aver. Ex-Alberta to Intra-Alberta Ratio	1.5:1	1.4:1	1.4:1	1.5:1	1.6:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	1.4:1	1.3:1	1.5:1
Aver. Intra-Alberta to ex-Alberta Ratio	68%	69%	69%	67%	64%	66%	65%	65%	65%	69%	74%	75%	67.9%

6. DIFFERENCES BETWEEN THE COH AND DOH STUDIES

Table 6.1 compares the results of the COH Study and the DOH Study. The ratio of the average intra-Alberta DOH to the average ex-Alberta DOH is lower than the ratio of the average intra-Alberta COH to the average ex-Alberta COH. The DOH ratio shows that intra-Alberta deliveries travel on average 44.9% of the distance that ex-Alberta deliveries travel. The COH ratio shows that on average intra-Alberta deliveries cost 67.9% of what ex-Alberta deliveries cost. This results from the fact that on average intra-Alberta deliveries utilize a higher percentage of smaller diameter, less cost efficient, pipe than ex-Alberta deliveries.

TABLE 6.1
COMPARISON OF COH AND DOH RESULTS

	2002 Revised DOH Study Results	2002 COH Study Results	Difference in Ratios
Aver. Intra-Alberta distance/cost	255.8	635.8	
Aver. ex-Alberta distance/cost	569.4	936.4	
Aver. Ex-Alberta to Intra-Alberta Ratio	2.2:1	1.5:1	
Aver. Intra-Alberta to ex-Alberta Ratio	44.9%	67.9%	+23.0 percentage points

7. APPENDIX – COH FOR EACH DELIVERY STATION

COH for Ex-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
1250	UNITY BORDER	328,909	767.7	252,508,039
1417	COLD LAKE BDR	288,330	491.0	141,565,554
1958	EMPRESS BORDER	58,917,880	972.8	57,314,008,298
2001	ABC SALES #1	10,971,008	772.8	8,478,403,968
2002	ALBERTA-MONTANA	96,193	452.5	43,530,530
2004	ABC SALES #2	10,990,813	759.7	8,350,106,978
3886	GORDONDALE BDR	18,743	471.8	8,843,668
6404	MCNEILL BORDER	21,910,898	1,028.2	22,528,584,301
8002	ESTHER DELIVERY	51,243	238.4	12,215,328
8003	MERIDIAN LK DLV	158,530	7.6	1,199,995
	Subtotal for ex-Alberta deliveries	103,732,548	936.4	97,130,966,659

COH for Intra-Alberta Deliveries:

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
2360	COCHRANE EXTRCT	1,385,864	609.0	844,023,519
3050	SARATOGA SALES	4,768	661.8	3,155,770
3051	SIMONETTE SALES	658	0.4	265
3052	COLEMAN SALES	4,439	768.3	3,410,514
3053	SUNDRE SALES	5,187	474.3	2,460,197
3058	LUNDBRECK-COWLE	1,247	356.1	444,139
3059	ALLISON CRK SLS	6,152	767.3	4,720,119
3060	CARROT CREEK SL	10,943	658.6	7,206,988
3061	PEMBINA SALES	30,835	389.2	12,001,442
3062	E. CALGARY B SL	42,001	1.5	64,077
3063	VIRGINIA HLS SL	2,328	288.1	670,639
3065	RAT CREEK SALES	-	-	-
3067	BIGSTONE SALES	4,840	102.2	494,604
3068	BEAVER HILL SLS	27	339.9	9,178
3069	WILSON CRK S SL	4,114	94.0	386,571
3071	CYNTHIA SALES	-	-	-
3072	PADDY CREEK SLS	48,820	34.4	1,677,013
3073	PRIDDIS SALES	26,542	619.0	16,428,893
3074	WATERTON SALES	205,154	0.0	3,628
3076	RAINBOW SALES	96	1.5	146
3077	FIRE CREEK SALE	6,165	1,048.6	6,464,612
3078	JUDY CREEK SALE	-	-	-
3080	LOUISE CREEK SL	1,230	287.8	354,116
3082	ELK RIVER S SLS	-	-	-
3083	RAINBOW LK SLS	-	-	-

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3085	DEEP VLLY CR SL	4,936	0.6	3,098
3086	PINE CREEK SLS	5,275	227.4	1,199,671
3087	GOLD CREEK SLS	11,875	129.1	1,532,590
3088	VALHALLA SALES	3,000	398.2	1,194,372
3089	QUIRK CREEK SLS	-	-	-
3091	OUTLET CREEK SL	127	28.3	3,593
3092	MOOSEHORN R SLS	22,198	244.6	5,428,798
3093	HARMATTAN-LEDUC	-	-	-
3094	BRAZEAU N SALES	101	471.2	47,358
3095	SAKWATAMAU SALE	24,301	217.9	5,295,604
3097	CHICKADEE CK SL	22,764	225.3	5,127,674
3098	DUTCH CREEK SLS	-	-	-
3099	SOUSA CRK E SLS	5,382	35.5	191,077
3100	HEART RIVER SLS	12,035	0.9	10,459
3101	CAROLINE SALES	204	615.2	125,369
3103	VIRGO SALES	4,173	98.2	409,903
3105	CRANBERRY LK SL	120,265	487.1	58,579,178
3106	CARMON CREEK SL	224	629.8	141,007
3107	FERGUSON SALES	36,225	658.4	23,848,814
3109	CALDWELL SALES	4,225	256.7	1,084,678
3110	MARSH HD CR W S	6,345	585.2	3,712,852
3111	MINNOW LK S. SL	1,825	134.4	245,331
3112	FALHER SALES	24,539	630.2	15,464,030
3113	TWINLAKES CK SL	89	558.4	49,531
3114	WEMBLEY SALES	37,391	364.2	13,618,994
3115	USONA SALES	32,555	51.2	1,667,983
3117	GRIZZLY SALES	31,849	163.8	5,215,783
3118	GILBY N#2 SALES	189	9.8	1,846
3119	DEADRICK CK SLS	4,626	140.3	649,228
3120	MILDRED LK SLS	1,149,307	932.7	1,071,927,538
3123	MILDRED LK #2 S	330,957	945.8	313,034,602
3124	DEEP VY CK S SL	111	0.5	53
3125	HUGGARD CREEK S	15,959	733.3	11,703,010
3300	OTAUWAW SALES	1,487	147.4	219,123
3301	SAULTEAUX SALES	374	276.1	103,303
3304	FORESTBURG SLS	6,922	1,135.9	7,862,545
3305	CHIGWELL N. SLS	3,731	0.7	2,720
3368	NOEL LAKE SALES	44,642	676.3	30,191,649
3405	RIM-WEST SALES	162,993	0.1	9,512
3406	REDWATER SALES	61,053	666.1	40,669,287
3410	VIKING SALES	53,465	249.1	13,317,819
3411	MONARCH N. B SL	2,043	0.4	904
3412	WAYNE N B SALES	19,821	1.3	26,313
3413	ATMORE B SALES	-	-	-
3414	HANNA S B SALES	9,358	1,275.6	11,937,900
3416	COUSINS A SALES	-	-	-
3418	COUSINS C SALES	1,284	348.4	447,182
3419	INLAND SALES	740,188	1,101.9	815,591,802

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3421	WIMBORNE SALES	-	-	-
3422	THORHILD SALES	3,668	0.9	3,309
3423	BASHAW WEST SLS	482	584.0	281,708
3424	GRANDE CENTRE S	20,298	201.4	4,087,147
3425	WOOD RVR SALES	61,876	495.4	30,656,252
3427	WESTLOCK SALES	3,152	1.9	6,086
3429	ST. PAUL SALES	19,514	452.6	8,832,587
3430	FERINTOSH SALES	1,312	375.0	492,191
3432	PETRO GAS PLANT	959,558	937.4	899,516,296
3434	AMOCO INLET	1,538,542	1,025.5	1,577,702,760
3435	PAN CAN INLET	311,093	1,006.4	313,084,479
3437	HARMATTAN SALES	735	730.4	536,963
3438	REDWATER B SL	27,452	792.9	21,766,007
3439	SHEERNESS SALES	8,458	1,270.8	10,747,897
3440	PROGAS PLANT	195,940	973.1	190,677,162
3444	PINCHER CRK SLS	7,381	415.7	3,068,703
3445	KAKWA SALES	-	-	-
3446	BITTERN LAKE SL	57,663	663.9	38,283,037
3448	ROSS CREEK SLS	88,302	507.2	44,787,868
3449	FLEET SALES	3,121	136.9	427,245
3453	GREEN GLADE SLS	-	-	-
3454	PENHOLD N SALES	157,613	200.3	31,569,693
3456	ELK POINT SALES	13,723	51.3	703,426
3457	MITISUE SALES	-	-	-
3458	COUSINS B SALES	914,728	332.0	303,657,672
3460	LANDON LAKE SLS	5,362	4.5	24,180
3462	NIPISI SALES	-	-	-
3464	GREENCOURT W SL	17,845	80.2	1,431,374
3465	DEMMITT SALES	321	125.4	40,203
3467	KILLAM SALES	-	-	-
3468	BLEAK LAKE SLS	13,388	505.9	6,773,613
3469	EVERGREEN SALES	388	0.9	366
3470	NOSEHILL CRK SL	11,366	275.1	3,126,897
3471	BLUE RIDGE E SL	49,463	22.4	1,106,704
3472	INNISFAIL SALES	1,423	276.7	393,581
3474	LLOYD CREEK SLS	-	-	-
3476	LAC LA BICHE SL	3,307	433.9	1,435,063
3477	RICINUS S SALES	-	-	-
3478	ONETREE SALES	22,076	0.9	19,184
3479	NOSEHILL CRK N.	5,135	592.4	3,041,850
3481	SAWRIDGE SALES	33,746	7.8	262,272
3482	LONE PINE CK SL	14,844	1.3	19,176
3483	CRAMMOND SALES	19	0.1	2
3484	CARIBOU LAKE SL	-	-	-
3485	SHORNCLIFFE CRK	-	-	-
3486	WESTERDALE SLS	3,685	7.3	26,737
3488	ARDLEY SALES	12,035	729.3	8,777,208
3489	ATUSIS CREEK SL	40,033	805.6	32,252,315

Unit Number	Unit Name	Annual Volume (e3m3)	COH	Relative Volume-Distance Cost
3490	GAETZ LAKE SLS	6,858	0.6	4,312
3491	JOFFRE SLS #2	370,051	335.4	124,125,660
3492	JOFFRE SLS #3	512,374	335.8	172,057,127
3493	MEYER B SALES	-	-	-
3494	SILVER VLY SLS	842	660.8	556,153
3495	CAVALIER SALES	477	0.1	34
3496	CHIPEWYAN RIVER	84,750	343.5	29,112,022
3497	SUNDAY CREEK SO	13,794	0.9	11,987
3562	AMOCO SALES TAP	28	375.9	10,374
3600	STORNHAM COULEE	9,661	539.6	5,213,256
3604	MARGUERITE L SL	59,325	312.2	18,521,120
3605	LEMING LAKE SLS	1,081,080	294.7	318,573,130
3606	LOSEMAN LAKE SL	287,190	185.4	53,235,077
3609	SARRAIL SALES	49,720	413.7	20,570,930
3610	RANFURLY SALES	80,007	667.2	53,377,593
3611	HERMIT LAKE SLS	119,689	496.9	59,469,603
3612	CONKLIN W SALES	44,014	358.1	15,763,330
3613	SHANTZ SALES	1,665	305.7	508,876
3615	HAYNES SALES	8,011	341.7	2,737,109
3616	GAS CITY SALES	19,051	537.1	10,233,017
3618	JENNER EAST SLS	4,479	974.9	4,365,889
3621	LOSEMAN LK SL#2	21,175	185.8	3,934,056
3622	CHEECHAM W. SLS	13,378	358.2	4,791,966
3623	FERINTOSH N. SL	380	765.7	290,753
3624	GODS LAKE SALES	28	844.7	23,313
3626	MIRAGE SALES	-	-	-
3632	EAST CALGARY SA	5,115	0.2	1,229
3633	RUTH LK SLS	34,434	1,067.3	36,752,389
3634	CANOE LAKE SALE	859	0.7	563
3635	ROD LAKE SALES	1,746	352.5	615,564
3637	RUTH LK SLS #2	147	1,120.2	164,443
3639	VEGREVILLE SALE	2,229	1,052.4	2,345,695
3884	COALDALE S. JCT	4,198	143.8	603,781
3885	CHIP LAKE JCT	5,370	0.6	3,376
5007	HOUSE RIVER	198,788	456.7	90,780,134
5024	CROW LAKE SALES	8,469	425.9	3,606,685
6903	MCNEILL A UTIL	61	996.3	60,574
8000	BATTLE LAKE DVY	14,587	726.5	10,597,748
	Subtotal for Intra-Alberta deliveries	12,504,891	635.6	7,948,508,593

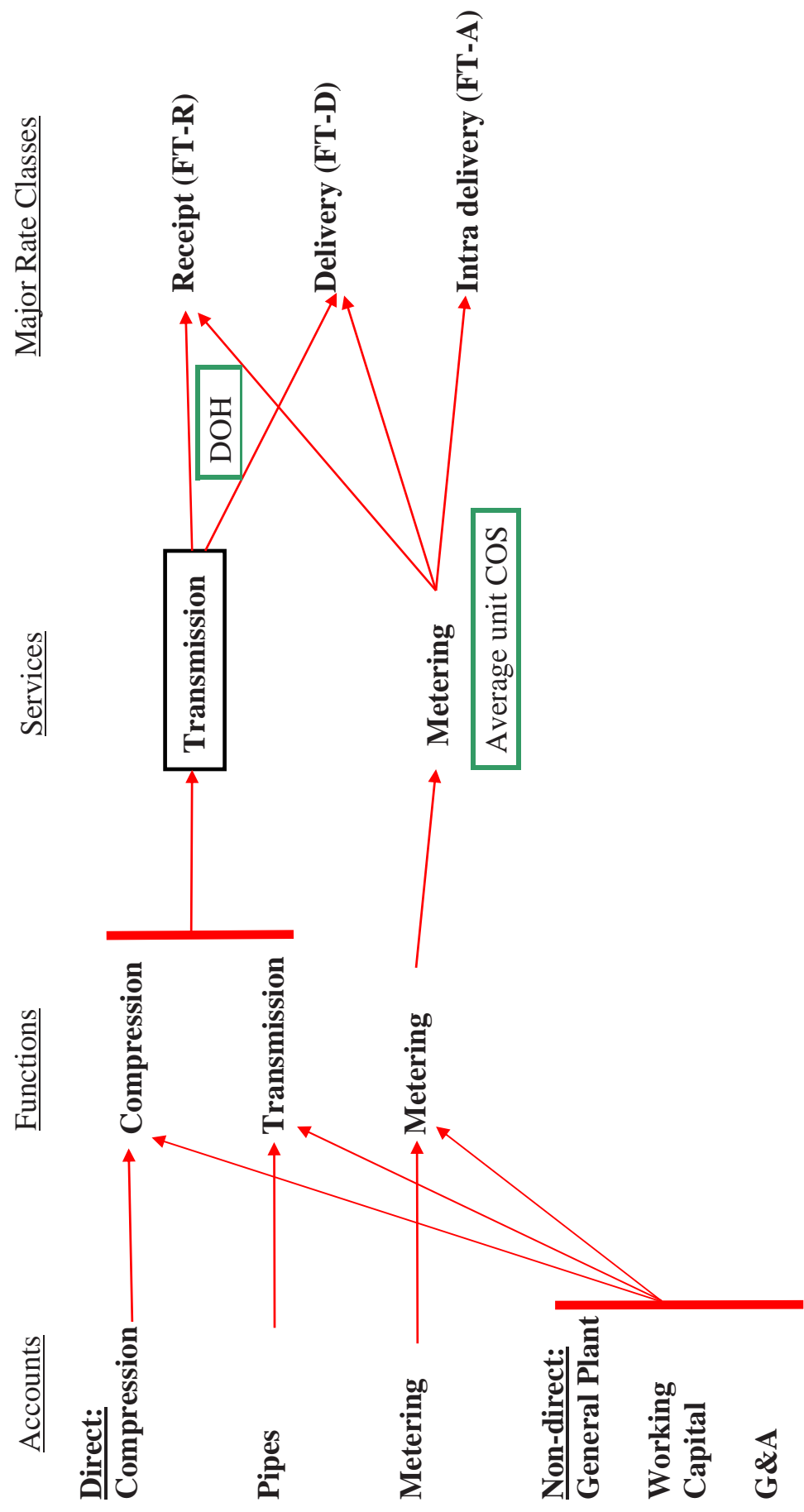
APPENDIX E: COST OF SERVICE RESULTS UTILIZING DOH – REVISED METHODOLOGY

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

DOH – Revised Methodology
Diagram 1

Overview of Cost Allocations



**DOH – Revised Methodology
 Table 1**

<u>Summary of Transmission Assets</u> (\$ million)		
	<u>Net Book Value</u>	<u>Length (miles)</u>
Transmission	3,207.4	14,103.0
		<u>Total Cost</u>
		1,184.7

Note: Net Book Value at December 31, 2002

DOH – Revised Methodology
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
Operating Return	95.8	317.8	34.8	448.5
Depreciation	69.5	155.7	14.3	239.5
Municipal Tax	4.5	57.3	2.0	63.9
Income Tax	35.0	116.0	12.7	163.7
TBO	-	79.2	-	79.2
Maintenance	<u>49.5</u>	<u>12.7</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>738.7</u>	<u>93.3</u>	<u>1,086.4</u>

DOH – Revised Methodology Table 3

General Plant, Working Capital and G&A ⁽¹⁾	<u>Summary of Non-Direct Costs</u> (\$ million)			
	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
General Operating Assets	9.0	2.6	2.7	14.3
Calgary Offices	3.4	11.4	1.3	16.1
Field/Service Centres, Vehicles	12.8	3.8	9.0	25.7
Patrol	-	0.5	-	0.5
Information Technology	5.1	16.9	22.3	44.2
General plant total	30.4	35.3	35.2	100.8
Cash Working Capital	5.0	16.6	1.8	23.5
Material & Supplies Inventory	3.0	0.8	0.3	4.1
Linepack Gas	-	3.5	-	3.5
Unamortized Debt Issue Costs	0.9	3.1	0.3	4.4
Working capital total	9.0	24.1	2.5	35.6
Information Technology	2.9	9.5	12.5	24.9
Customer Service	1.5	4.9	9.3	15.6
Other Departments	3.1	10.4	1.1	14.7
General Expenses	12.4	41.2	4.5	58.2
Other Expenses	1.6	5.4	0.6	7.6
G&A total	21.5	71.4	28.0	121.0
Total General plant, Working capital & G&A	60.9	130.7	65.7	257.4

Allocated amounts less than \$100,000 are shown as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

DOH – Revised Methodology
Table 4

Summary of Total Costs (\$ million)					
	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service
Compression	254.4	60.9	315.3	-315.3	0.0
Transmission	738.7	130.7	869.4	315.3	1,184.7
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>

DOH – Revised Methodology Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

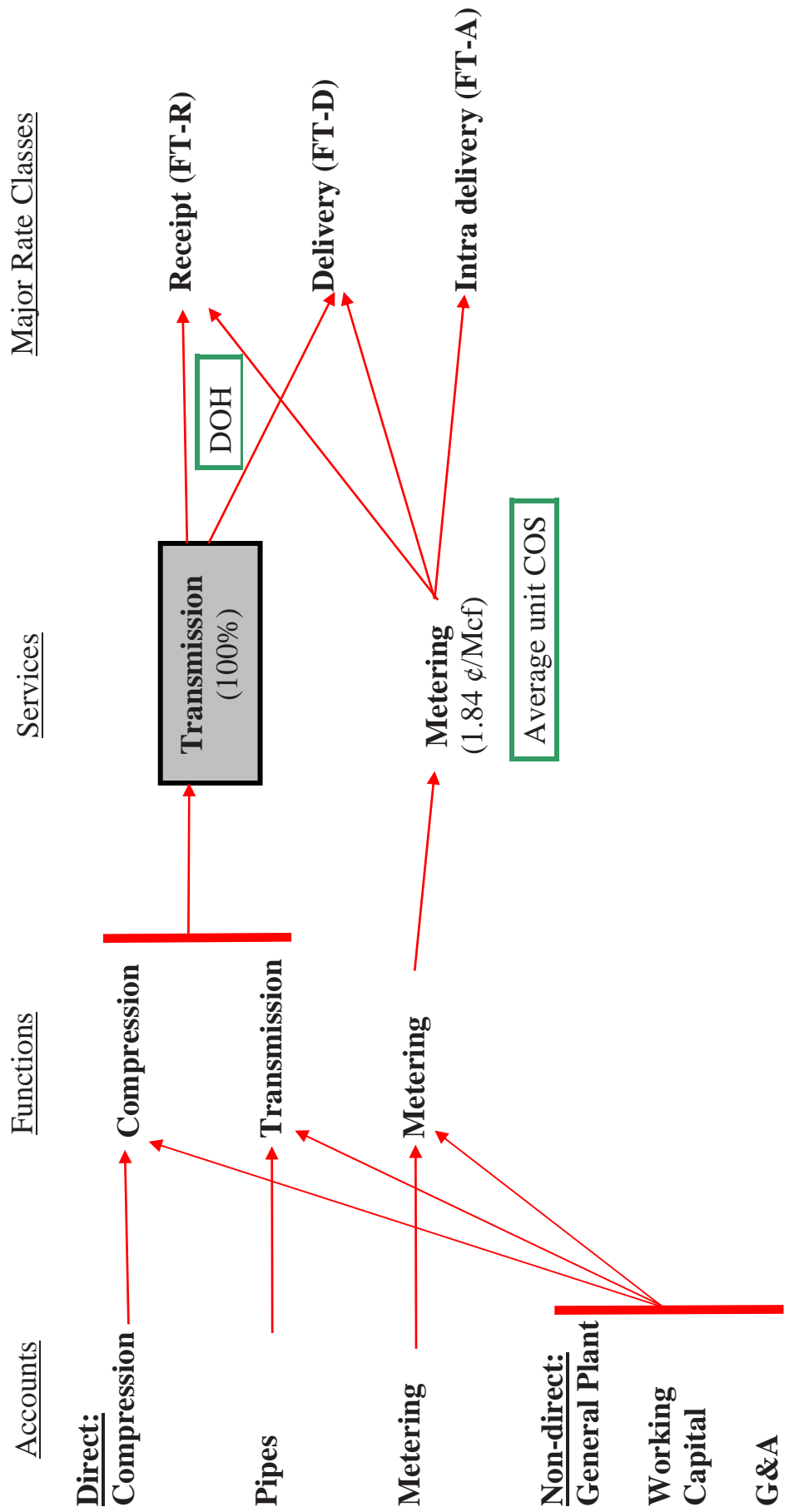
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

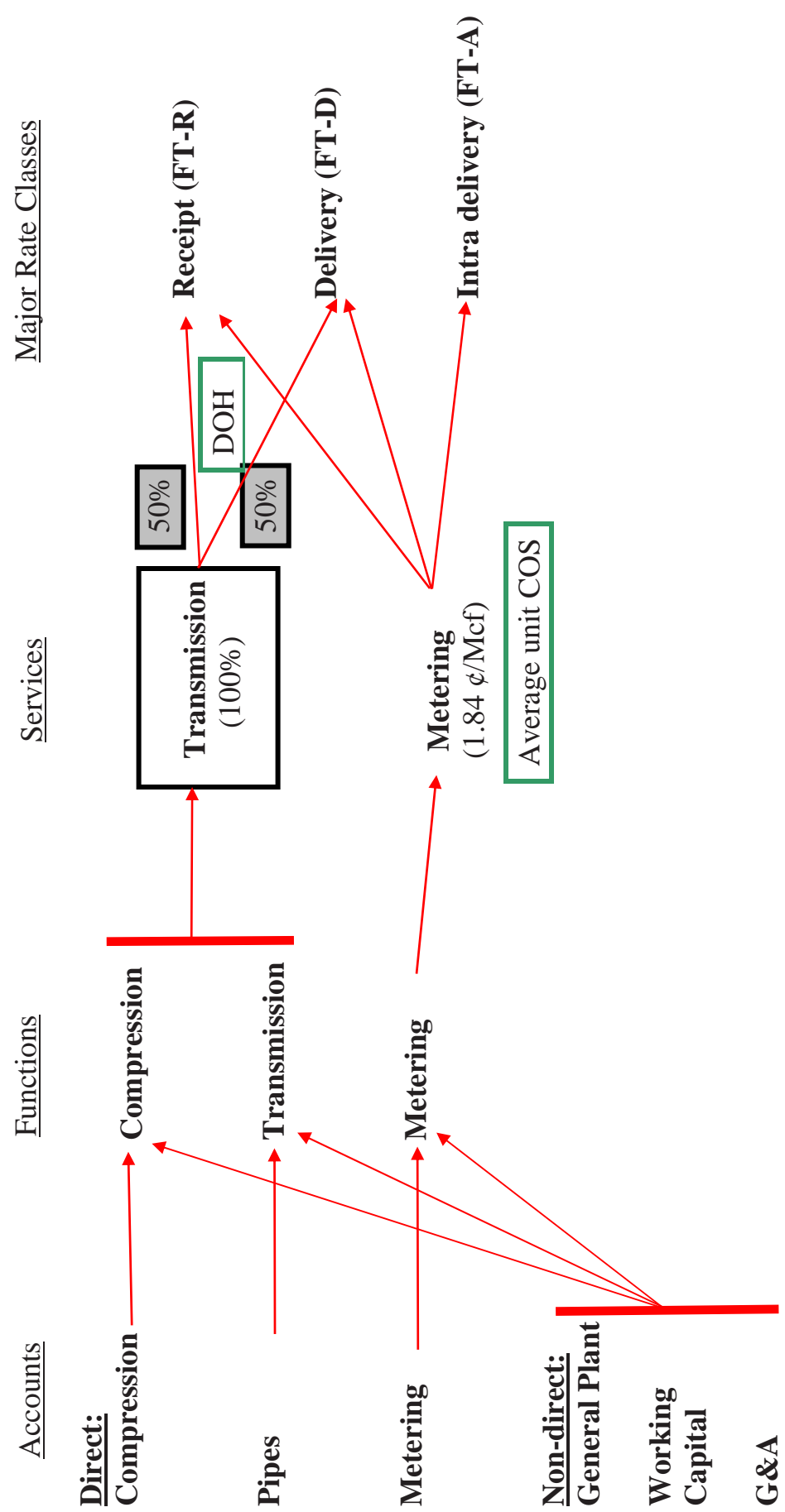
DOH – Revised Methodology
Diagram 2

Results of Cost Allocations



DOH – Revised Methodology
Diagram 3

Application of Cost Allocations to Rates Determination



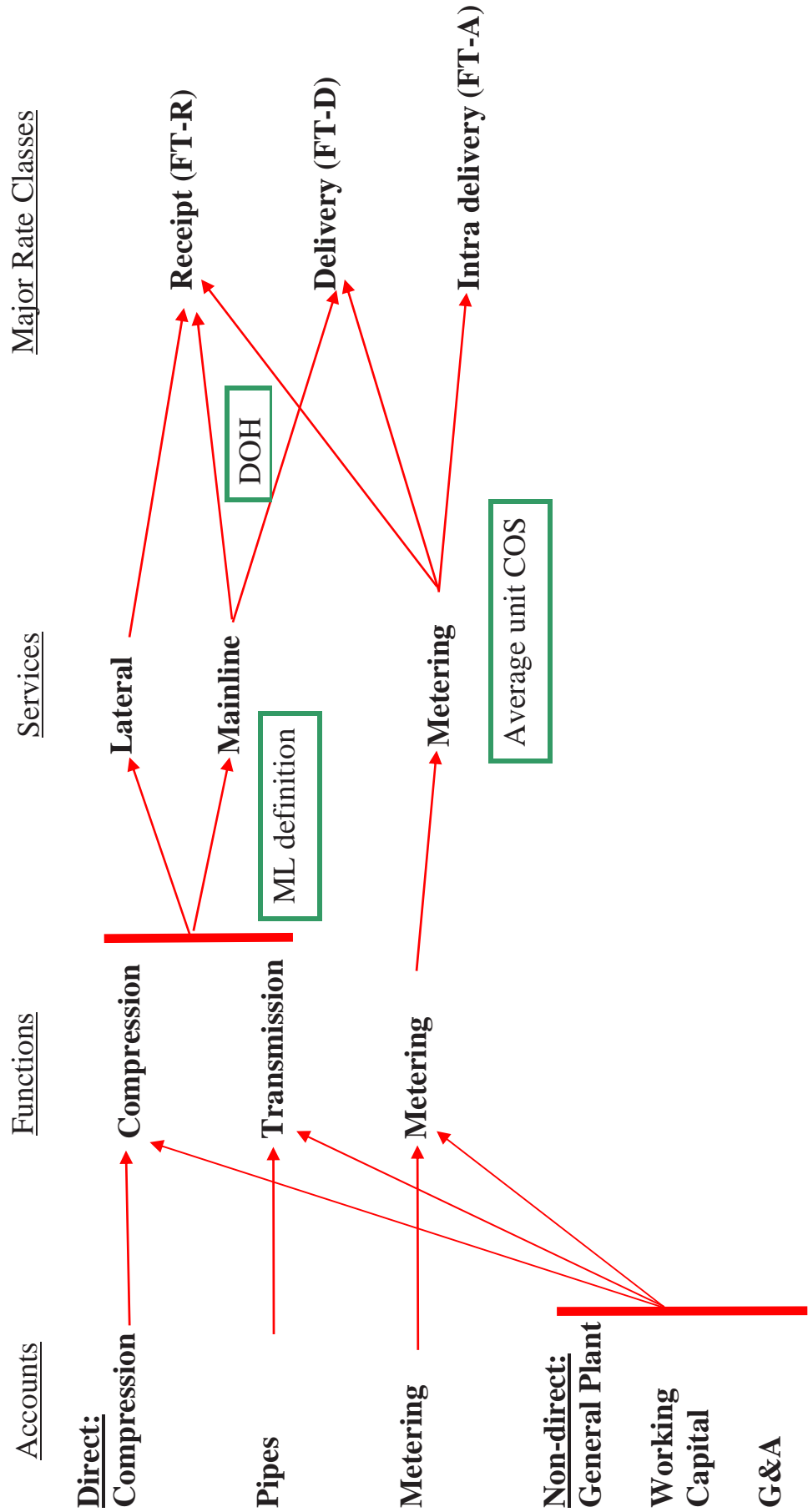
APPENDIX F: COST OF SERVICE RESULTS UTILIZING DOH – ALTERNATIVE 1(A)

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

DOH - Functional Mainline Definition - Alternative 1(a)
Diagram 1

Overview of Cost Allocations



DOH - Functional Mainline Definition – Alternative 1(a)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)		
	<u>Net Book Value</u>	<u>Length (miles)</u>
Mainline	2,458.1	6,929
Lateral	<u>749.2</u>	<u>7,174</u>
Total	<u><u>3,207.4</u></u>	<u><u>14,103</u></u>
		<u><u>930.6 929.9</u></u>
		<u><u>254.1 254.8</u></u>
		<u><u>1,184.7</u></u>

Note: Net Book Value is as at December 31, 2002

DOH - Functional Mainline Definition – Alternative 1(a)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	243.6	74.2	34.8	448.5
Depreciation	69.5	116.6	39.1	14.3	239.5
Municipal Tax	4.5	42.6	14.7	2.0	63.9
Income Tax	35.0	88.9	27.1	12.7	163.7
TBO	-	78.5	0.7	-	79.2
Maintenance	<u>49.5</u>	<u>6.1</u>	<u>6.6</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>576.1</u>	<u>162.5</u>	<u>93.3</u>	<u>1,086.4</u>

DOH - Functional Mainline Definition – Alternative 1(a)
Table 3

Summary of Non-Direct Costs

General Plant, Working Capital and G&A	(1)				
	Compression	Transmission		Metering	Total
		Mainline	Lateral		
General Operating Assets	9.0	1.3	1.4	2.7	14.3
Calgary Offices	3.4	5.6	5.9	1.3	16.1
Field/Service Centres, Vehicles	12.8	1.9	2.0	9.0	25.7
Patrol	-	0.2	0.2	-	0.5
Information Technology	5.1	8.2	8.7	22.3	44.2
General plant total	30.4	17.1	18.1	35.2	100.8
Cash Working Capital	5.0	8.1	8.6	1.8	23.5
Material & Supplies Inventory	3.0	0.4	0.4	0.3	4.1
Linepack Gas	-	1.7	1.8	-	3.5
Unamortized Debt Issue Costs	0.9	1.5	1.6	0.3	4.4
Working capital total	9.0	11.7	12.4	2.5	35.6
Information Technology	2.9	4.6	4.9	12.5	24.9
Customer Service	1.5	2.4	2.5	9.3	15.6
Other Departments	3.1	5.1	5.4	1.1	14.7
General Expenses	12.4	20.0	21.2	4.5	58.2
Other Expenses	1.6	2.6	2.8	0.6	7.6
G&A total	21.5	34.7	36.7	28.0	121.0
Total General plant & Working capital	60.9	63.5	67.2	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

DOH - Functional Mainline Definition - Alternative 1(a)
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service	Transmission Costs Split
Compression	254.4	60.9	315.3	-315.3	0.0	
Mainline	576.1	63.5	639.7	290.3	929.9	79%
Lateral	162.5	67.2	229.8	25.0	254.8	21%
Metering	93.3	65.7	159.1	0.0	159.1	
Totals	1,086.4	257.4	1,343.8	0.0	1,343.8	

DOH –Functional Mainline Definition - Alternative 1(a) Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

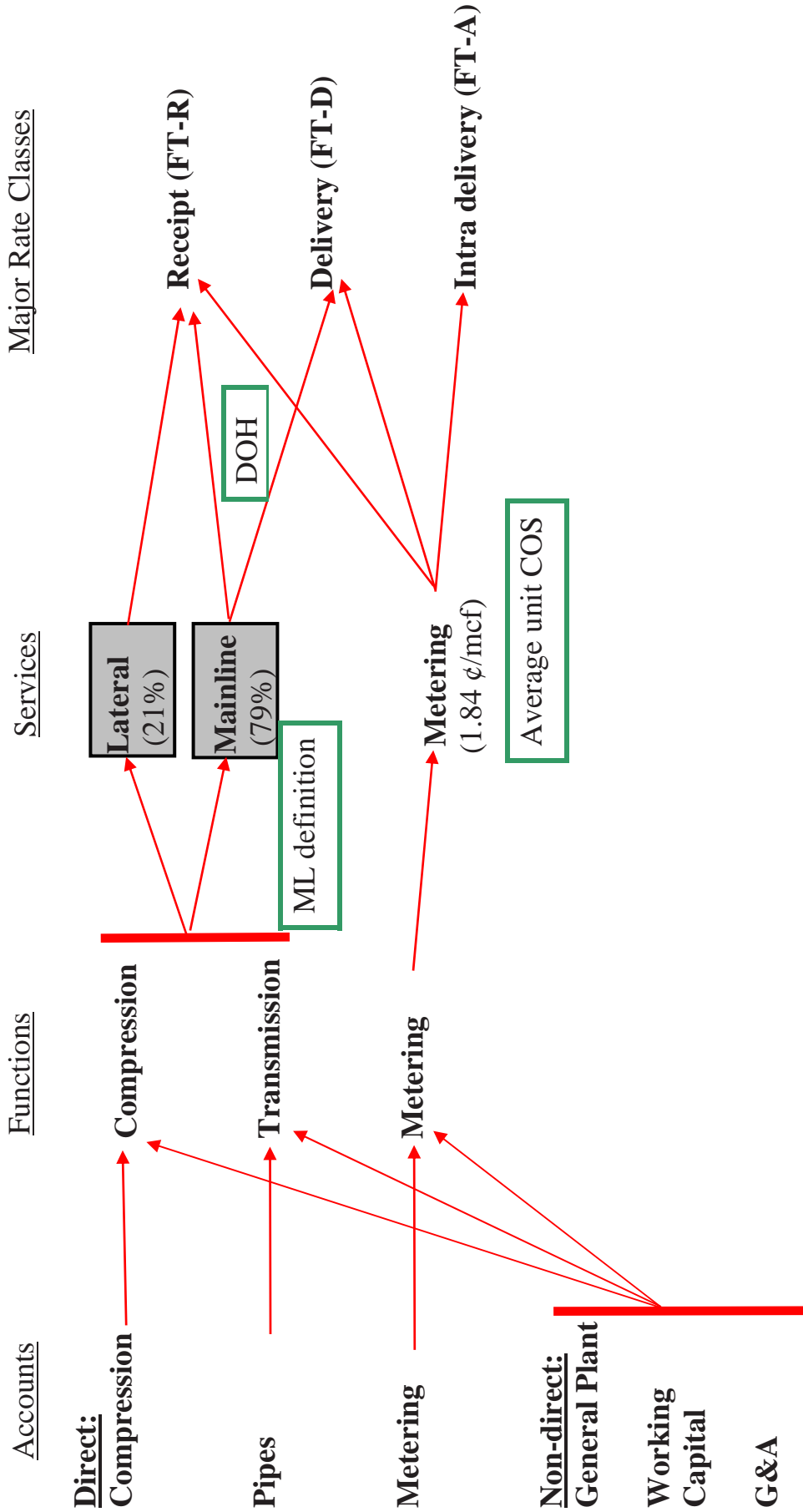
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

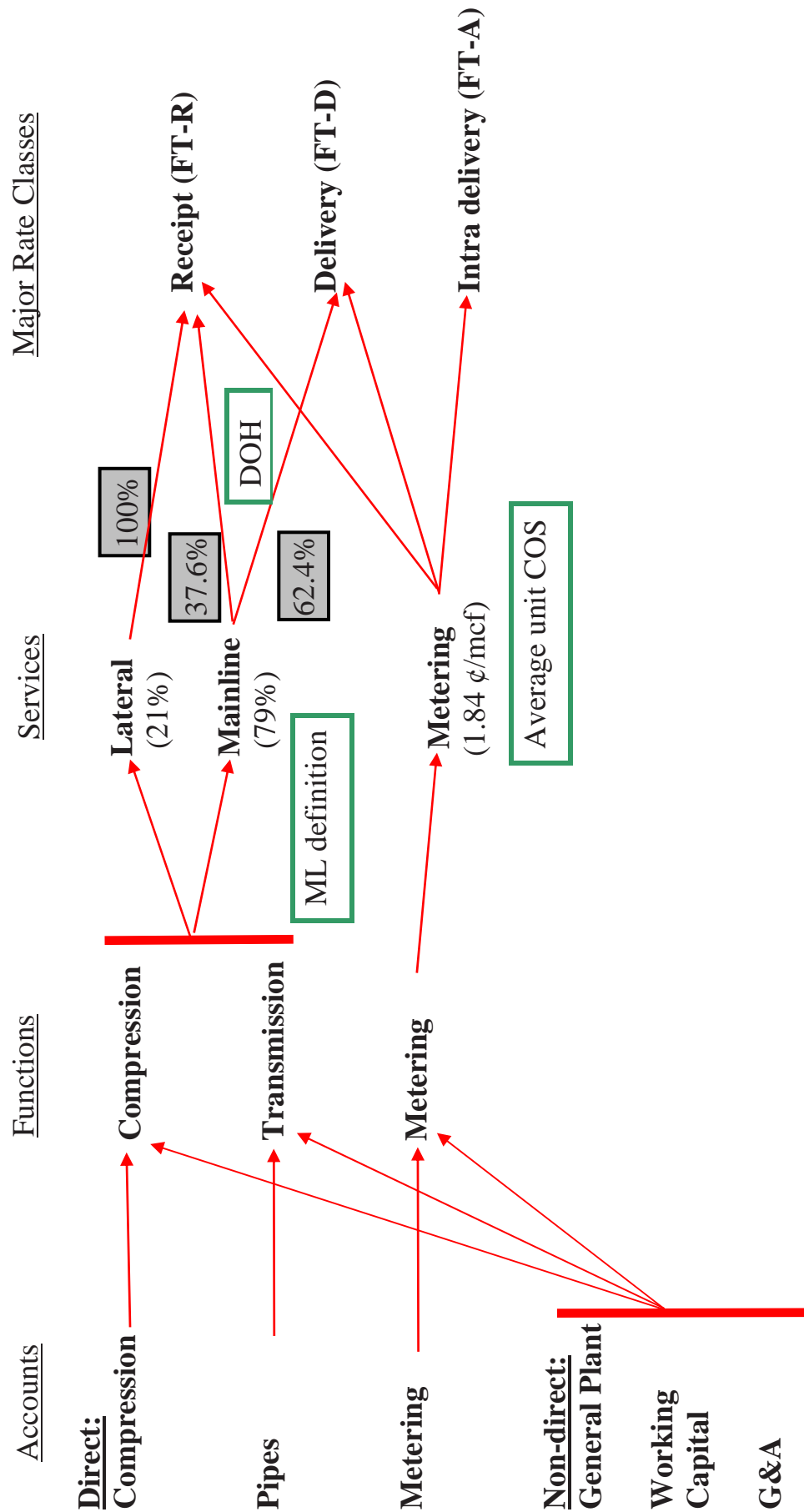
DOH - Functional Mainline Definition - Alternative 1(a)
Diagram 2

Results of Cost Allocations



DOH - Functional Mainline Definition - Alternative 1(a)
Diagram 3

Application of Cost Allocations to Rates Determination



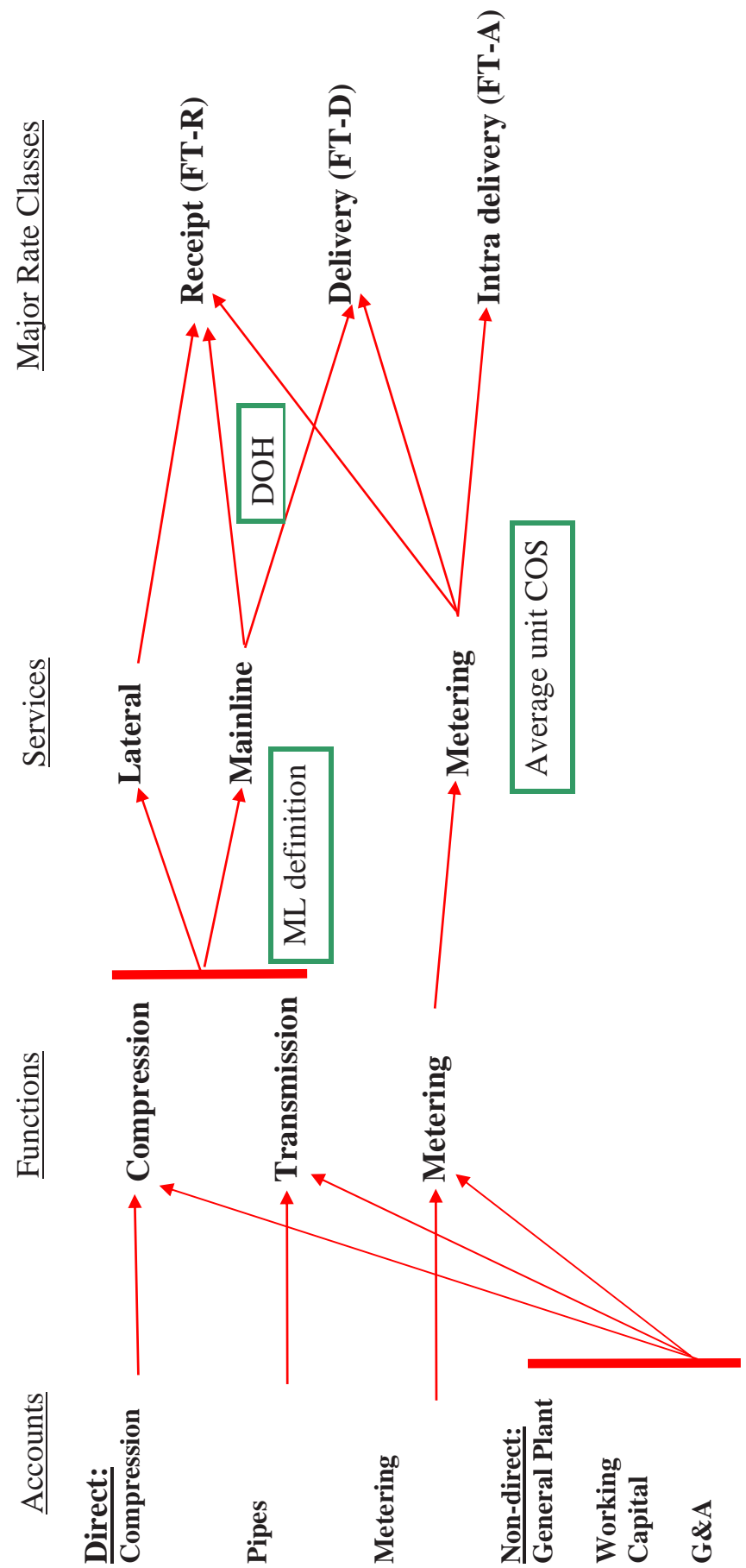
APPENDIX G: COST OF SERVICE RESULTS UTILIZING DOH – ALTERNATIVE 1(B)

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

DOH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Diagram 1

Overview of Cost Allocations



DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Mainline	2,073.4	4,242	797.5 796.3
Lateral	<u>1,133.9</u>	<u>9,860</u>	387.2 388.4
Total	<u>3,207.4</u>	<u>14,102</u>	<u>1,184.7</u>

Note: Net Book Value is as at December 31, 2002

DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	205.5	112.4	34.8	448.5
Depreciation	69.5	95.0	60.7	14.3	239.5
Municipal Tax	4.5	33.8	23.5	2.0	63.9
Income Tax	35.0	75.0	41.0	12.7	163.7
TBO	-	78.0	1.1	-	79.2
Maintenance	<u>49.5</u>	<u>3.6</u>	<u>9.1</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>490.9</u>	<u>247.8</u>	<u>93.3</u>	<u>1,086.4</u>

DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b) Table 3

Summary of Non-Direct Costs

	General Plant, Working Capital and G&A ⁽¹⁾	Compression		Transmission		Metering	Total
		(\$ million)		Mainline	Lateral		
General Operating Assets		9.0		0.8	1.9		14.3
Calgary Offices		3.4		3.4	8.0		16.1
Field/Service Centers, Vehicles		12.8		1.1	2.7		25.7
Patrol		-		0.1	0.3		0.5
Information Technology		5.1		5.0	11.9		44.2
General plant total		30.4		10.5	24.8	22.3	100.8
Cash Working Capital		5.0		4.9	11.7		23.5
Material & Supplies Inventory		3.0		0.2	0.6		4.1
Linepack Gas		-		1.0	2.5		3.5
Unamortized Debt Issue Costs		0.9		0.9	2.2		4.4
Working capital total		9.0		7.1	16.9	2.5	35.6
Information Technology		2.9		2.8	6.7		24.9
Customer Service		1.5		1.4	3.4		15.6
Other Departments ⁽²⁾		3.1		3.1	7.3		14.7
General Expenses		12.4		12.2	29.0		58.2
Other Expenses		1.6		1.6	3.8		7.6
G&A total		21.5		21.2	50.2	28.0	121.0
Total General plant & Working capital		60.9		38.8	92.0	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b)
Table 4

<u>Summary of Total Costs</u> (\$ million)					
	Direct Costs	Gen. Plant, Working Capital and G&A	Total		Transmission Costs Split
			Costs by Function	Allocated Compression	
Compression	254.4	60.9	315.3	-315.3	0.0
Mainline	490.9	38.8	529.6	266.7	796.3
	247.8	92.0	339.8	48.6	388.4
Metering					
	93.3	65.7	159.1	0.0	159.1
Totals	1,086.4	257.4	1,343.8	0.0	1,343.8

DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b) Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

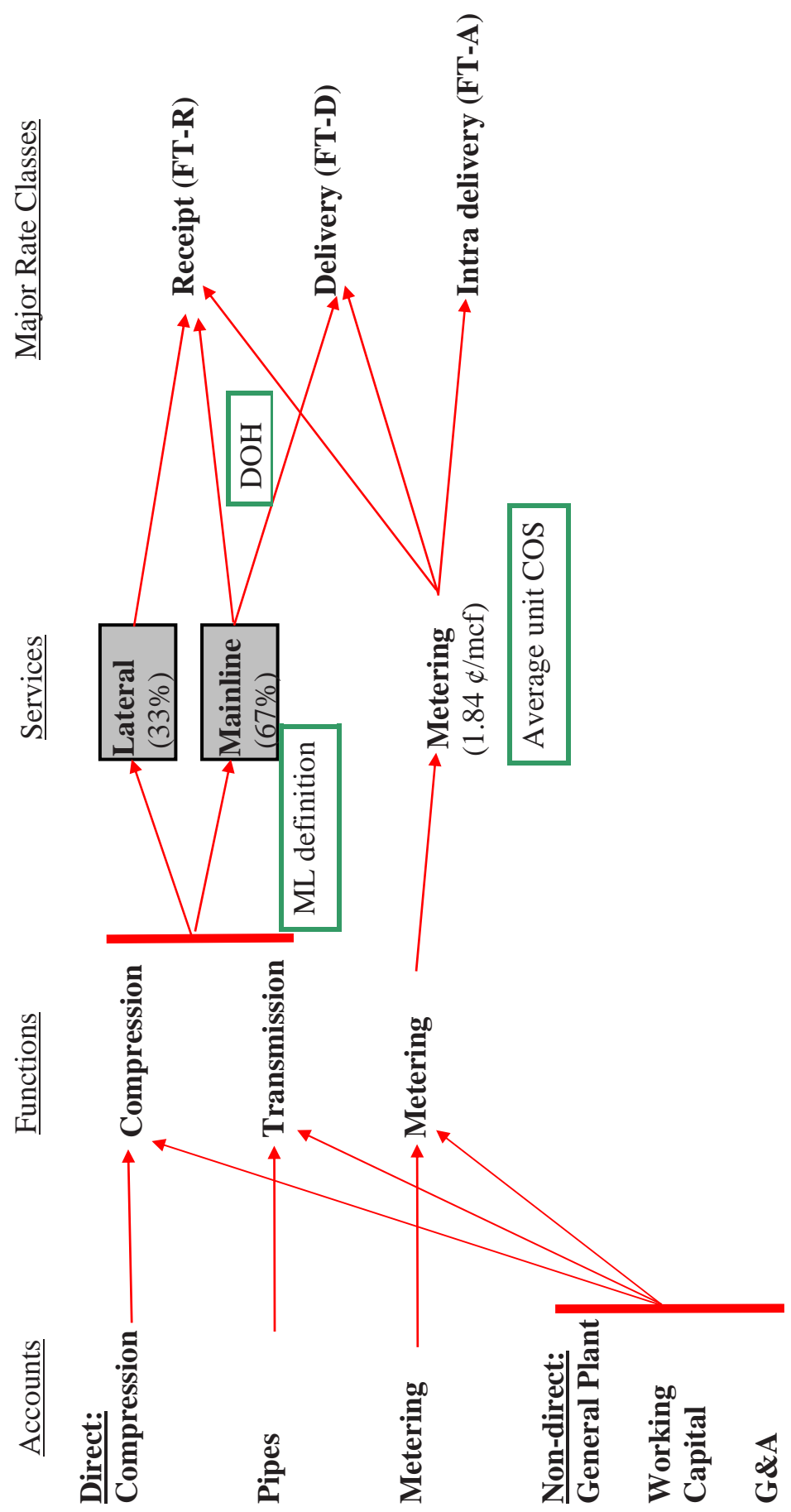
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

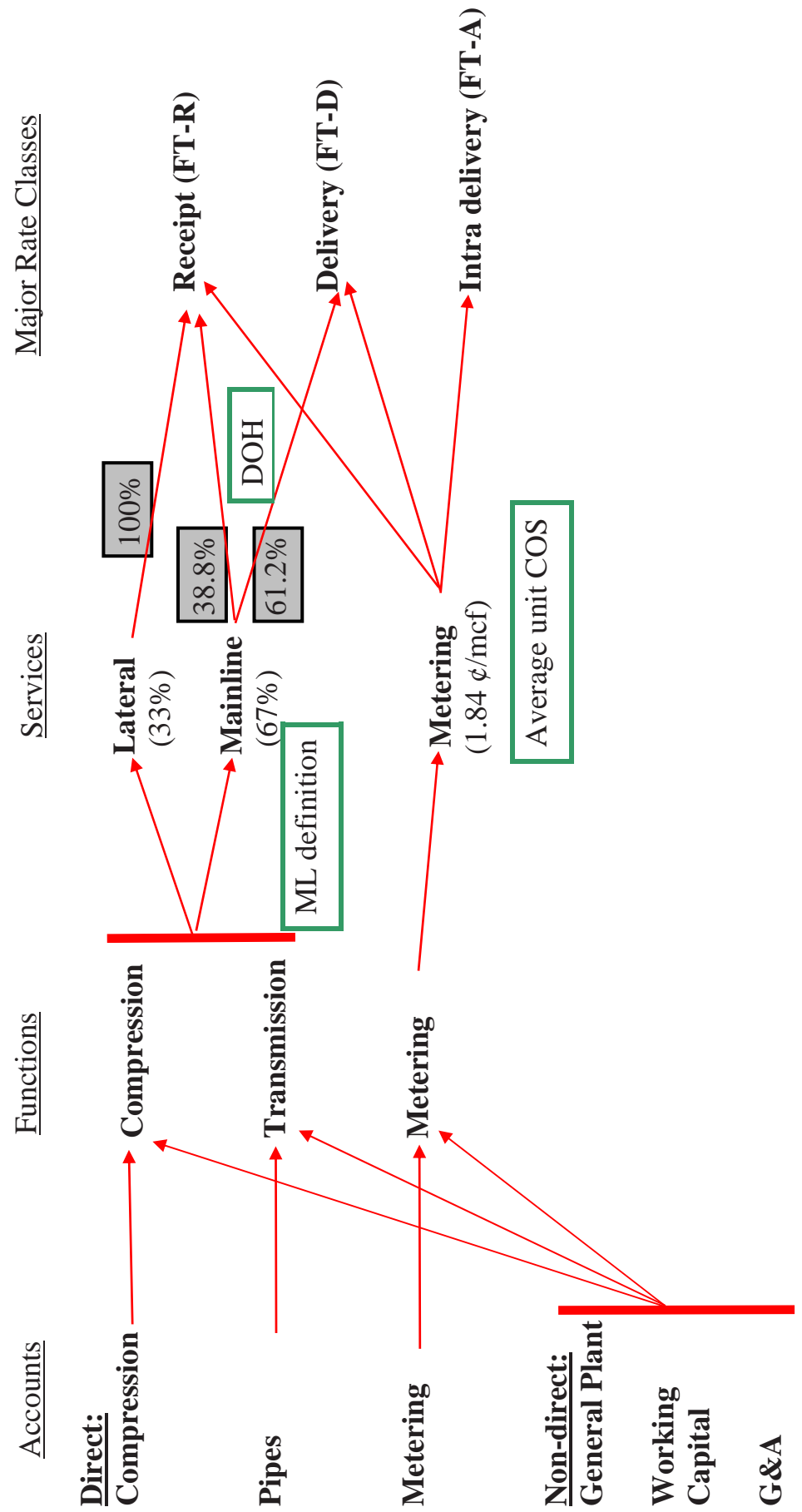
DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b)
Diagram 2

Results of Cost Allocations



DOH - Physical Mainline Definition of 24 Inches Diameter or Greater - Alternative 1(b)
Diagram 3

Application of Cost Allocations to Rates Determination



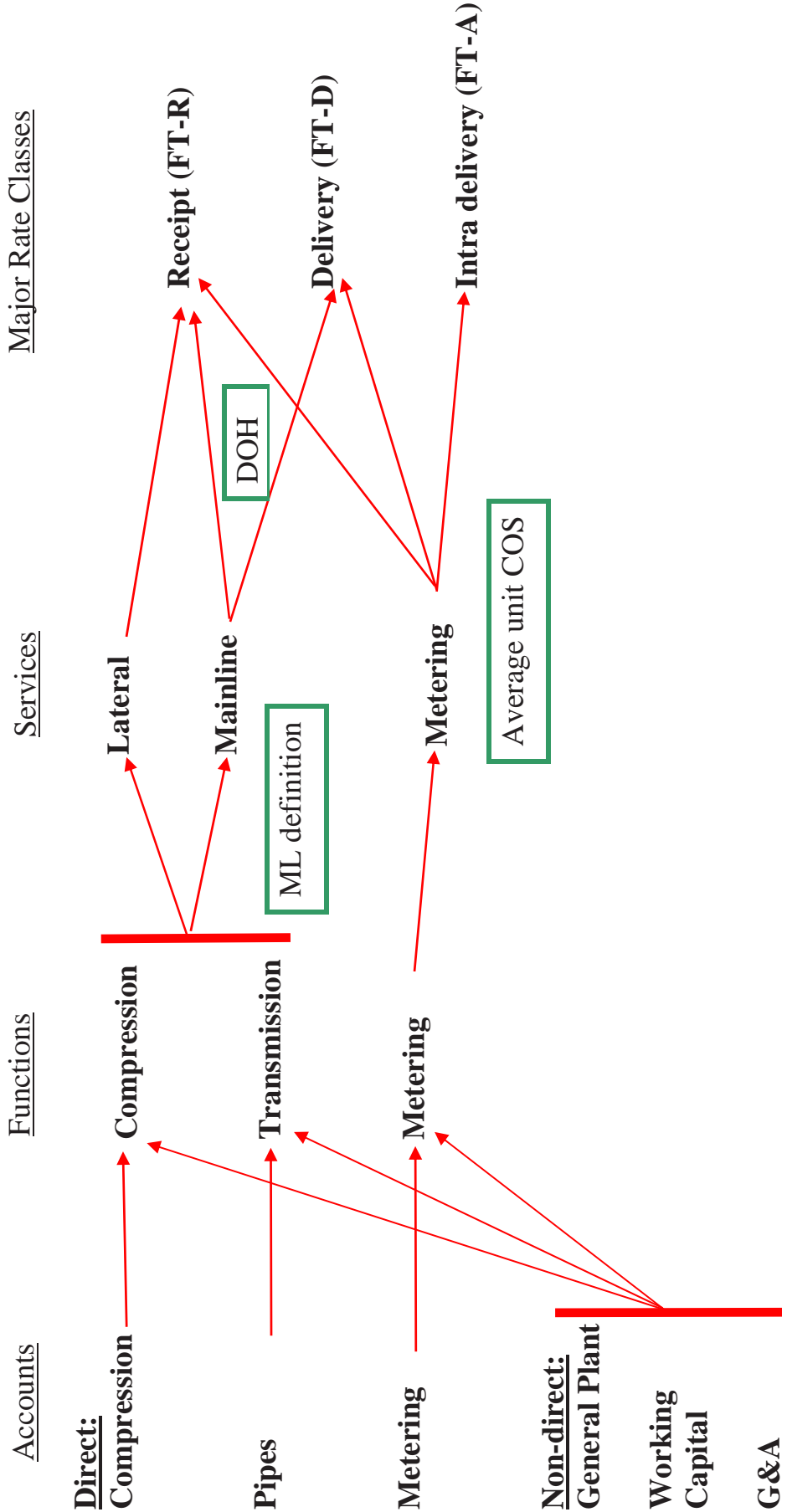
APPENDIX H: COST OF SERVICE RESULTS UTILIZING DOH – ALTERNATIVE 1(C)

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Diagram 1

Overview of Cost Allocations



DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Mainline	2,824.3	9,086	1,044.9 1,044.5
Lateral	<u>383.1</u>	<u>5,017</u>	139.8 140.2
Total	<u>3,207.4</u>	<u>14,103</u>	<u>1,184.7</u>

Note: Net Book Value is as at December 31, 2002

DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	279.9	38.0	34.8	448.5
Depreciation	69.5	134.9	20.8	14.3	239.5
Municipal Tax	4.5	49.6	7.7	2.0	63.9
Income Tax	35.0	102.2	13.9	12.7	163.7
TBO	-	78.8	0.4	-	79.2
Maintenance	<u>49.5</u>	<u>7.9</u>	<u>4.8</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>653.2</u>	<u>85.5</u>	<u>93.3</u>	<u>1,086.4</u>

DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c) Table 3

Summary of Non-Direct Costs (\$ million)

<u>General Plant, Working Capital and G&A</u> ⁽¹⁾	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
General Operating Assets	9.0	1.7	1.0	2.7	14.3
Calgary Offices	3.4	7.3	4.1	1.3	16.1
Field/Service Centres, Vehicles	12.8	2.5	1.4	9.0	25.7
Patrol	-	0.3	0.2	-	0.5
Information Technology	5.1	10.8	6.1	22.3	44.2
General plant total	30.4	22.5	12.8	35.2	100.8
Cash Working Capital	5.0	10.6	6.0	1.8	23.5
Material & Supplies Inventory	3.0	0.5	0.3	0.3	4.1
Linepack Gas	-	2.2	1.3	-	3.5
Unamortized Debt Issue Costs	0.9	2.0	1.1	0.3	4.4
Working capital total	9.0	15.4	8.7	2.5	35.6
Information Technology	2.9	6.1	3.4	12.5	24.9
Customer Service	1.5	3.1	1.8	9.3	15.6
Other Departments	3.1	6.6	3.8	1.1	14.7
General Expenses ⁽²⁾	12.4	26.3	14.9	4.5	58.2
Other Expenses	1.6	3.4	2.0	0.6	7.6
G&A total	21.5	45.5	25.9	28.0	121.0
Total General plant & Working capital	60.9	83.4	47.4	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service	Transmission Cost Split
Compression	254.4	60.9	315.3	-315.3	0.0	
Mainline	653.2	83.4	736.6	307.9	1,044.5	88%
Lateral	85.5	47.4	132.8	7.4	140.2	12%
Metering	93.3	65.7	159.1	0.0	159.1	
Totals	1,086.4	257.4	1,343.8	0.0	1,343.8	

DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)

Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

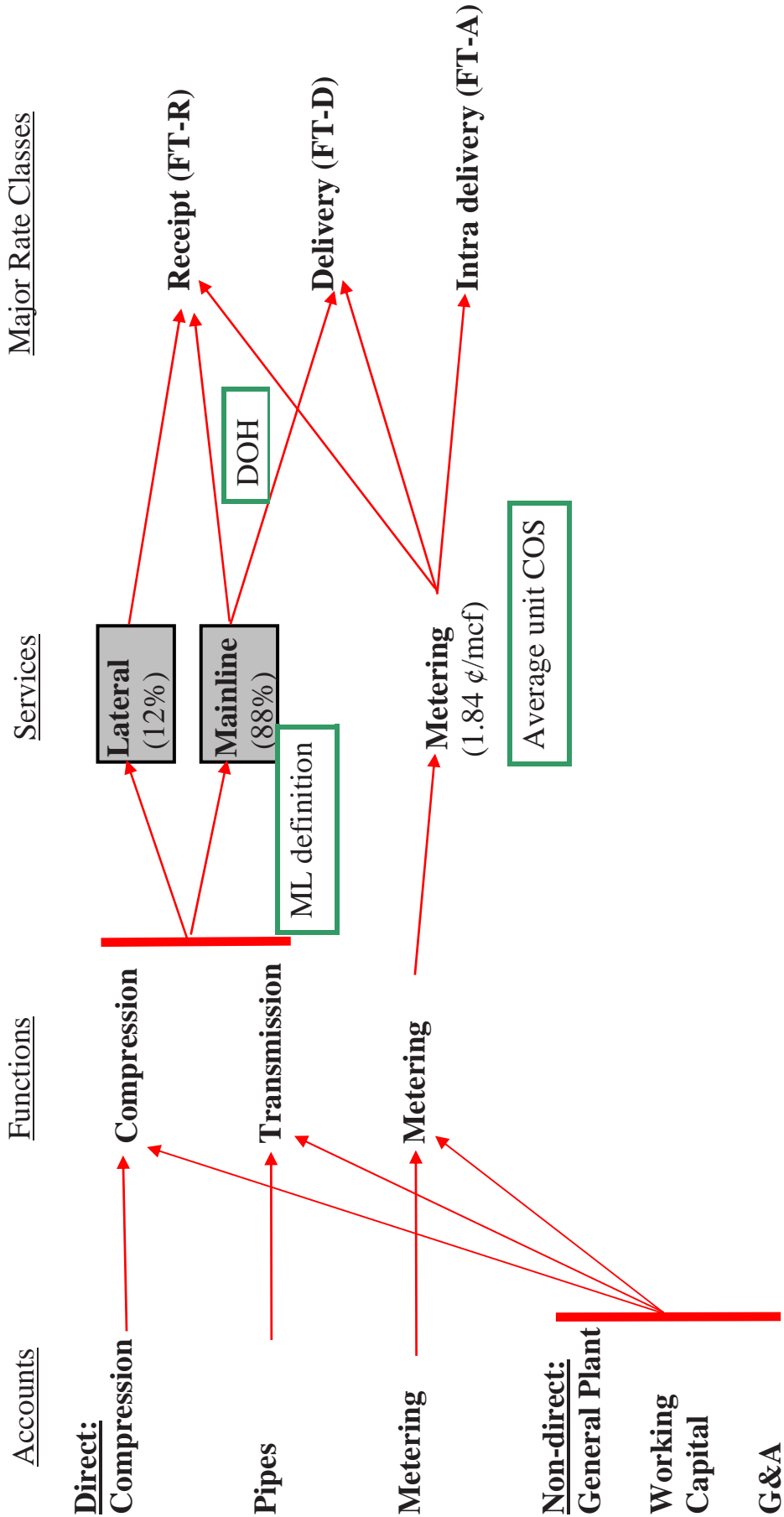
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

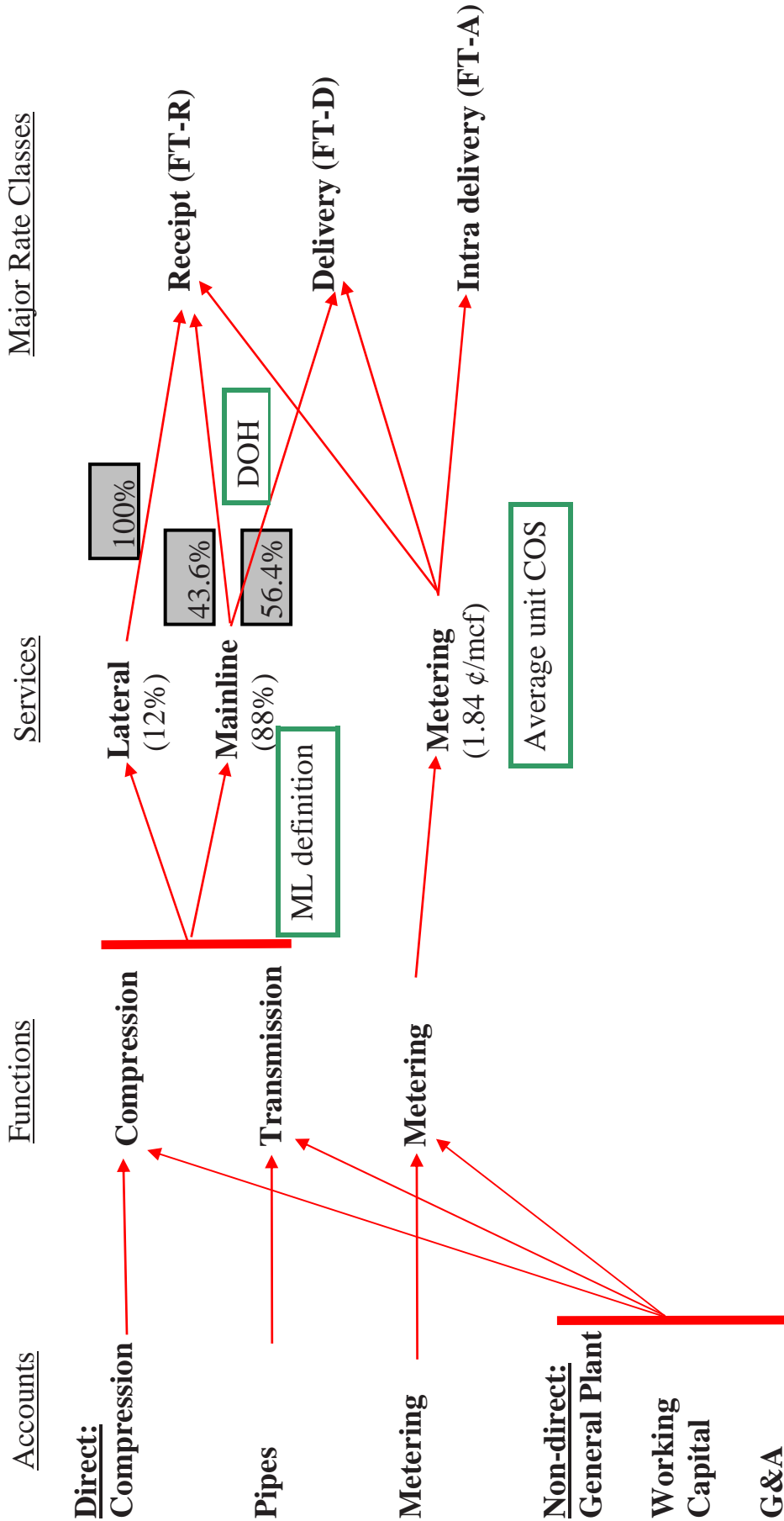
DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Diagram 2

Results of Cost Allocations



DOH – Physical Mainline Definition of 12 Inches Diameter or Greater - Alternative 1(c)
Diagram 3

Application of Cost Allocations to Rates Determination



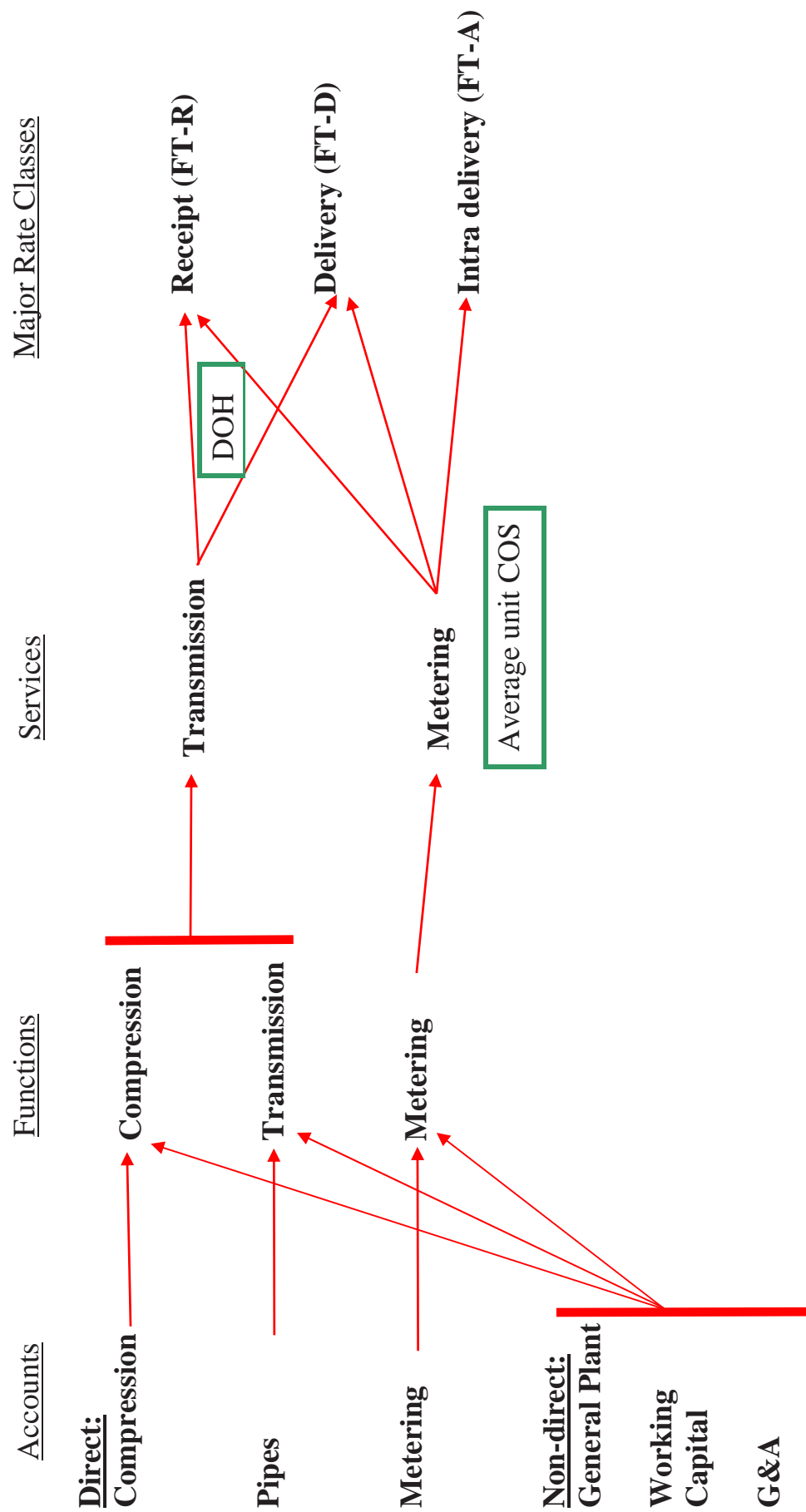
APPENDIX I: COST OF SERVICE RESULTS UTILIZING DOH – ALTERNATIVE 2

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

DOH - Deliveries to Extraction Facilities Excluded – Alternative 2
Diagram 1

Overview of Cost Allocations



DOH - Deliveries to Extraction Facilities Excluded - Alternative 2
Table 1

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Transmission	3,207.4	14,103.0	1,184.7

Note: Net Book Value is as at December 31, 2002

DOH - Deliveries to Extraction Facilities Excluded - Alternative 2
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
Operating Return	95.8	317.8	34.8	448.5
Depreciation	69.5	155.7	14.3	239.5
Municipal Tax	4.5	57.3	2.0	63.9
Income Tax	35.0	116.0	12.7	163.7
TBO	-	79.2	-	79.2
Maintenance	<u>49.5</u>	<u>12.7</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>738.7</u>	<u>93.3</u>	<u>1,086.4</u>

DOH - Deliveries to Extraction Facilities Excluded - Alternative 2

Table 3

Summary of Non-Direct Costs (\$ million)

<u>General Plant, Working Capital and G&A</u>	<u>(1)</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
General Operating Assets		9.0	2.6	2.7	14.3
Calgary Offices		3.4	11.4	1.3	16.1
Field/Service Centres, Vehicles		12.8	3.8	9.0	25.7
Patrol		-	0.5	-	0.5
Information Technology		5.1	16.9	22.3	44.2
General plant total		30.4	35.3	35.2	100.8
Cash Working Capital		5.0	16.6	1.8	23.5
Material & Supplies Inventory		3.0	0.8	0.3	4.1
Linepack Gas		-	3.5	-	3.5
Unamortized Debt Issue Costs		0.9	3.1	0.3	4.4
Working capital total		9.0	24.1	2.5	35.6
Information Technology		2.9	9.5	12.5	24.9
Customer Service		1.5	4.9	9.3	15.6
Other Departments		3.1	10.4	1.1	14.7
General Expenses (2)		12.4	41.2	4.5	58.2
Other Expenses		1.6	5.4	0.6	7.6
G&A total		21.5	71.4	28.0	121.0
Total General plant, Working capital & G&A		60.9	130.7	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

DOH - Deliveries to Extraction Facilities Excluded - Alternative 2
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service
Compression	254.4	60.9	315.3	-315.3	0.0
Transmission	738.7	130.7	869.4	315.3	1,184.7
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>

DOH – Deliveries to Extraction Facilities Excluded - Alternative 2

Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

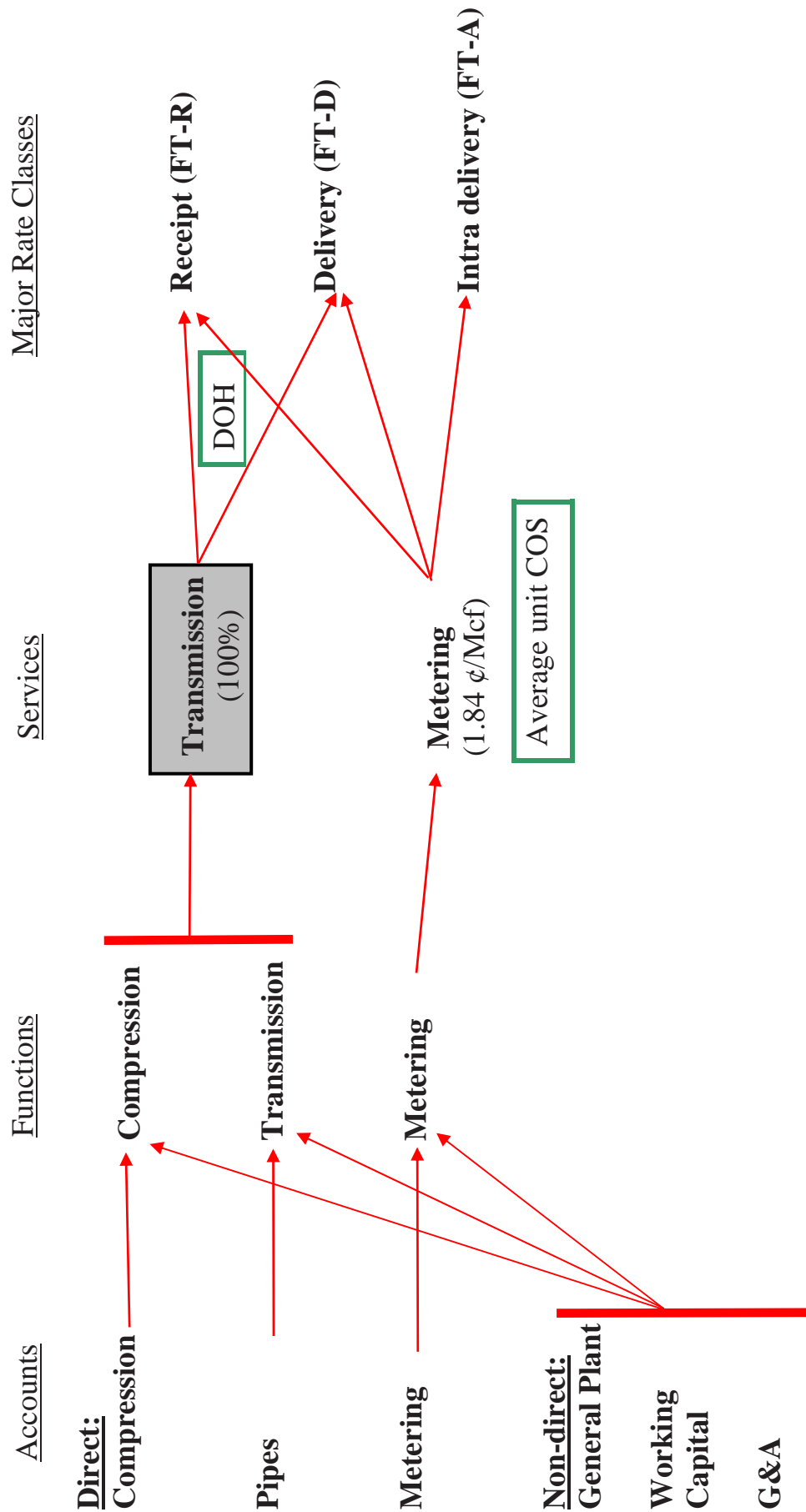
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

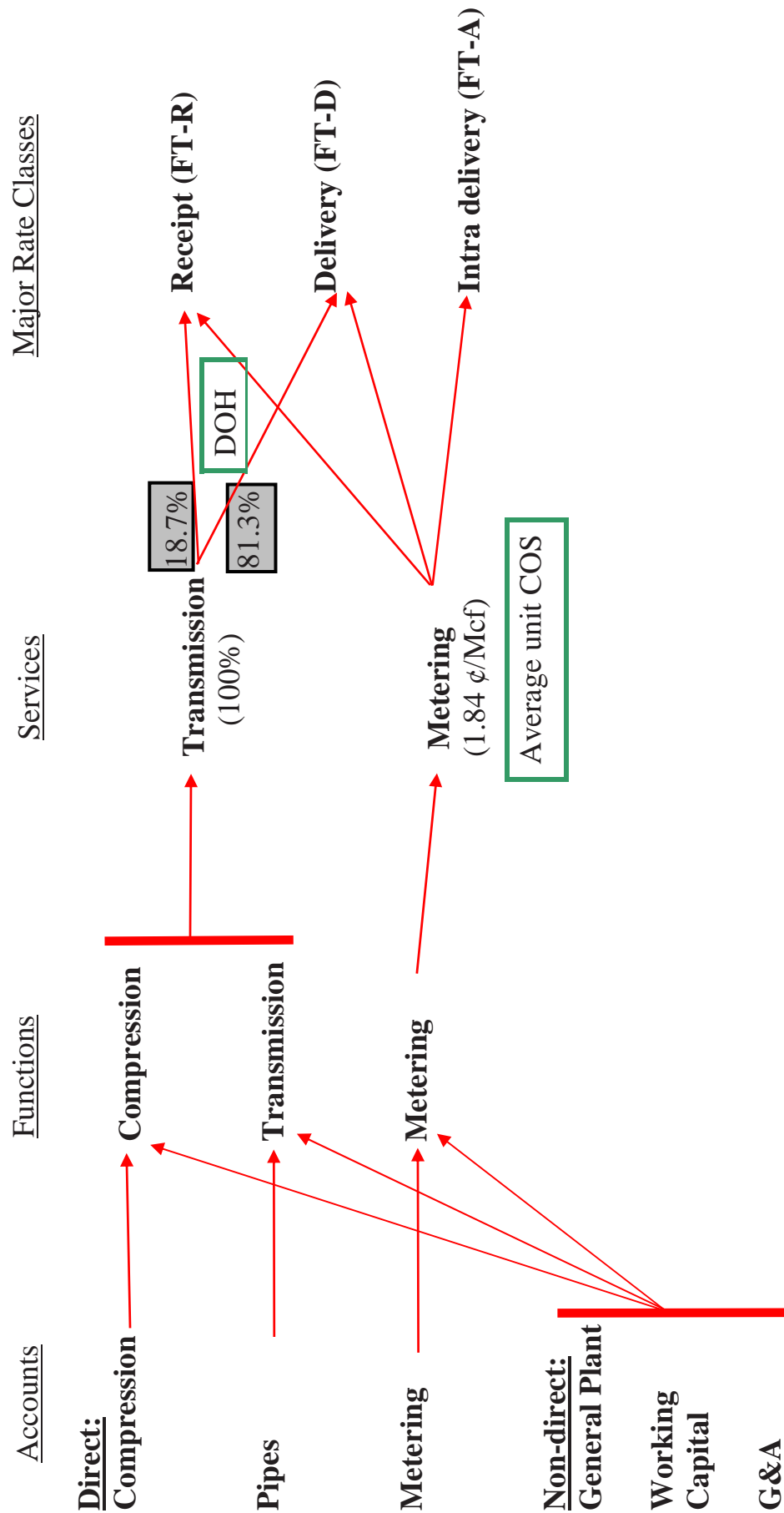
DOH - Deliveries to Extraction Facilities Excluded - Alternative 2
Diagram 2

Results of Cost Allocations



DOH - Deliveries to Extraction Facilities Excluded - Alternative 2
Diagram 3

Application of Cost Allocations to Rates Determination



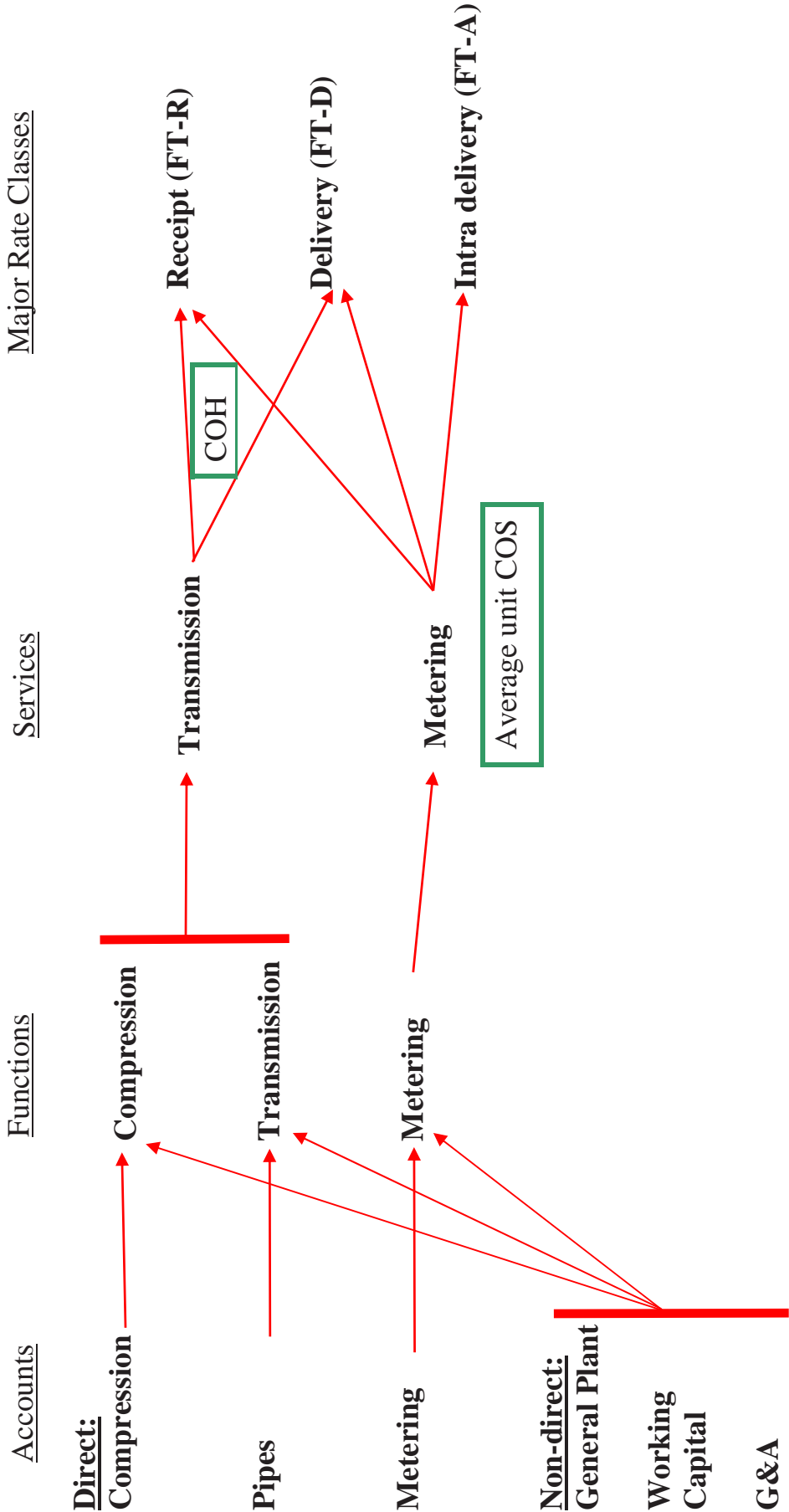
APPENDIX J: COST OF SERVICE RESULTS UTILIZING COH

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

COH
Diagram 1

Overview of Cost Allocations



COH
Table 1

<u>Summary of Transmission Assets</u> (\$ million)			
	Net Book Value in million \$	Length in miles	Total cost in million \$
Transmission	3,207.4	14,103.0	1,184.7

Note: Net Book Value is as at December 31, 2002

COH
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
Operating Return	95.8	317.8	34.8	448.5
Depreciation	69.5	155.7	14.3	239.5
Municipal Tax	4.5	57.3	2.0	63.9
Income Tax	35.0	116.0	12.7	163.7
TBO	-	79.2	-	79.2
Maintenance	<u>49.5</u>	<u>12.7</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>738.7</u>	<u>93.3</u>	<u>1,086.4</u>

COH Table 3

Summary of Non-Direct Costs (\$ million)

<u>General Plant, Working Capital and G&A</u> ⁽¹⁾	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
General Operating Assets	9.0	2.6	2.7	14.3
Calgary Offices	3.4	11.4	1.3	16.1
Field/Service Centres, Vehicles	12.8	3.8	9.0	25.7
Patrol	-	0.5	-	0.5
Information Technology	5.1	16.9	22.3	44.2
General plant total	30.4	35.3	35.2	100.8
Cash Working Capital	5.0	16.6	1.8	23.5
Material & Supplies Inventory	3.0	0.8	0.3	4.1
Linepack Gas	-	3.5	-	3.5
Unamortized Debt Issue Costs	0.9	3.1	0.3	4.4
Working capital total	9.0	24.1	2.5	35.6
Information Technology	2.9	9.5	12.5	24.9
Customer Service	1.5	4.9	9.3	15.6
Other Departments	3.1	10.4	1.1	14.7
General Expenses ⁽²⁾	12.4	41.2	4.5	58.2
Other Expenses	1.6	5.4	0.6	7.6
G&A total	21.5	71.4	28.0	121.0
Total General plant, Working capital & G&A	60.9	130.7	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

COH
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service
Compression	254.4	60.9	315.3	-315.3	0.0
Transmission	738.7	130.7	869.4	315.3	1,184.7
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u><u>1,343.8</u></u>

COH Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

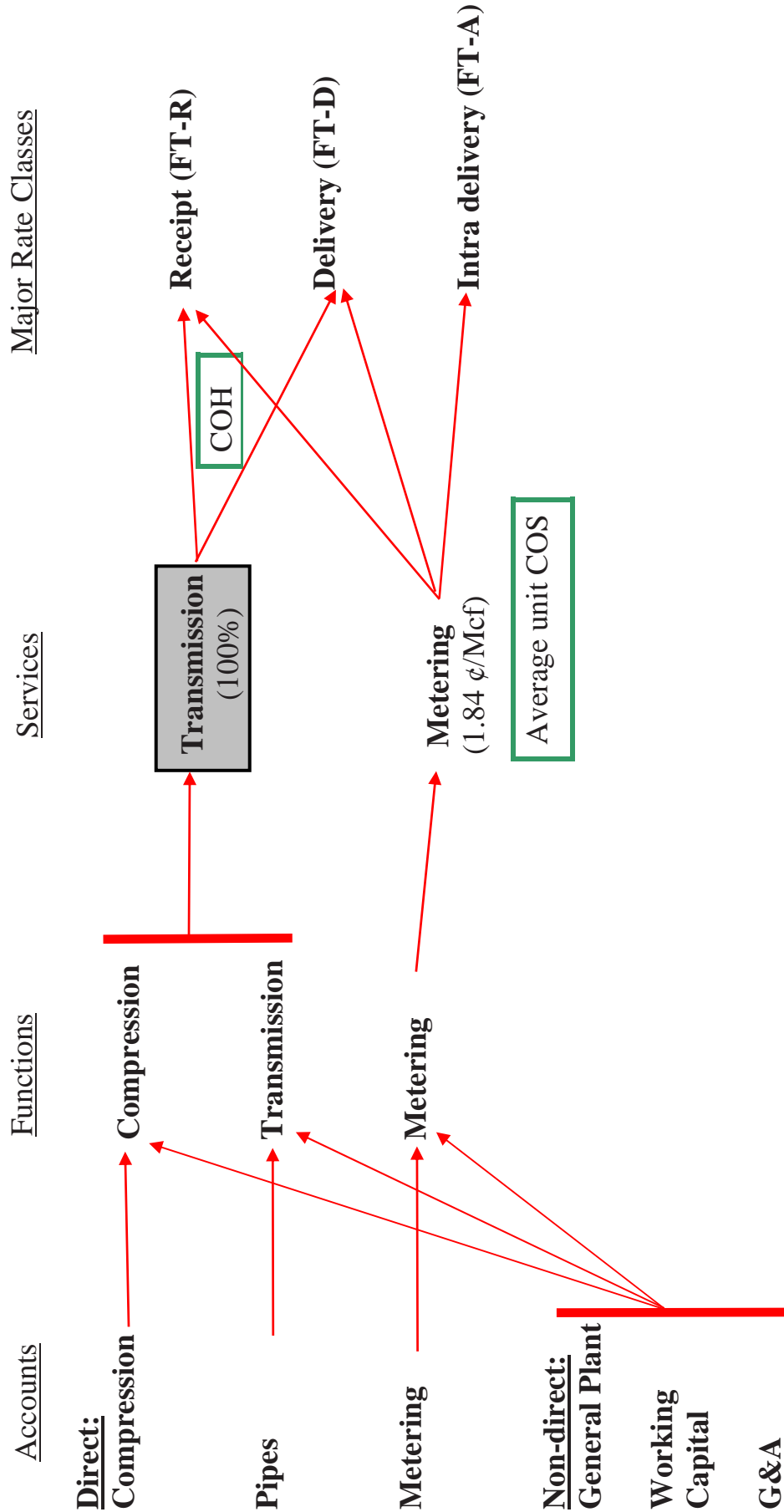
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

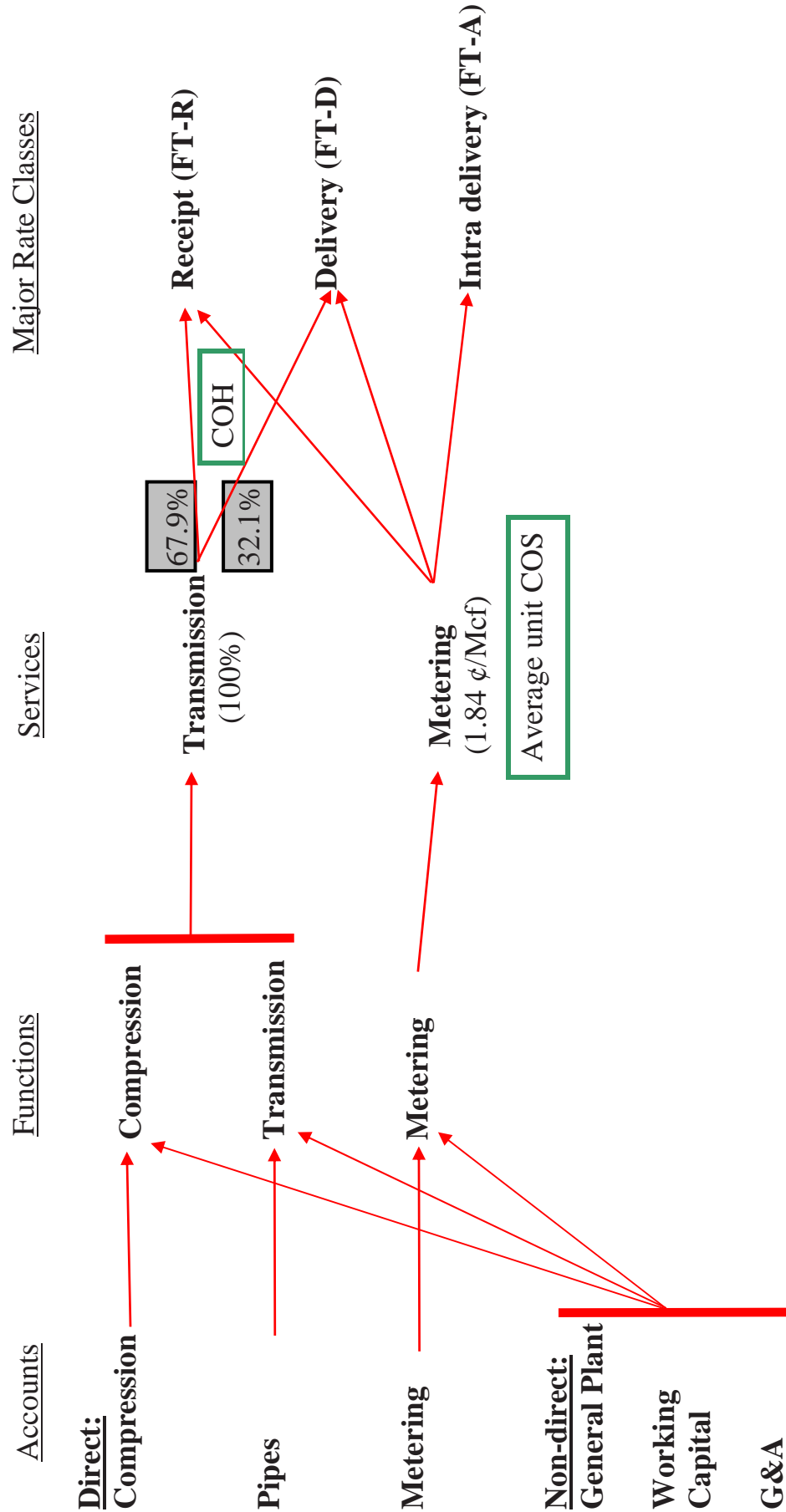
COH
Diagram 2

Results of Cost Allocations



COH
Diagram 3

Application of Cost Allocations to Rates Determination



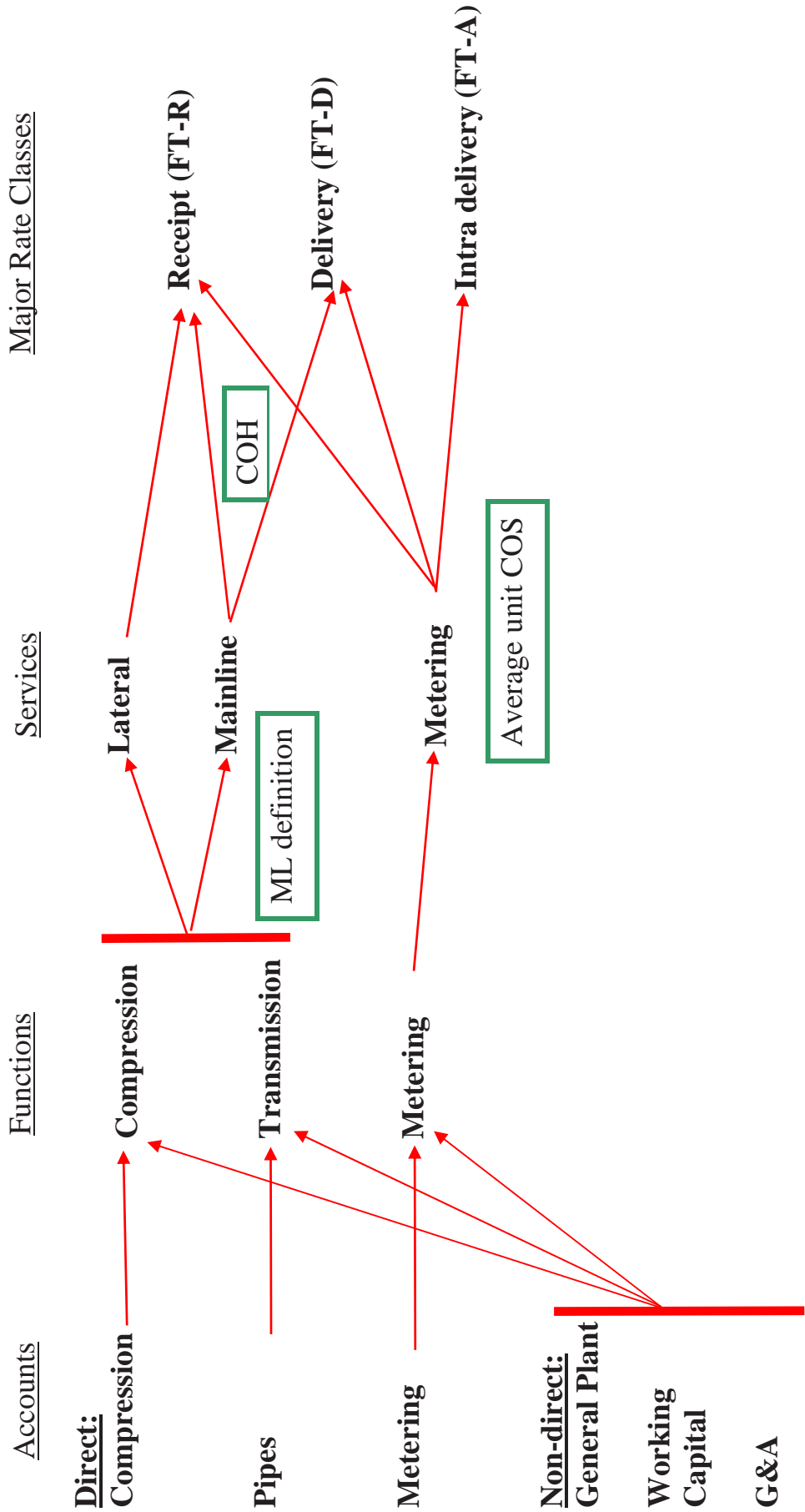
APPENDIX K: COST OF SERVICE RESULTS UTILIZING COH – ALTERNATIVE 1(A)

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

COH - Functional Mainline Definition – Alternative 1(a)
Diagram 1

Overview of Cost Allocations



COH - Functional Mainline Definition – Alternative 1(a)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Mainline	2,458.1	6,929	930.6 929.9
Lateral	<u>749.2</u>	<u>7,174</u>	254.1 254.8
Total	<u>3,207.4</u>	<u>14,103</u>	<u>1,184.7</u>

Note: Net Book Value is as at December 31, 2002

COH - Functional Mainline Definition – Alternative 1(a)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	243.6	74.2	34.8	448.5
Depreciation	69.5	116.6	39.1	14.3	239.5
Municipal Tax	4.5	42.6	14.7	2.0	63.9
Income Tax	35.0	88.9	27.1	12.7	163.7
TBO	-	78.5	0.7	-	79.2
Maintenance	<u>49.5</u>	<u>6.1</u>	<u>6.6</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>576.1</u>	<u>162.5</u>	<u>93.3</u>	<u>1,086.4</u>

COH - Functional Mainline Definition – Alternative 1(a)
Table 3

Summary of Non-Direct Costs

General Plant, Working Capital and G&A <small>(1)</small>	Compression		Transmission		Metering	Total
	(\$ million)		Mainline	Lateral		
General Operating Assets	9.0		1.3	1.4	2.7	14.3
Calgary Offices	3.4		5.6	5.9	1.3	16.1
Field/Service Centres, Vehicles	12.8		1.9	2.0	9.0	25.7
Patrol	-		0.2	0.2	-	0.5
Information Technology	5.1		8.2	8.7	22.3	44.2
General plant total	30.4		17.1	18.1	35.2	100.8
Cash Working Capital	5.0		8.1	8.6	1.8	23.5
Material & Supplies Inventory	3.0		0.4	0.4	0.3	4.1
Linepack Gas	-		1.7	1.8	-	3.5
Unamortized Debt Issue Costs	0.9		1.5	1.6	0.3	4.4
Working capital total	9.0		11.7	12.4	2.5	35.6
Information Technology	2.9		4.6	4.9	12.5	24.9
Customer Service	1.5		2.4	2.5	9.3	15.6
Other Departments	3.1		5.1	5.4	1.1	14.7
General Expenses ⁽²⁾	12.4		20.0	21.2	4.5	58.2
Other Expenses	1.6		2.6	2.8	0.6	7.6
G&A total	21.5		34.7	36.7	28.0	121.0
Total General plant & Working capital	60.9		63.5	67.2	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

COH - Functional Mainline Definition – Alternative 1(a)
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service	Transmission Costs Split
Compression	254.4	60.9	315.3	-315.3	0.0	
Mainline	576.1	63.5	639.7	290.3	929.9	79%
Lateral	162.5	67.2	229.8	25.0	254.8	21%
Metering	93.3	65.7	159.1	0.0	159.1	
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>	

COH – Functional Mainline Definition – Alternative 1(a) Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

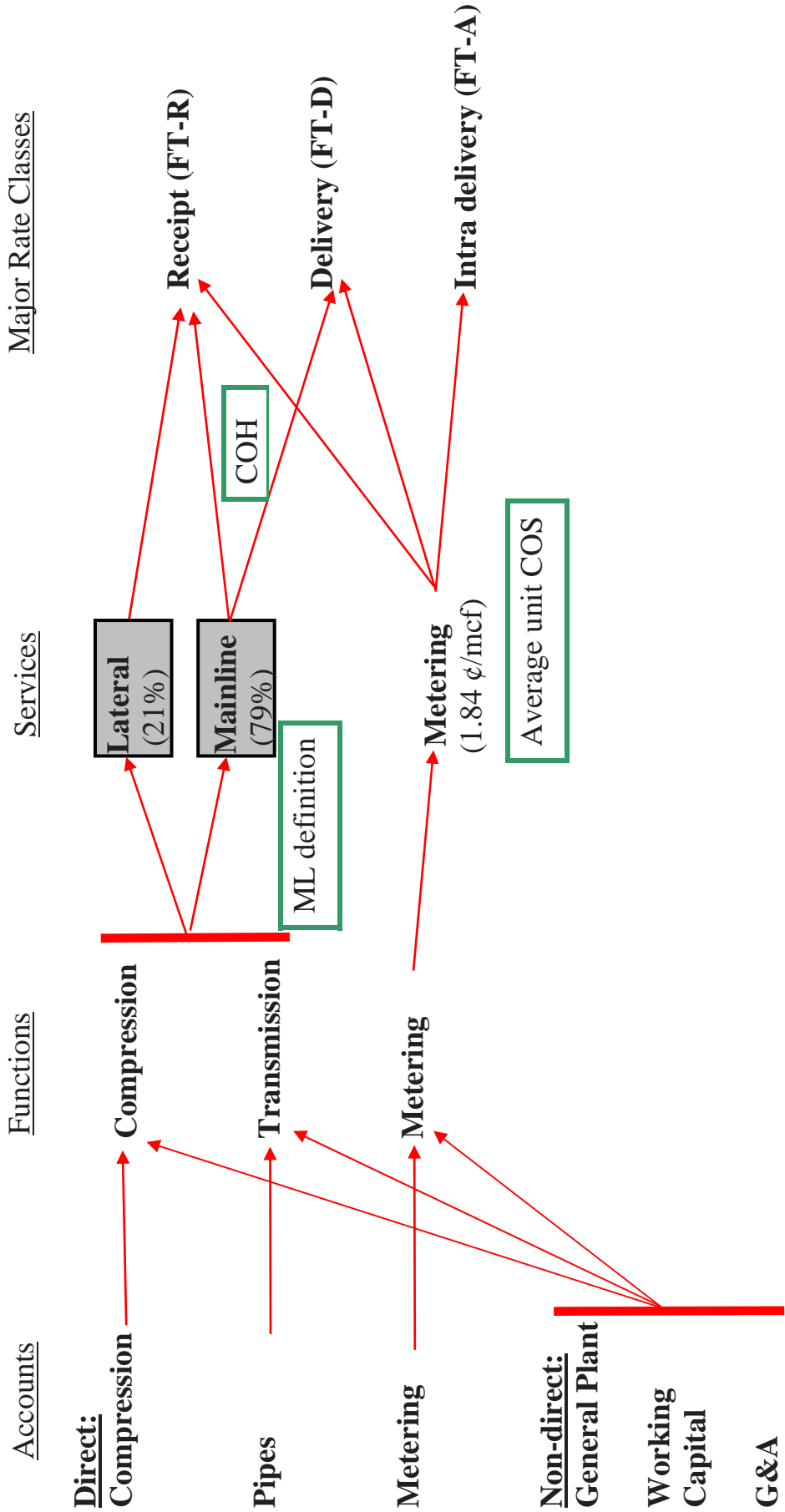
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

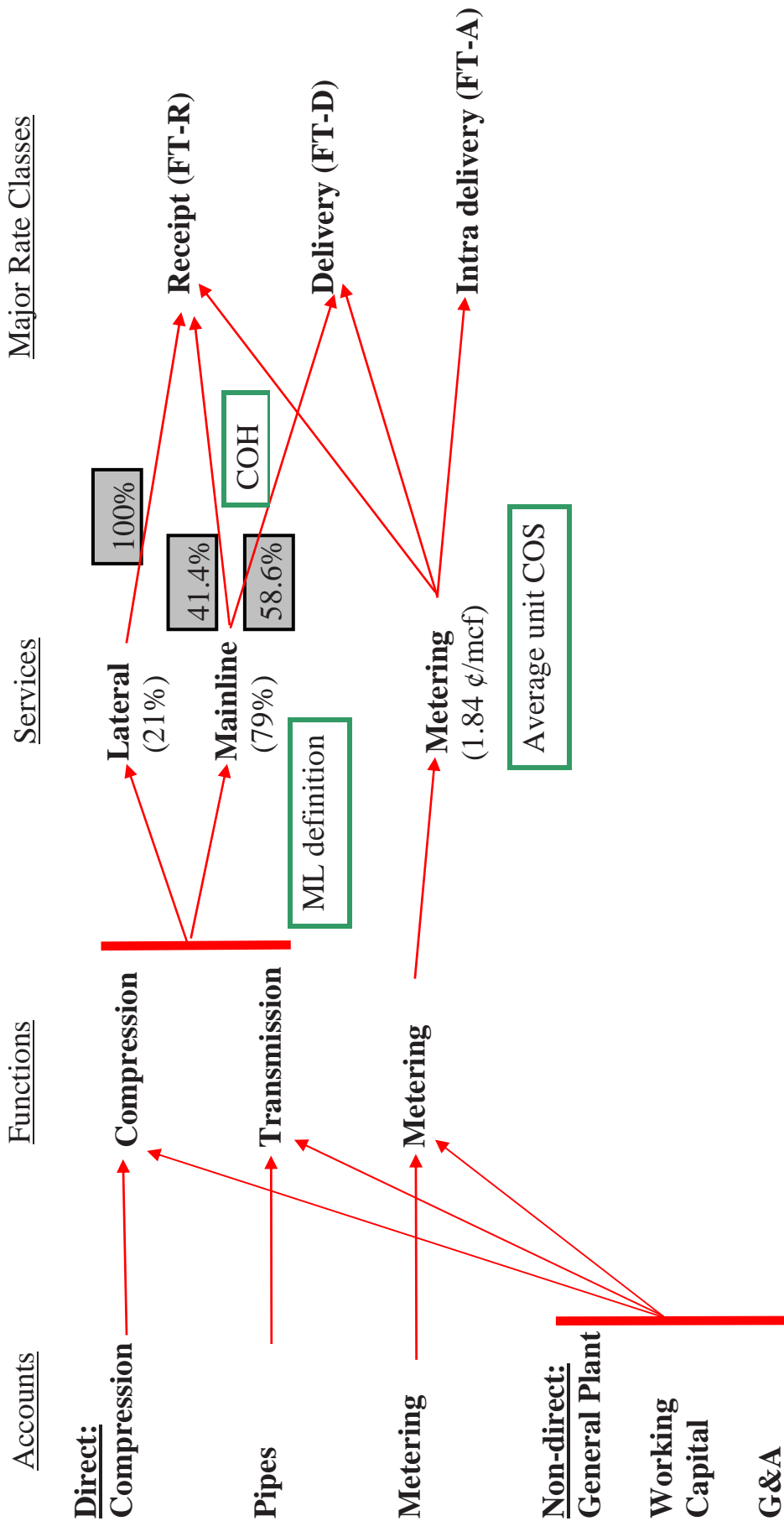
COH - Functional Mainline Definition – Alternative 1(a)
Diagram 2

Results of Cost Allocations



COH - Functional Mainline Definition – Alternative 1(a)
Diagram 3

Application of Cost Allocations to Rates Determination



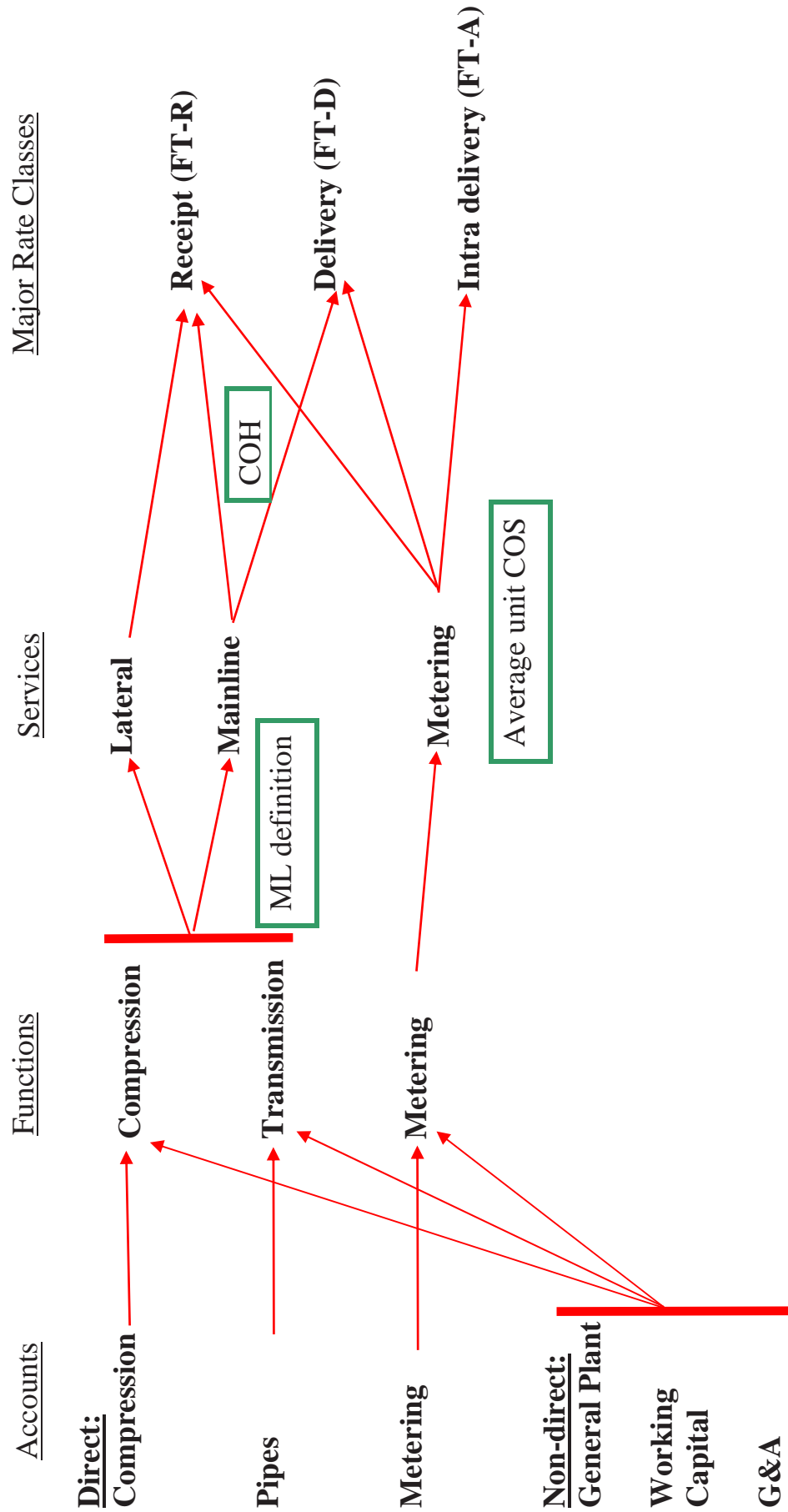
APPENDIX L: COST OF SERVICE RESULTS UTILIZING COH – ALTERNATIVE 1(B)

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Diagram 1

Overview of Cost Allocations



COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Mainline	2,073.4	4,242	797.5 796.3
Lateral	<u>1,133.9</u>	<u>9,860</u>	387.2 388.4
Total	<u>3,207.4</u>	<u>14,102</u>	<u>1,184.7</u>

Note: Net Book Value is as at December 31, 2002

COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	205.5	112.4	34.8	448.5
Depreciation	69.5	95.0	60.7	14.3	239.5
Municipal Tax	4.5	33.8	23.5	2.0	63.9
Income Tax	35.0	75.0	41.0	12.7	163.7
TBO	-	78.0	1.1	-	79.2
Maintenance	<u>49.5</u>	<u>3.6</u>	<u>9.1</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>490.9</u>	<u>247.8</u>	<u>93.3</u>	<u><u>1,086.4</u></u>

COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)

Table 3

Summary of Non-Direct Costs

General Plant, Working Capital and G&A ⁽¹⁾	(\$ million)				
	Compression	Transmission		Metering	Total
		Mainline	Lateral		
General Operating Assets	9.0	0.8	1.9	2.7	14.3
Calgary Offices	3.4	3.4	8.0	1.3	16.1
Field/Service Centers, Vehicles	12.8	1.1	2.7	9.0	25.7
Patrol	-	0.1	0.3	-	0.5
Information Technology	5.1	5.0	11.9	22.3	44.2
General plant total	30.4	10.5	24.8	35.2	100.8
Cash Working Capital	5.0	4.9	11.7	1.8	23.5
Material & Supplies Inventory	3.0	0.2	0.6	0.3	4.1
Linepack Gas	-	1.0	2.5	-	3.5
Unamortized Debt Issue Costs	0.9	0.9	2.2	0.3	4.4
Working capital total	9.0	7.1	16.9	2.5	35.6
Information Technology	2.9	2.8	6.7	12.5	24.9
Customer Service	1.5	1.4	3.4	9.3	15.6
Other Departments ⁽²⁾	3.1	3.1	7.3	1.1	14.7
General Expenses	12.4	12.2	29.0	4.5	58.2
Other Expenses	1.6	1.6	3.8	0.6	7.6
G&A total	21.5	21.2	50.2	28.0	121.0
Total General plant & Working capital	60.9	38.8	92.0	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service	Transmission Costs Split
Compression	254.4	60.9	315.3	-315.3	0.0	
Mainline	490.9	38.8	529.6	266.7	796.3	67%
Lateral	247.8	92.0	339.8	48.6	388.4	33%
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>	
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>	

COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b) Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

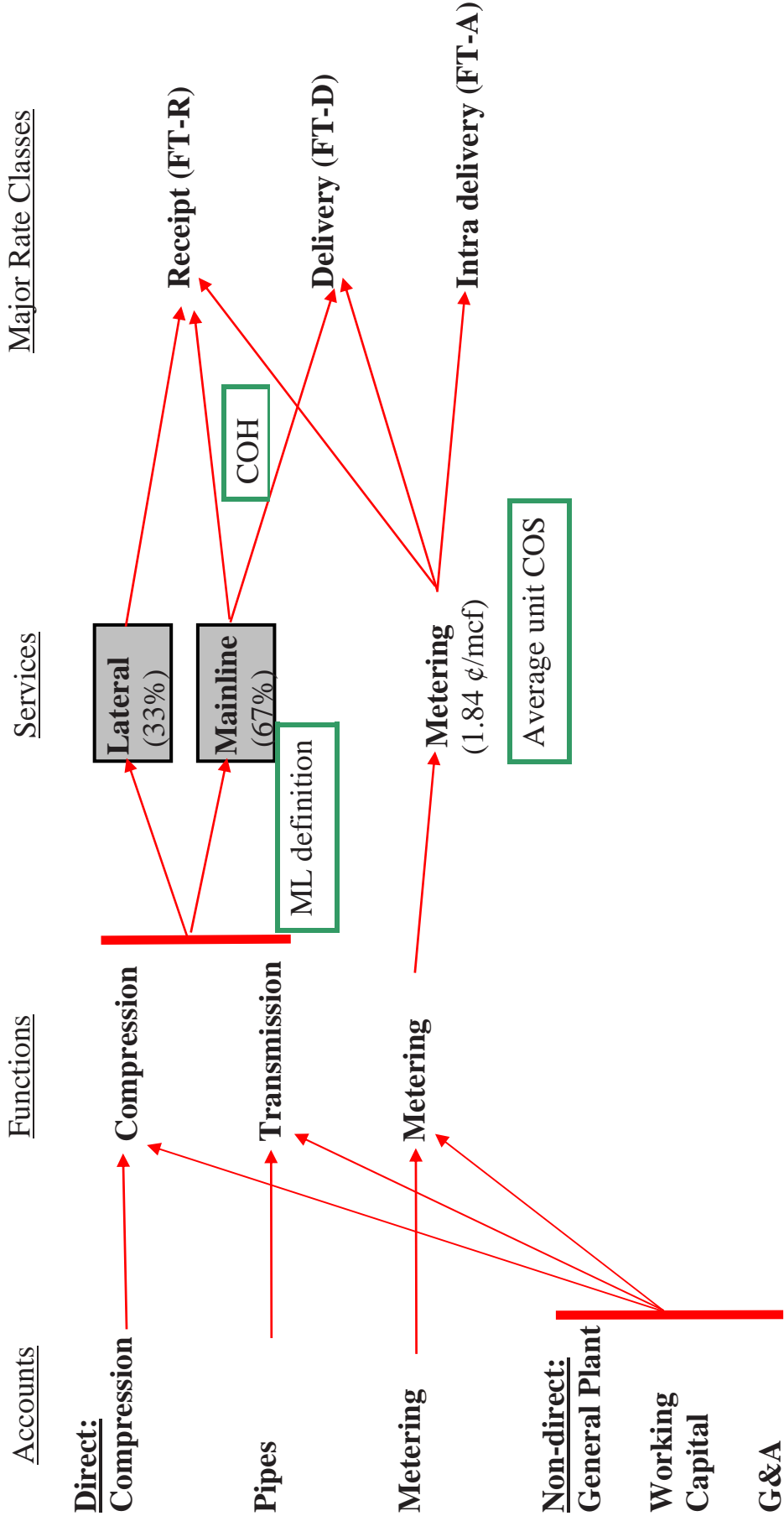
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

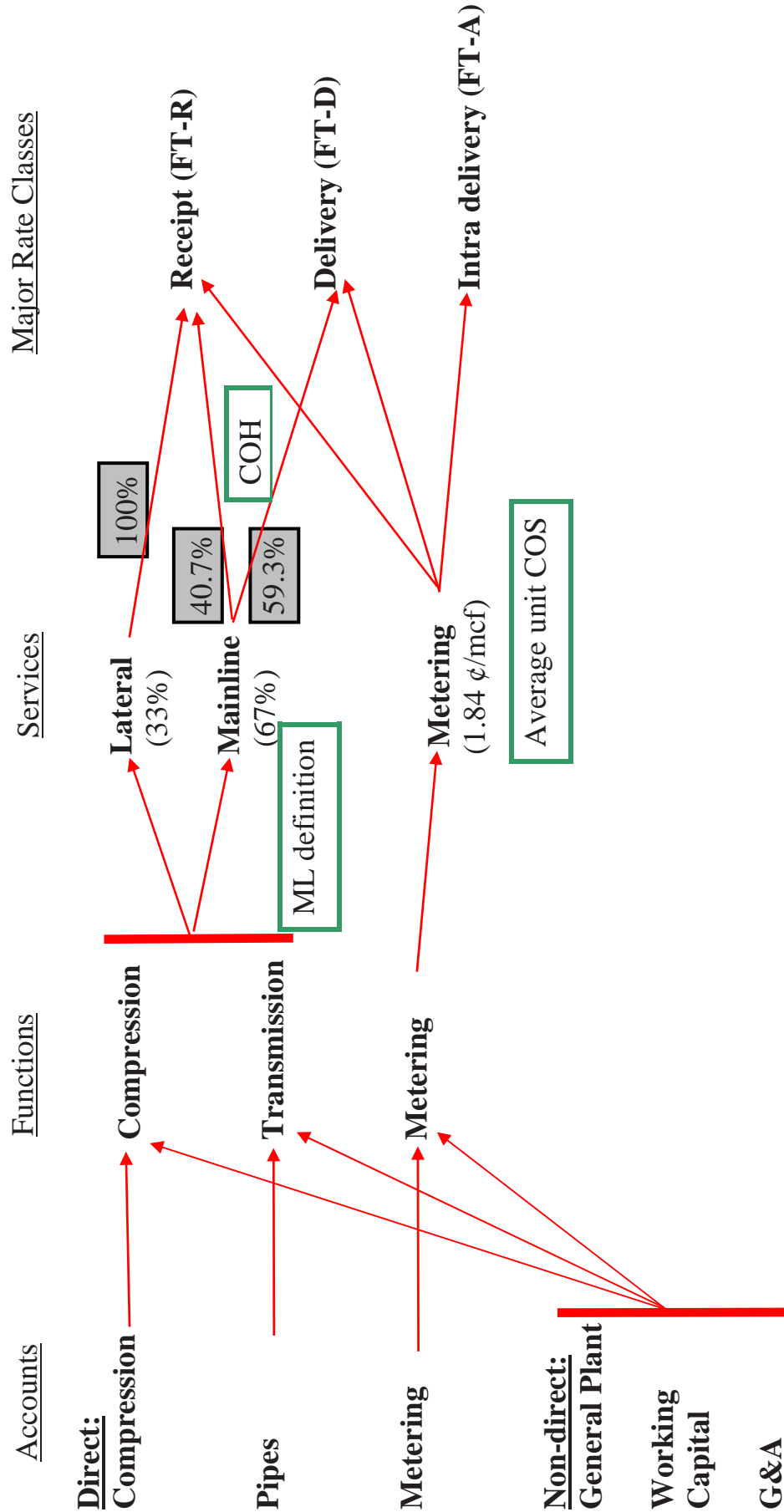
COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Diagram 2

Results of Cost Allocations



COH - Physical Mainline Definition of 24 Inches Diameter or Greater – Alternative 1(b)
Diagram 3

Application of Cost Allocations to Rates Determination



1 APPENDIX M: COST OF SERVICE RESULTS UTILIZING COH – ALTERNATIVE 1(C)

2 The contents of this appendix are as follows:

3 • Diagram 1 illustrates the cost allocation process utilized in generating the cost of service
4 results

5 • Tables 1 – 5 provide detailed results of the cost allocation process

6 Specifically:

7 – Table 1 is a summary of the transmission assets.

8 – Table 2 shows the direct costs for the three functions of compression,
9 transmission and metering.

10 – Table 3 shows the non-direct costs for the three functions.

11 – Table 4 shows the summary of all costs for the three functions.

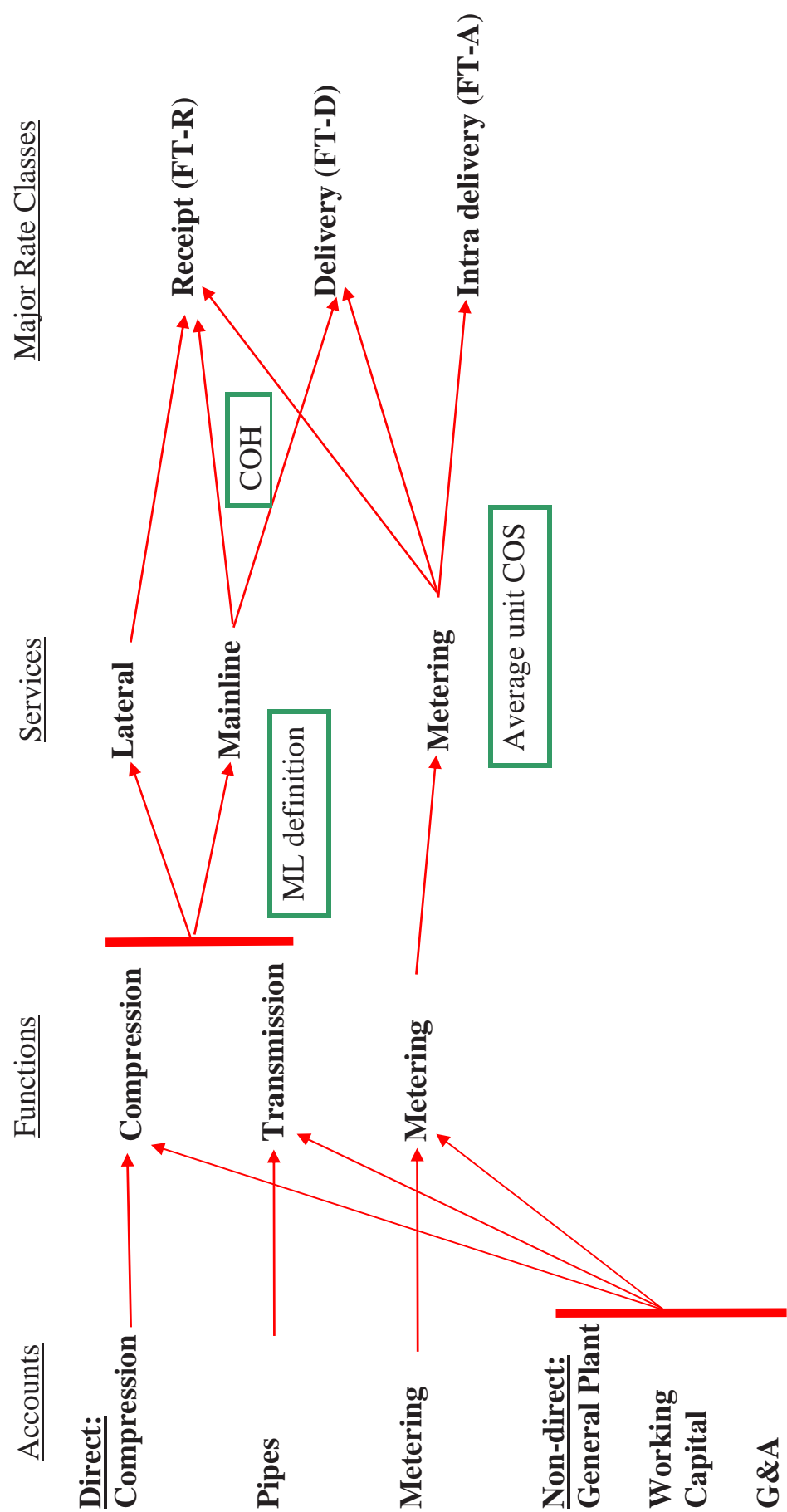
12 – Table 5 explains the calculation of the unit metering cost.

13 • Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the
14 various services.

15 • Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the
16 major rate classes.

COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Diagram 1

Overview of Cost Allocations



COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Table 1 [Revised](#)

<u>Summary of Transmission Assets</u> (\$ million)			
	<u>Net Book Value</u>	<u>Length (miles)</u>	<u>Total Cost</u>
Mainline	2,824.3	9,086	1,044.9 1,044.5
Lateral	<u>383.1</u>	<u>5,017</u>	139.8 140.2
Total	<u>3,207.4</u>	<u>14,103</u>	<u>1,184.7</u>

Note: Net Book Value is as at December 31, 2002

COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Table 2

Summary of Direct Costs
(\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>		<u>Metering</u>	<u>Total</u>
		<u>Mainline</u>	<u>Lateral</u>		
Operating Return	95.8	279.9	38.0	34.8	448.5
Depreciation	69.5	134.9	20.8	14.3	239.5
Municipal Tax	4.5	49.6	7.7	2.0	63.9
Income Tax	35.0	102.2	13.9	12.7	163.7
TBO	-	78.8	0.4	-	79.2
Maintenance	<u>49.5</u>	<u>7.9</u>	<u>4.8</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>653.2</u>	<u>85.5</u>	<u>93.3</u>	<u>1,086.4</u>

COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)

Table 3

Summary of Non-Direct Costs (\$ million)

General Plant, Working Capital and G&A ⁽¹⁾	Compression	Transmission		Metering	Total
		Mainline	Lateral		
General Operating Assets	9.0	1.7	1.0	2.7	14.3
Calgary Offices	3.4	7.3	4.1	1.3	16.1
Field/Service Centres, Vehicles	12.8	2.5	1.4	9.0	25.7
Patrol	-	0.3	0.2	-	0.5
Information Technology	5.1	10.8	6.1	22.3	44.2
General plant total	30.4	22.5	12.8	35.2	100.8
Cash Working Capital	5.0	10.6	6.0	1.8	23.5
Material & Supplies Inventory	3.0	0.5	0.3	0.3	4.1
Linepack Gas	-	2.2	1.3	-	3.5
Unamortized Debt Issue Costs	0.9	2.0	1.1	0.3	4.4
Working capital total	9.0	15.4	8.7	2.5	35.6
Information Technology	2.9	6.1	3.4	12.5	24.9
Customer Service	1.5	3.1	1.8	9.3	15.6
Other Departments	3.1	6.6	3.8	1.1	14.7
General Expenses ⁽²⁾	12.4	26.3	14.9	4.5	58.2
Other Expenses	1.6	3.4	2.0	0.6	7.6
G&A total	21.5	45.5	25.9	28.0	121.0
Total General plant & Working capital	60.9	83.4	47.4	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Table 4

Summary of Total Costs
 (\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service	Transmission Cost Split
Compression	254.4	60.9	315.3	-315.3	0.0	
Mainline	653.2	83.4	736.6	307.9	1,044.5	88%
Lateral	85.5	47.4	132.8	7.4	140.2	12%
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>	
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>	

COH – Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)

Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

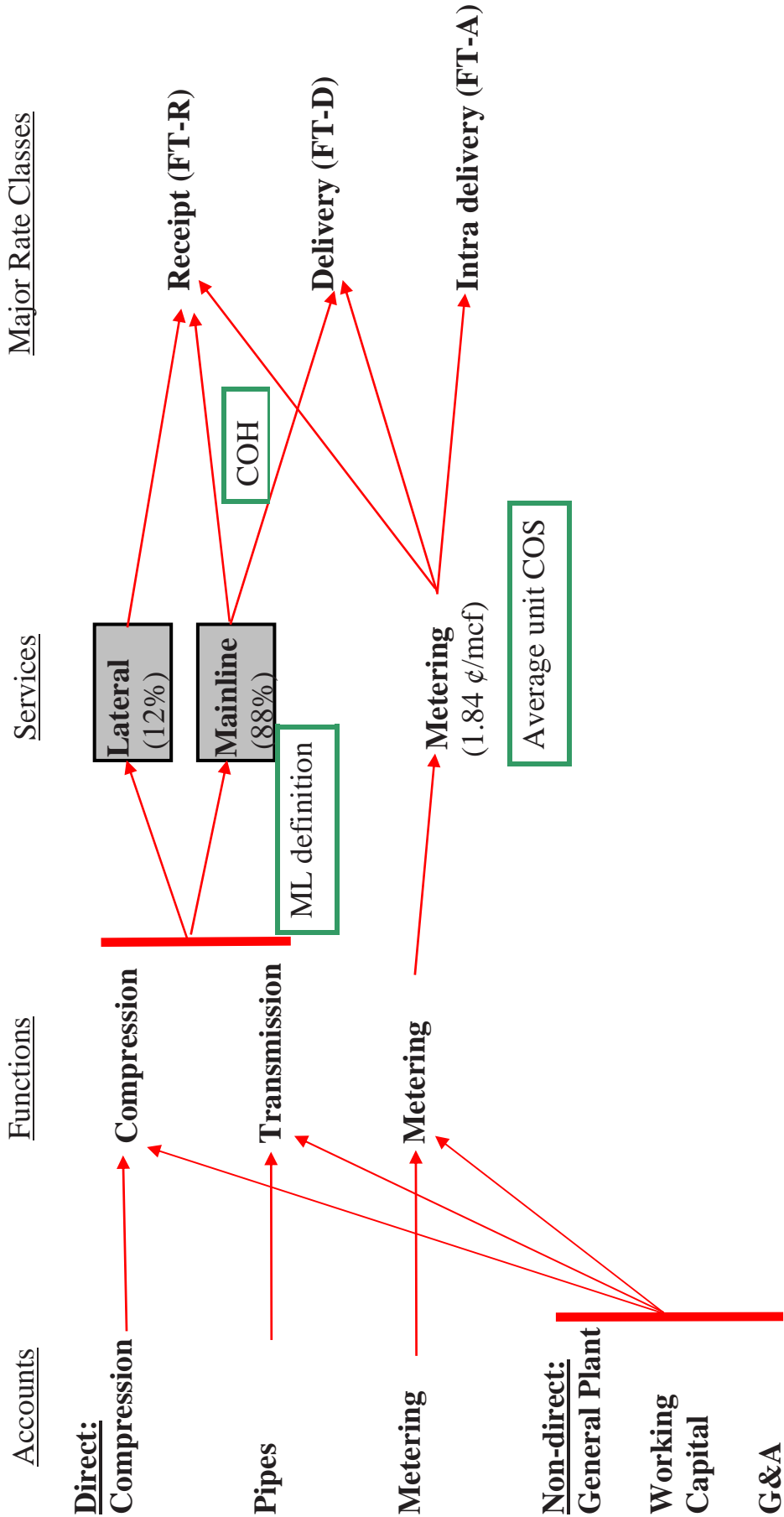
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

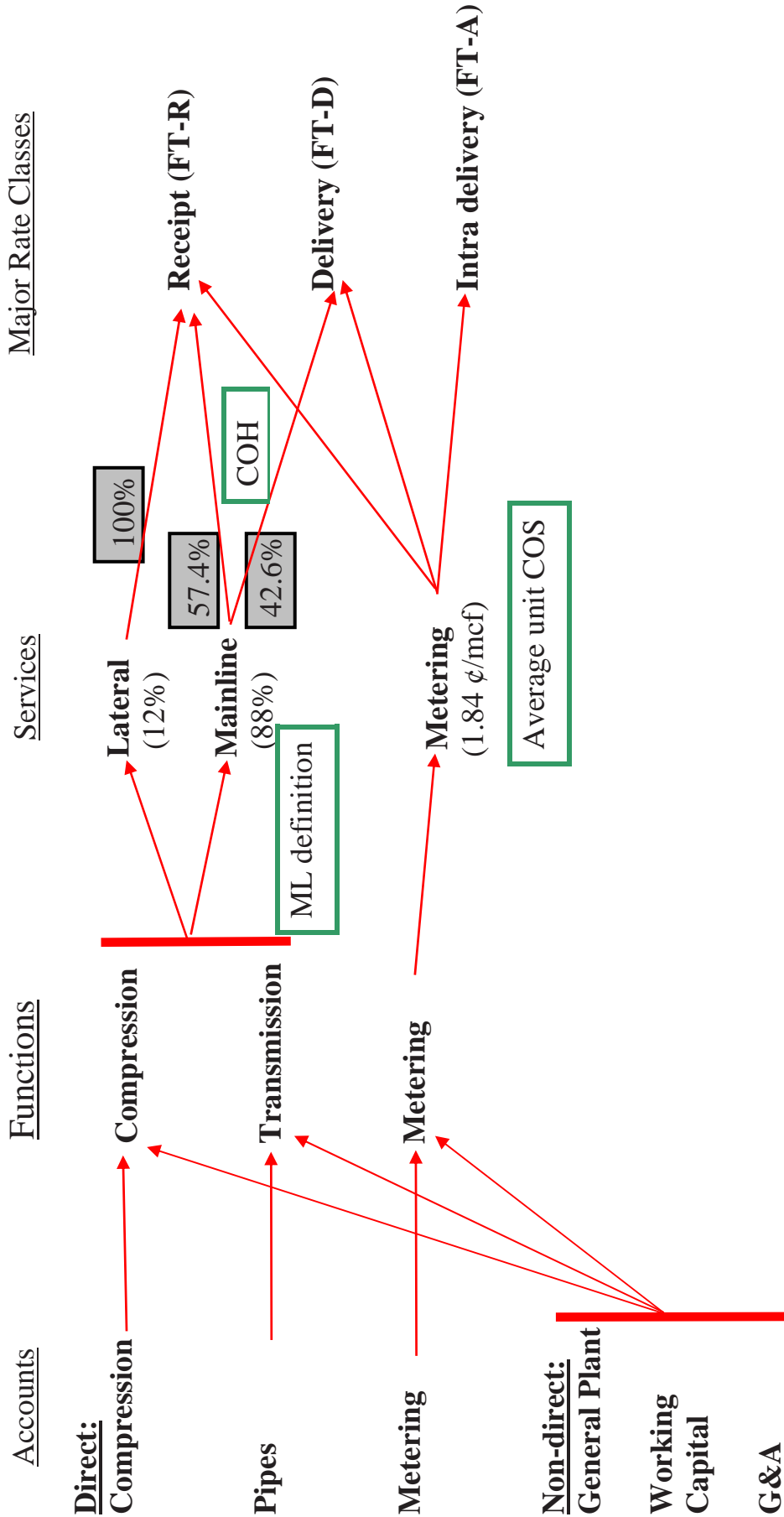
COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Diagram 2

Results of Cost Allocations



COH - Physical Mainline Definition of 12 Inches Diameter or Greater – Alternative 1(c)
Diagram 3

Application of Cost Allocations to Rates Determination



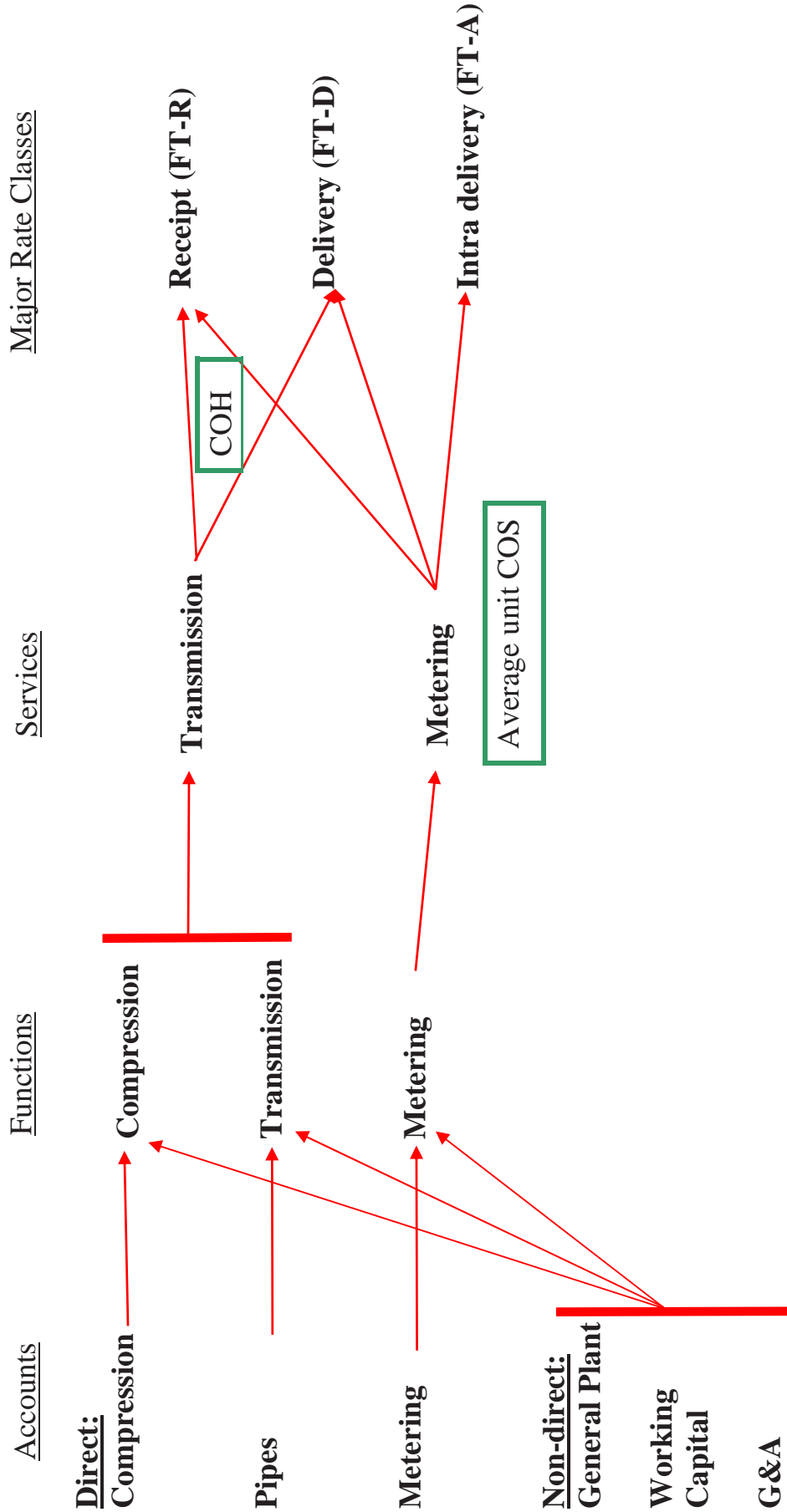
APPENDIX N: COST OF SERVICE RESULTS UTILIZING COH – ALTERNATIVE 2

The contents of this appendix are as follows:

- Diagram 1 illustrates the cost allocation process utilized in generating the cost of service results
- Tables 1 – 5 provide detailed results of the cost allocation process
Specifically:
 - Table 1 is a summary of the transmission assets.
 - Table 2 shows the direct costs for the three functions of compression, transmission and metering.
 - Table 3 shows the non-direct costs for the three functions.
 - Table 4 shows the summary of all costs for the three functions.
 - Table 5 explains the calculation of the unit metering cost.
- Diagram 2 builds on Diagram 1 and illustrates the results of allocating the costs to the various services.
- Diagram 3 builds on Diagram 2 and illustrates the results of allocating the costs to the major rate classes.

COH - Deliveries Extraction Facilities Excluded – Alternative 2
Diagram 1

Overview of Cost Allocations



COH - Deliveries Extraction Facilities Excluded – Alternative 2
Table 1

<u>Summary of Transmission Assets</u> (\$ million)			
	Net Book Value	Length (miles)	Total Cost
Transmission	3,207.4	14,103.0	1,184.7

Note: Net Book Value is as at December 31, 2002

COH - Deliveries Extraction Facilities Excluded – Alternative 2
Table 2

Summary of Direct Costs
 (\$ million)

<u>Direct Costs</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
Operating Return	95.8	317.8	34.8	448.5
Depreciation	69.5	155.7	14.3	239.5
Municipal Tax	4.5	57.3	2.0	63.9
Income Tax	35.0	116.0	12.7	163.7
TBO	-	79.2	-	79.2
Maintenance	<u>49.5</u>	<u>12.7</u>	<u>29.5</u>	<u>91.7</u>
Total Direct Costs	<u>254.4</u>	<u>738.7</u>	<u>93.3</u>	<u>1,086.4</u>

COH - Deliveries Extraction Facilities Excluded – Alternative 2

Table 3

Summary of Non-Direct Costs (\$ million)

<u>General Plant, Working Capital and G&A</u>	<u>(1)</u>	<u>Compression</u>	<u>Transmission</u>	<u>Metering</u>	<u>Total</u>
General Operating Assets		9.0	2.6	2.7	14.3
Calgary Offices		3.4	11.4	1.3	16.1
Field/Service Centres, Vehicles		12.8	3.8	9.0	25.7
Patrol		-	0.5	-	0.5
Information Technology		5.1	16.9	22.3	44.2
General plant total		30.4	35.3	35.2	100.8
Cash Working Capital		5.0	16.6	1.8	23.5
Material & Supplies Inventory		3.0	0.8	0.3	4.1
Linepack Gas		-	3.5	-	3.5
Unamortized Debt Issue Costs		0.9	3.1	0.3	4.4
Working capital total		9.0	24.1	2.5	35.6
Information Technology		2.9	9.5	12.5	24.9
Customer Service		1.5	4.9	9.3	15.6
Other Departments		3.1	10.4	1.1	14.7
General Expenses ⁽²⁾		12.4	41.2	4.5	58.2
Other Expenses		1.6	5.4	0.6	7.6
G&A total		21.5	71.4	28.0	121.0
Total General plant, Working capital & G&A		60.9	130.7	65.7	257.4

Allocated amounts less than \$100,000 show up here as 0.0 due to rounding.

A dash ("-") means the cost item is not applicable to the function.

(1) G&A costs were in table 4-A in the 1999 COS Study.

(2) This combines the two items called General Expenses and Corporate in the 1999 COS Study.

COH - Deliveries Extraction Facilities Excluded – Alternative 2
Table 4

Summary of Total Costs
(\$ million)

	Direct Costs	Gen. Plant, Working Capital and G&A	Total Costs by Function	Allocated Compression	Total Costs by Service
Compression	254.4	60.9	315.3	-315.3	0.0
Transmission	738.7	130.7	869.4	315.3	1,184.7
Metering	<u>93.3</u>	<u>65.7</u>	<u>159.1</u>	<u>0.0</u>	<u>159.1</u>
Totals	<u>1,086.4</u>	<u>257.4</u>	<u>1,343.8</u>	<u>0.0</u>	<u>1,343.8</u>

COH – Deliveries Extraction Facilities Excluded – Alternative 2

Table 5

Calculation of Average Unit Cost per Mcf for the Metering Service

$$P = C \div (V * D)$$

Where

P is the unit cost in dollars per Mcf

C is the total of all costs assigned or allocated to the metering service. This total is the second last figure in the rightmost column of tables 4-A and 4-B, except that it is expressed in dollars instead of millions of dollars.

V is the average commodity volume at all meter stations on the Alberta system, as shown on tables 6-A and 6-B, except that it is expressed in Mcf/day instead of MMcf/day.

D is the number of days in the year. This converts the average volume (“V”) to the total commodity volume for the year.

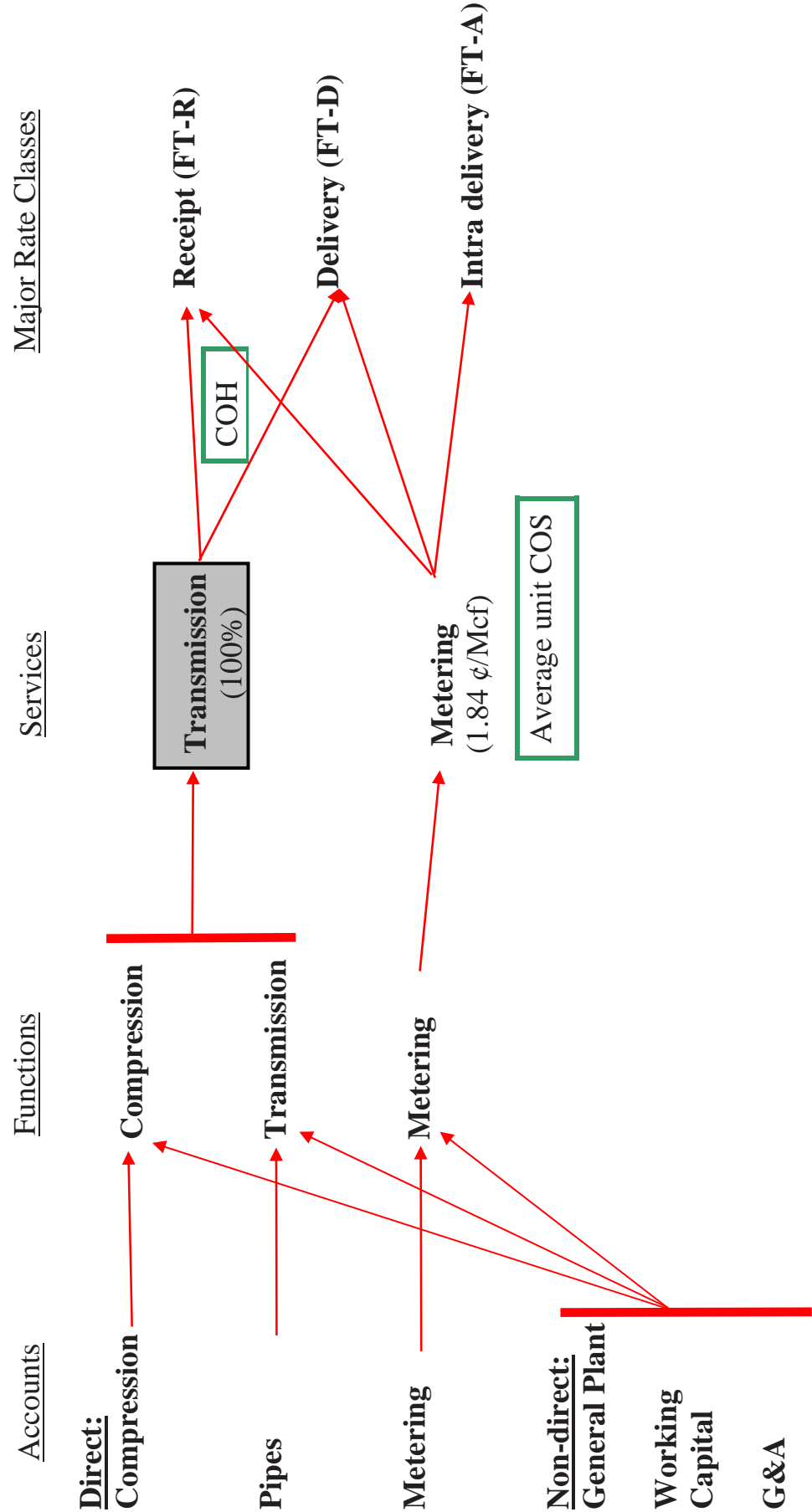
For 2002, the unit cost per Mcf for the metering service was as follows:

$$P = \$159,064,609 \div (23,696,172 \text{ Mcf/day} * 365 \text{ days})$$

$$\text{Therefore, } P = \$0.0184 / \text{Mcf}$$

COH - Deliveries Extraction Facilities Excluded – Alternative 2
Diagram 2

Results of Cost Allocations



COH - Deliveries Extraction Facilities Excluded – Alternative 2
Diagram 3

Application of Cost Allocations to Rates Determination

