



ALBERTA NON-GRID RISK SHARING POOL

SEPTEMBER 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
SEPTEMBER 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The September 2018 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2018.

ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2017 (completed)	1.76% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio increased 2.9 points to 112.8%; discount rate increased by 56 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.76% mfad: 25 bp	Mar. 2018	update valuation: accident year 2018 loss ratio increased 2.7 points to 108.5%; no change to selected discount rate; no change to selected margins for adverse deviations
Mar. 31, 2018 (completed)	1.93% mfad: 25 bp	May 2018	update valuation (roll forward): accident year 2018 loss ratio increased 2.7 points to 111.2%; discount rate increased by 17 basis points; no change to selected margins for adverse deviations
Jun. 30, 2018 (completed)	1.87% mfad 25 bp	Aug. 2018	updated valuation: accident year 2018 loss ratio increased 0.9 points to 112.1%; discount rate decreased by 6 basis points; selected margins for adverse deviations were updated
Sep. 30, 2018		Oct. 2018	update valuation (roll forward):

Under the proposed schedule for fiscal year 2018, the “off-half” valuation quarters ending March 31, 2018 and September 30, 2018 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

1.2 Appointed Actuary and Hybrid Actuarial Services Model

Liam McFarlane of Ernst & Young LLP is Facility Association’s Appointed Actuary (effective as of June 1, 2013).

Facility Association operates under a “hybrid” model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association’s internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

There have been no changes in these descriptions since last month's Highlights.

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

In the **Alberta Treasury Board and Finance Notice 04-2018** (Clarification of Minor Injury Regulation), dated **May 17, 2018**, the Alberta Superintendent of Insurance advised that clarifying amendments have been made to the definition of minor injuries under the Minor Injury Regulation (MIR). With the most recent valuation (June 30, 2018), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2017), impacting the selection of ultimates.

The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead (2017 SCC 28, rendered on Jun 2, 2017)**. Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According to the Supreme Court decision, "*The trial judge found that the ... accident caused S[aadati] psychological injuries, including personality change and cognitive difficulties. ...and awarded S[aadati] \$100,000 for non-pecuniary damages.*" The trial decision was appealed to the BC Court of Appeal where the trial's \$100,000 non-pecuniary award was dismissed. The Supreme Court upheld the \$100,000 non-pecuniary award, determining:

- "*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*"
- "*...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.*"
- "*Expert evidence can assist in determining whether or not a mental injury has been shown, but where psychiatric diagnosis is unavailable, it remains open to a trier of fact to find on other evidence adduced by the claimant that he or she has proven on a balance of probabilities the occurrence of mental injury.*"

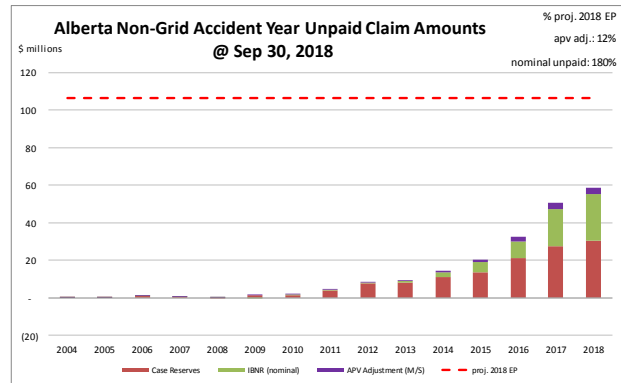
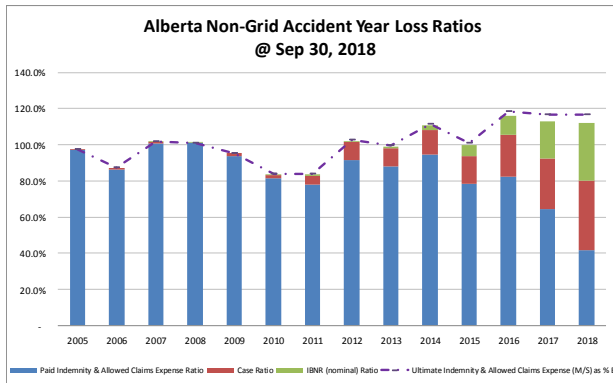
At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, but we continue to review and consider the implications of the judgment.

1.4 Current Provision Summary

The charts at the top of the next page show the current levels of claim liabilities¹ booked by accident year². The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2018 full year earned premium (the red hash-mark line) to provide some perspective.

¹Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

²Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.



"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance (\$12.3 million – see table immediately below) represents 12% of the earned premium projected for the full year 2018 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)

	amt	%
case	126,904	62.4%
ibnr	64,183	31.6%
M/S apv adjust.	12,311	6.1%
M/S total	203,398	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities is in case reserves for this pool. Approximately 70% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 87% of the M/S total

claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

The tables immediately below summarize the premium liabilities and the total policy liabilities.

premium liabilities (\$000s)

	amt	%
unearned prem	60,740	85.6%
prem def/(dpac)	6,602	9.3%
M/S apv adjust.	3,652	5.1%
M/S total	70,994	100.0%

policy liabilities (\$000s)

	amt	%
claim	191,087	69.6%
premium	67,342	24.5%
M/S apv adjust.	15,963	5.8%
M/S total	274,392	100.0%

2 Activity During the Month of September 2018

2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report³.

³There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

Alberta Non-Grid RSP Actual vs Projected Summary: Recorded Transaction Amounts (\$ thousands)

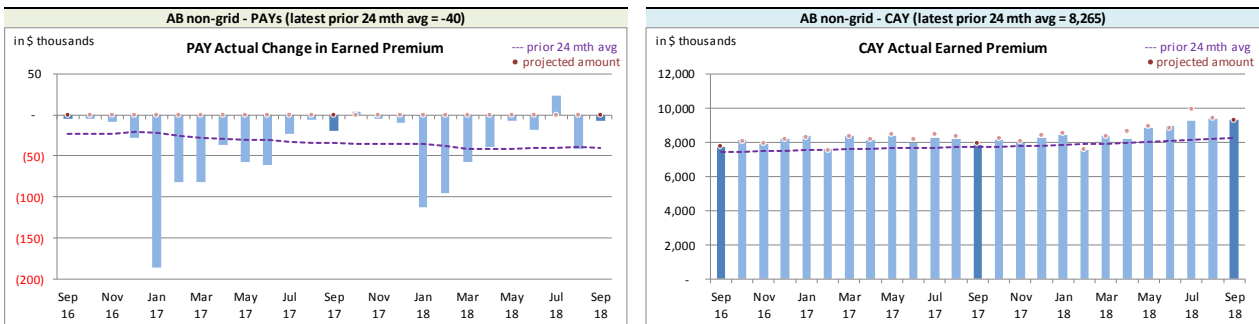
Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	0	0	2,087	613	(2,520)	(1,532)	(434)	(920)
2016	1	1	244	(365)	(2,193)	(1,873)	(1,949)	(2,238)
2017	(7)	(7)	292	(660)	(3,070)	(3,148)	(2,778)	(3,808)
2018	9,285	17	5,167	492	1,016	(2,166)	6,183	(1,674)
TOTAL	9,279	10	7,791	80	(6,768)	(8,720)	1,023	(8,639)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts immediately below show actual **earned premium**⁴ activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta non-Grid RSP Actual Earned Premium by Calendar Month


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

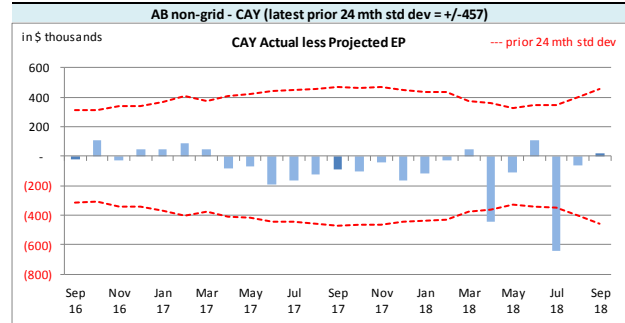
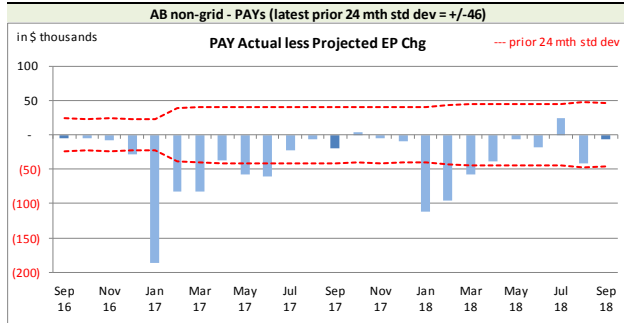
We have noted and investigated the unusually high level of PAYs earned premium activity earlier in 2017 and through 2018, particularly with respect to one member. Management reviewed and was satisfied with the appropriateness of the 2017 transactions, but its investigation of the 2018 transactions confirmed the activity was correct and valid.

The associated variance between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium** changes for other accident years. We do not see this limitation as being significant for our purposes,

⁴Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

but it does mean that the actual less projection variance will equal the actual earned premium change in relation to prior accident years.

*Alberta non-Grid RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*



On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(40)	8,265
std dev	46	457
A-P <> std dev	9	2
% <> std dev	36.0%	8.0%
norm <> std dev	31.7%	31.7%

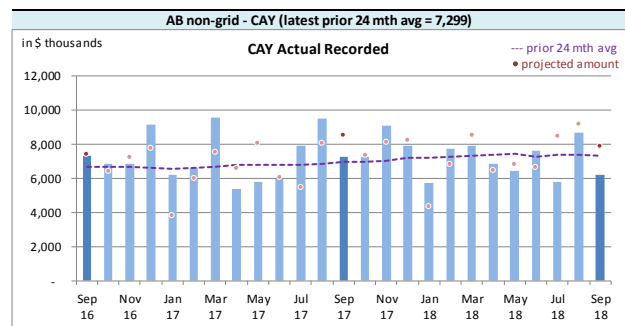
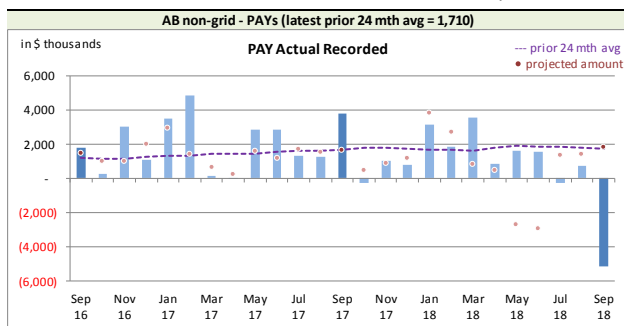
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias⁵, with actuals generally lower than projected, although the magnitude is not high relative to

monthly premium. In addition to the PAYs' bias, the CAY has also shown bias⁶ up until May 2018, with actuals being generally lower than projected, and we have modified our projections processes in response. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*Alberta non-Grid RSP Actual **Recorded** by Calendar Month*

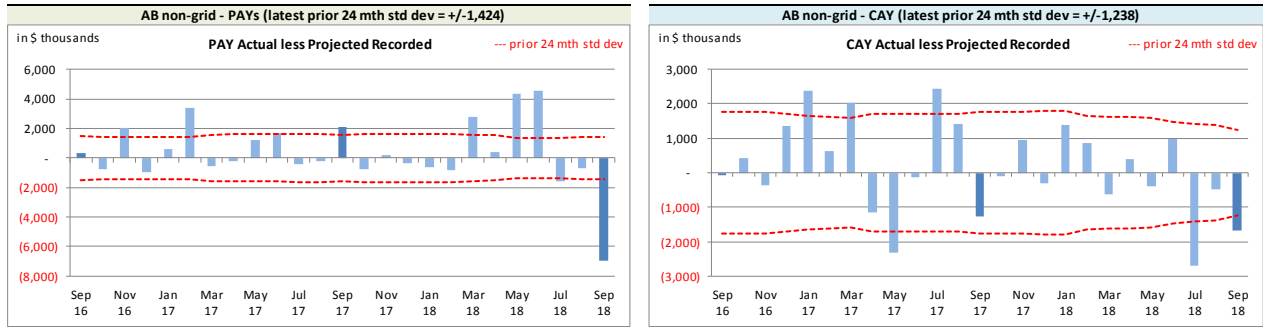


⁵The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

⁶We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at May 2018 had only 6 months where the actuals was higher than projected, and as the 95% confidence range is 7 to 17, bias was indicated.

Recorded activity variances from the previous month’s projections are shown in the charts immediately below, including the “prior 24-month standard deviation” levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*



On Latest \$ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	1,710	7,299
std dev	1,424	1,238
A-P <> std dev	9	6
% <> std dev	36.0%	24.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 36% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed no better than

simply projecting the prior 24-month average amount (assuming it follows a normal distribution). We have implemented changes in an attempt to address this. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY **recorded** activity was lower than the projected by more than one standard deviation. In large part, this was due to a member submitting correcting case reserve transactions for which provisions have been held since last year (and discussed further on in this section). The corrections were reasonably aligned with FA management’s previously held provisions (which have now been released as a result).

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 24% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The CAY **recorded** variance was outside of one standard deviation. The activity was reviewed and confirmed. While we believe it is largely process variance, the member correcting PAYs case transactions also had significant CAY case transactions, that may also have been corrections related to CAY case transactions submitted earlier in the year.

As noted in the last eight monthly Actuarial Highlights, FA management was notified on January 31, 2018 by a member of a potential recorded case reserve overstatement (the same member discussed in the preceding paragraphs). Furthermore, during the March 31, 2018 valuation, FA management was advised of an additional and separate recorded case reserve understatement primarily due to incorrect reporting after FA’s October 31, 2017 fiscal year end. Management investigated and estimated the overall overstatement for the Alberta non-Grid RSP as at the latest valuation (June 30,

2018) as indicated in the table at the top of the next page.

Estimated case reserve overstatement as at Jun 30, 2018

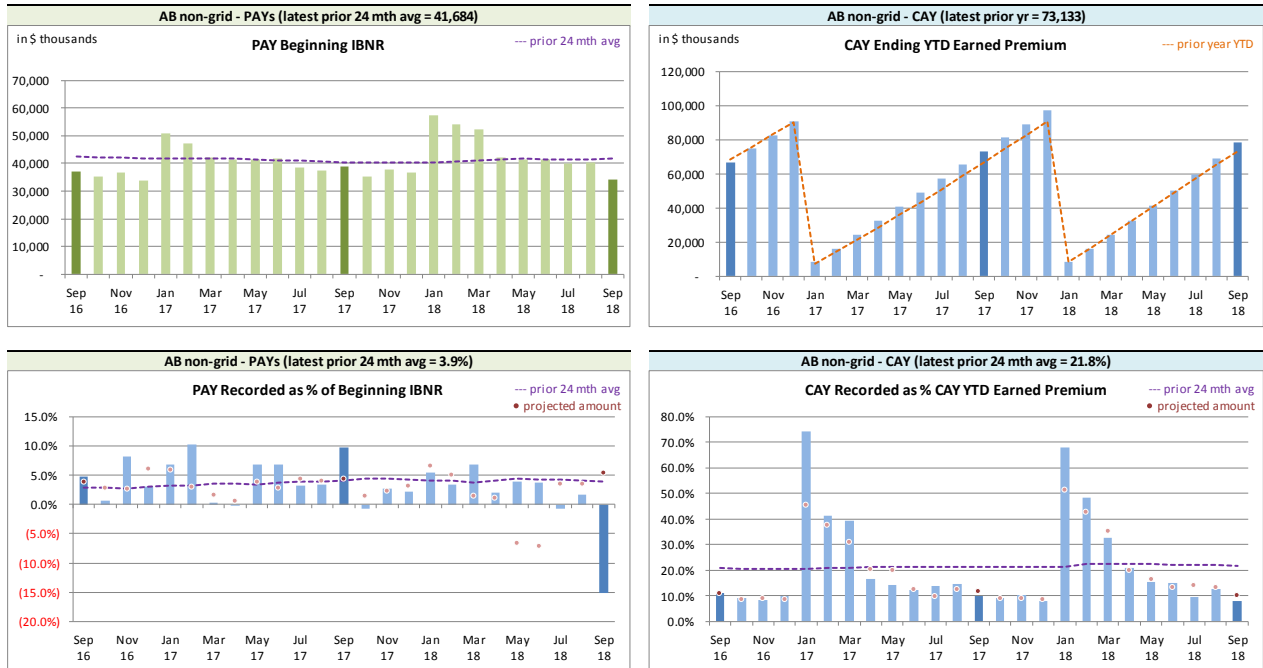
<u>overstatement / (understatement)</u>	
Accident Year	Total Case Reserve Overstatement (\$'000s)
2010	(171)
2011	(239)
2012	-
2013	(92)
2014	(104)
2015	518
2016	2,554
2017	2,529
Total	4,995

With the latest valuation (June 30, 2018), prior accident years' ultimates selections have taken into account the member's misstatement of case reserves (both the original amount as notified, and the subsequent amount, with the combination of the two being summarized in the table above). During the month of Sep 2018, the member submitted correcting case reserve transactions related to PAYs 2010-2017 inclusive. The corrections were largely in line with FA management's expectations, and the associated provisions previously held by FA management have been removed as a result.

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity.

Alberta non-Grid RSP Levels that influence⁷ Recorded activity by Calendar Month



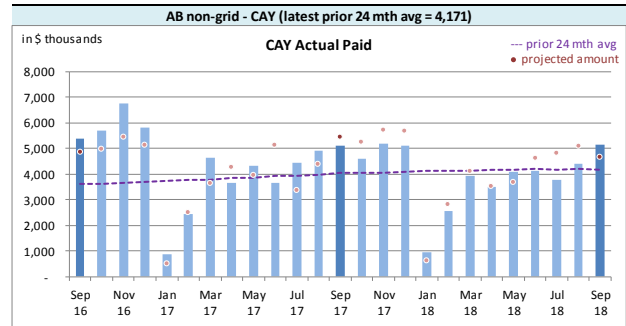
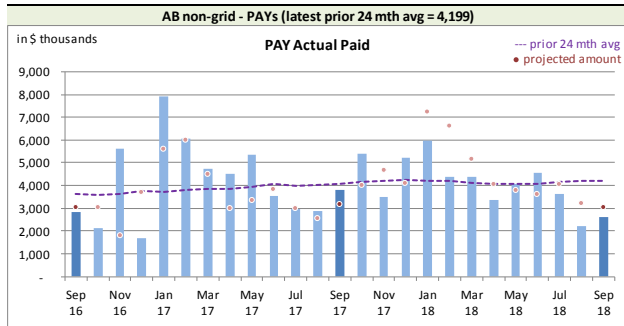
We track beginning prior accident years’ IBNR as **recorded** activity “comes out of” IBNR. Changes in the prior accident years’ beginning IBNR (see upper left chart above) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

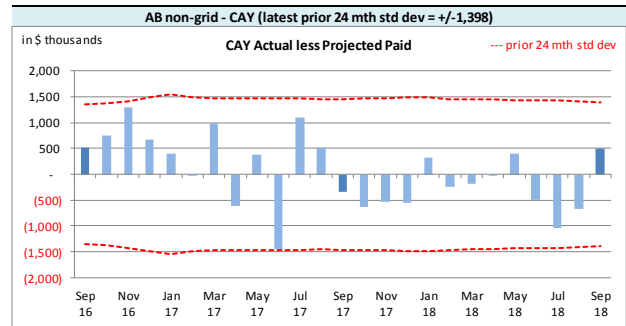
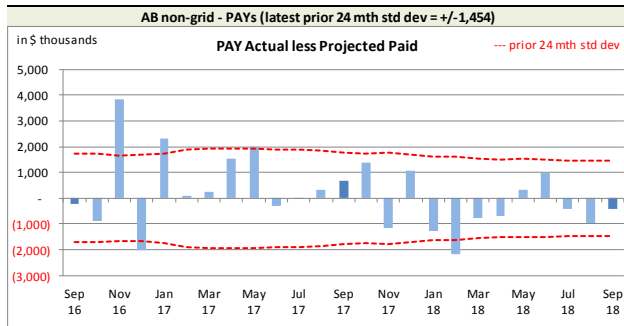
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

*Alberta non-Grid RSP Actual **Paid** activity by Calendar Month*


Paid activity variances from the previous month’s projections are shown in the charts immediately below, including the “prior 24-month standard deviation” levels to show how the variances from projection compare with historical standard deviations.

*Alberta non-Grid RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*


On Latest \$ thousands			
	Paid	PAYS	CAY
Mthly Avg Paid (prior 24 mths)	4,199	4,171	
std dev	1,454	1,398	
A-P <> std dev	5	-	
% <> std dev	20.0%	0.0%	
norm <> std dev	31.7%	31.7%	

With respect to **paid** indemnity & allowed claims expense, 20% of the prior accident years’ (PAYS) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month

average amount (assuming it follows a normal distribution). Bias has not been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **paid** variances fell outside of one standard deviation 0% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. While bias has not been indicated at a 95% confidence level on a lagging 24-month basis this month, it was indicated for each month from November 2015 through to September 2017. We made adjustments to our projection process to reflect this, and they appear to have been somewhat successful.

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.

Alberta non-Grid RSP Levels that influence⁸ Paid activity by Calendar Month



We track beginning prior accident years’ unpaid balance (case and IBNR) as **paid** activity “comes out of” the unpaid balance. Changes in the prior accident years’ beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An “ultimate loss ratio matching method” (described in section 3) is used to determine the month’s IBNR⁹, and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the projections and actuals were based on the applicable valuation. The table at the top of the next page summarizes variances in provisions included in this month’s Operational Report and the associated

⁸Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

⁹For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

one-month projections from last month’s Report.

Alberta Non-Grid RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

Table 02

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	10,247	920	(2,663)	32	5,910	(64)	13,494	888
2016	9,169	2,239	(1,540)	(19)	3,677	45	11,306	2,265
2017	19,929	3,800	(2,458)	(33)	5,841	80	23,312	3,847
2018	24,838	1,693	(2,756)	23	6,300	(54)	28,382	1,662
TOTAL	64,183	8,652	(9,417)	3	21,728	7	76,494	8,662

The IBNR provision is \$8.7 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month’s Operational Report and the one-month projections from last month’s Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

Alberta Non-Grid RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	6,602	138	3,652	71	10,254	209
balance as % unearned premium:	10.9%	-	6.0%	-	16.9%	-
actual unearned premium:	60,740					
less projected:	1,217					

3 Ultimate Loss Ratio Matching Method

An “ultimate loss ratio matching method” continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

- (a) Earned premium to-date
- (b) Ultimate loss¹⁰ ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹¹, including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 112.6% rather than 112.1% (the valuation ultimate ratio for accident year 2018), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Non-Grid RSP Summary of Operations due to rounding.)

¹⁰“Loss” here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances (“Expense Allowance” in the Operational Report).

¹¹Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

*Alberta Non-Grid RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary
(\$ thousands)*

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(10,191)	(13.1%)	(3,456)	(4.4%)	(13,647)	(17.5%)	(161)	2.2%
CAY	87,691	112.6%	3,544	4.6%	91,235	117.2%	10,746	(0.1%)
TOTAL	77,501	99.5%	88	0.1%	77,589	99.6%	10,586	1.9%

(“% EP” based on 2018 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month’s exposure and regular changes to actuarial present value adjustments as the year ages.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month’s Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The “Total IBNR” from this exhibit is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Non-Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month’s Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Aug. 2018	Actual Sep. 2018	Projected Oct. 2018	Projected Nov. 2018	Projected Dec. 2018
	2004	42	42	42	42	42
	2005	13	13	13	12	12
	2006	70	71	69	67	64
	2007	136	135	131	124	116
	2008	49	50	49	47	43
	2009	43	47	45	43	43
	2010	503	406	398	379	349
	2011	851	681	663	635	588
	2012	1,037	1,105	1,074	1,029	960
discount rate	2013	1,246	1,222	1,188	1,138	1,057
1.87%	2014	3,096	2,995	2,926	2,724	2,594
	2015	6,088	6,727	6,650	6,168	5,993
interest rate margin	2016	9,375	11,306	11,081	10,837	10,601
25 basis pts	2017	20,563	23,312	23,045	22,551	21,906
	2018	23,819	28,382	32,390	34,678	36,912
	TOTAL	66,931	76,494	79,764	80,474	81,280
	Change		9,563	3,270	710	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B

IBNR

TABLE EXHIBIT B

Amounts in \$000s

IBNR	Ultimate Loss Ratio	Accident Year	Actual Aug. 2018	Actual Sep. 2018	Projected Oct. 2018	Projected Nov. 2018	Projected Dec. 2018
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	5
	87.4%	2006	15	16	16	15	14
	101.8%	2007	89	89	87	83	76
	101.1%	2008	48	49	48	46	42
	95.3%	2009	(32)	(28)	(27)	(26)	(24)
	83.9%	2010	414	317	311	295	268
	83.5%	2011	611	452	443	421	383
	102.2%	2012	565	634	621	590	537
	98.9%	2013	763	758	743	706	642
	110.7%	2014	2,318	2,218	2,174	1,978	1,879
	99.8%	2015	4,981	5,701	5,644	5,192	5,036
	115.8%	2016	7,219	9,169	8,986	8,806	8,630
	113.0%	2017	17,159	19,929	19,730	19,335	18,755
	112.1%	2018	20,612	24,838	28,486	30,446	32,365
		TOTAL	54,803	64,183	67,303	67,928	68,644
		Change		9,380	3,120	625	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Aug. 2018	Actual Sep. 2018	Projected Oct. 2018	Projected Nov. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	59,313	60,740	59,614	57,786	54,117
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	117.2%	116.9%	116.5%	116.0%	115.5%
(3) expected future costs {(1) x (2)}	69,537	70,994	69,432	67,055	62,519
(4) premium deficiency / (deferred policy acquisition cost)	10,224	10,254	9,818	9,269	8,402
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	111.2%	110.9%	110.5%	110.1%	109.6%
(6) expected future costs {(1) x (5)}	65,958	67,342	65,859	63,604	59,301
(7) premium deficiency / (deferred policy acquisition cost)	6,645	6,602	6,245	5,818	5,184

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2018, broken down by component.

Alberta non-Grid ending 2018		Projected Balances as at Dec. 31, 2018 (\$000s)								
Acc Yr	nominal values			actuarial present value adjustments (apvs)					TOTAL	
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD		Total apvs
2004	26	36	62	-	-	6	-	6	6	68
2005	67	5	72	-	-	7	-	7	7	79
2006	688	14	702	(21)	3	70	(2)	68	50	752
2007	523	76	599	(20)	2	60	(2)	58	40	639
2008	(21)	42	21	(1)	-	2	-	2	1	22
2009	1,079	(24)	1,055	(40)	5	106	(4)	102	67	1,122
2010	1,207	268	1,475	(69)	9	148	(7)	141	81	1,556
2011	3,402	383	3,785	(178)	23	378	(18)	360	205	3,990
2012	6,789	537	7,326	(322)	44	733	(32)	701	423	7,749
2013	7,319	642	7,961	(390)	48	796	(39)	757	415	8,376
2014	10,545	1,879	12,424	(547)	75	1,242	(55)	1,187	715	13,139
2015	12,887	5,036	17,923	(842)	108	1,774	(83)	1,691	957	18,880
2016	19,214	8,630	27,844	(1,420)	167	3,397	(173)	3,224	1,971	29,815
2017	25,287	18,755	44,042	(2,290)	264	5,461	(284)	5,177	3,151	47,193
PAYs (sub-total):	89,012	36,279	125,291	(6,140)	748	14,180	(699)	13,481	8,089	133,380
CAY (2018)	38,358	32,365	70,723	(3,536)	424	8,062	(403)	7,659	4,547	75,270
claims liabilities:	127,370	68,644	196,014	(9,676)	1,172	22,242	(1,102)	21,140	12,636	208,650
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	54,117	5,184	59,301	(2,244)	236	5,432	(206)	5,226	3,218	62,519
policy liabilities:			255,315	(11,920)	1,408	27,674	(1,308)	26,366	15,854	271,169

*Total may not be sum of parts, as apvs apply to future costs within UPR

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2018)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	8.8%	10.0%
2014	10.0%	10.0%	8.2%	10.0%
2015	10.0%	10.0%	8.6%	9.9%
2016	12.5%	10.0%	8.4%	12.2%
2017	12.4%	10.0%	12.5%	12.4%
2018	12.1%	10.0%	6.1%	11.4%
2019	11.8%	10.0%	5.3%	9.2%
prem liab	11.8%	10.0%	5.3%	9.2%

discount rate: 1.87%
margin (basis points): 25

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2018 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2018, but are based on more up-to-date information). We have included the most recent valuation selection (1.87%), the prior valuation assumption (1.93%) and the prior fiscal year end valuation assumption (1.76%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2018 projected Unpaid								
AY	0.87%	1.37%	1.87%	2.37%	2.87%	3.37%	1.93%	1.76%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	700	694	688	683	677	672	688	690
2007	427	423	419	416	412	408	419	420
2008	9	9	9	9	9	9	9	9
2009	1,270	1,257	1,244	1,232	1,220	1,207	1,243	1,247
2010	1,360	1,342	1,325	1,309	1,293	1,277	1,323	1,329
2011	3,568	3,523	3,478	3,435	3,393	3,351	3,473	3,488
2012	8,175	8,077	7,982	7,890	7,799	7,712	7,972	8,004
2013	8,737	8,621	8,508	8,399	8,293	8,191	8,496	8,534
2014	12,490	12,340	12,194	12,053	11,914	11,781	12,178	12,226
2015	20,606	20,343	20,088	19,841	19,598	19,364	20,060	20,145
2016	32,073	31,626	31,192	30,771	30,363	29,967	31,146	31,290
2017	49,998	49,283	48,591	47,920	47,264	46,633	48,511	48,746
2018	75,721	74,687	73,680	72,704	71,759	70,851	73,563	73,906
Total	215,134	212,225	209,398	206,662	203,994	201,423	209,081	210,034
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.87%	1.37%	1.87%	2.37%	2.87%	3.37%	1.93%	1.76%
Total	5,736	2,827	-	(2,736)	(5,404)	(7,975)	(317)	636
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.87%	1.37%	1.87%	2.37%	2.87%	3.37%	1.93%	1.76%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1.7%	0.9%	-	(0.7%)	(1.6%)	(2.3%)	-	0.3%
2007	1.9%	1.0%	-	(0.7%)	(1.7%)	(2.6%)	-	0.2%
2008	-	-	-	-	-	-	-	-
2009	2.1%	1.0%	-	(1.0%)	(1.9%)	(3.0%)	(0.1%)	0.2%
2010	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(0.2%)	0.3%
2011	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.7%)	(0.1%)	0.3%
2012	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	(0.1%)	0.3%
2013	2.7%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	(0.1%)	0.3%
2014	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	(0.1%)	0.3%
2015	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(0.1%)	0.3%
2016	2.8%	1.4%	-	(1.3%)	(2.7%)	(3.9%)	(0.1%)	0.3%
2017	2.9%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(0.2%)	0.3%
2018	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(0.2%)	0.3%
Total	2.7%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(0.2%)	0.3%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Components of Member Statement IBNR (i.e. “Discounted”) Change During Month

RSP		Alberta Non-Grid			M/S IBNR - in \$000s		
AccountCode Desc		IBNR - Discou					
AccYear	Values						
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2004	42	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	70	(1)	2	-	1	1.4%	71
2007	136	(3)	2	-	(1)	(0.7%)	135
2008	49	-	1	-	1	2.0%	50
2009	43	(2)	6	-	4	9.3%	47
2010	503	(6)	(91)	-	(97)	(19.3%)	406
2011	851	(13)	(157)	-	(170)	(20.0%)	681
2012	1,037	(20)	88	-	68	6.6%	1,105
2013	1,246	(23)	(1)	-	(24)	(1.9%)	1,222
2014	3,096	(178)	77	-	(101)	(3.3%)	2,995
2015	6,088	(322)	961	-	639	10.5%	6,727
2016	9,375	(334)	2,265	-	1,931	20.6%	11,306
2017	20,563	(1,098)	3,847	-	2,749	13.4%	23,312
2018	23,819	2,901	1,662	-	4,563	19.2%	28,382
Grand Total	66,931	901	8,662	-	9,563	14.3%	76,494

EXHIBIT G

Page 2 of 2

Components of IBNR (i.e. “Undiscounted”) Change During Month

RSP **Alberta Non-Grid**
AccountCode Desc **IBNR - Undiscounted**

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	15	-	1	-	1	6.7%	16
2007	89	(1)	1	-	-	-	89
2008	48	-	1	-	1	2.1%	49
2009	(32)	-	4	-	4	(12.5%)	(28)
2010	414	(4)	(93)	-	(97)	(23.4%)	317
2011	611	(6)	(153)	-	(159)	(26.0%)	452
2012	565	(6)	75	-	69	12.2%	634
2013	763	(8)	3	-	(5)	(0.7%)	758
2014	2,318	(162)	62	-	(100)	(4.3%)	2,218
2015	4,981	(299)	1,019	-	720	14.5%	5,701
2016	7,219	(289)	2,239	-	1,950	27.0%	9,169
2017	17,159	(1,030)	3,800	-	2,770	16.1%	19,929
2018	20,612	2,533	1,693	-	4,226	20.5%	24,838
Grand Total	54,803	728	8,652	-	9,380	17.1%	64,183