



INS CONSULTANTS, INC.

Insurance Regulatory Consultants

419 S. 2nd Street
New Market, Suite 206
Philadelphia, PA 19147
Phone: (215) 625-9877
Fax: (215) 627-7104

DATE: October 1, 2015

TO: W. Harding Drane Jr., Deputy Insurance Commissioner, Delaware Department of Insurance

FROM: Allan R. Becker, Property/Casualty Actuary, INS Consultants, Inc.

SUBJECT: 2015 DCRB Workers Compensation Residual Market Rates and Voluntary Market Loss Costs -- Bureau Filing No. 1502, Dated August 28, 2015

INS Consultants, Inc. (INS) has been engaged by the Delaware Insurance Department (the Department) to review the Delaware Compensation Rating Bureau (DCRB) Workers Compensation Filing No. 1502, dated August 28, 2015. The filing requests an overall rate level change of +14.92% for residual market rates and requests an overall loss cost level change of +15.03% for voluntary market loss costs. These filed amounts are identical to the indicated changes for both residual market rates and voluntary market loss costs as determined by the DCRB.

INS has reviewed the filing submitted by the DCRB. INS used the experience data along with other information in the filing to calculate indicated changes in residual market rates and voluntary market loss costs. The INS indicated changes are +7.99% and +8.10% respectively. The attached exhibits present the derivation of these figures.

The following table compares the DCRB and INS indicated changes:

	<u>DCRB</u>	<u>INS</u>
Residual Market Rates	+14.92%	+7.99%
Voluntary Market Loss Costs	+15.03%	+8.10%

The indicated changes are based upon policy year premium and loss data through policy year 2013 evaluated as of December 31, 2014.

This analysis was performed by Allan R. Becker, FCAS, MAAA and was peer reviewed by Robert W. Gardner, FCAS, MAAA.

Details of the INS analysis

In the derivation of the indications, INS reviewed and accepted the following key parameters as presented by the DCRB:

INS reviewed and accepted the Permissible Loss and Loss Adjustment Expense (“LAE”) Ratio of 68.80%. This acceptance is based on the review and acceptance of the projected figures for underwriting expenses and the required need for profit. Note that this acceptance relates to the determination of the residual market rates, since the voluntary market loss costs are calculated without a provision for expenses (other than LAE) and profit. The expense and profit component of an insurer’s final rates for the voluntary market are determined in the adoption filings to be submitted to the Department.

INS reviewed and accepted the July 1, 2016 benefit change of +0.64% together with past benefit level changes included in the adjustment of past losses.

INS reviewed and accepted the Senate Bill 1 (SB1) adjustment of -17.4%, the Senate Bill 238 (SB238) adjustment of -0.42%, and the House Bill 175 (HB175) adjustment of -6.03% applied to medical losses. INS reviewed and accepted the House Bill 373 (HB373) adjustment of -32.93% applied to medical losses. INS noted the comments of the DCRB in discussing the implementation of HB373 and the likelihood of achieving the intended reduction in medical costs. The indicated changes in residual market rates and voluntary market loss costs developed by INS assume that the medical cost reductions outlined in HB373 will be fully realized. The SB1 adjustment is consistent with the Department’s agreement from earlier filings. The SB238, HB175, and HB373 adjustments are based on analyses included in the DCRB filing.

INS reviewed and accepted the Excess Loss Factor of 11.55% as derived by the DCRB. The data in the filing supports the use of this factor to account for losses above the loss limits level used in the estimation of the indicated change.

INS reviewed and accepted the Loss Adjustment Expense Factor of 1.1998 as derived by the DCRB. The data in the filing supports the use of this factor to account for loss adjustment expenses in the projection of future costs.

INS reviewed and accepted the premium development factors for projecting the final premiums by policy year (PY) after all premium adjustments will have been made.

The following items require additional review and discussion.

Loss Development Factors: The DCRB selected four sets of loss development factors (LDFs), Incurred Loss Indemnity, Paid Loss Indemnity, Incurred Loss Medical, and Paid Loss Medical, using limited losses as described in the filing. DCRB selections were based on the use of 4 year averages and various fitting techniques. A Paid Tail factor was not separately determined. The DCRB adjusted Paid LDFs to an incurred basis at the tail point (age 25).

INS also selected four sets of LDFs (Exhibit 5, Pages 1-4) and reviewed LDFs using 3 year, 4 year, 5 year, and 8 year averages. The historical LDFs, along with the 4 year and 8 year averages are displayed in Exhibit 5. The INS selected LDFs were based on the 4 year average factors.

In selecting a Paid Tail Factor (Exhibits 5.1 and 5.2), INS used an exponential decay model with varying length of tail assumptions to produce a range of tail estimates. INS varied the length of tail assumptions from 25 additional years beyond age 25 to 40 additional years. The decay rate used in the model represents the expected year to year decrease observed in paid workers compensation benefits as each policy year ages. For indemnity benefits, injured worker mortality, claim resolution, and the impact of the applicable loss limit contribute to the incremental decay of paid benefits from year to year. The decay rate for paid medical losses is generally slower than indemnity losses due to the impact of medical inflation. The decay rate applicable at age 25 was selected based on the observed decay rates from a set of fitted Paid LDFs. The fitted LDFs were determined by an inverse power curve using the selected Paid LDFs from ages 14 to 25.

The Incurred Tail Factor was derived from the Paid Tail Factor through the use of a selected incurred loss to paid loss ratio (Inc/Pd) at age 25. Historical incurred loss to paid loss ratios at ages 25, 26, 27, and 28 were reviewed to provide a range of data observations at the mature ages of development. The Incurred Tail Factor results from dividing the Paid Tail Factor by the selected Inc/Pd ratio.

Selections of Ultimate Loss: Similar to past filings, the DCRB used the average of the Incurred Loss Development Method and the Paid Loss Development Method to select estimates of ultimate indemnity and medical loss for all policy years. In using the Paid Loss Development

Method, the DCRB adjusts the Paid Loss Development Method to an incurred loss basis at the tail point. This approach to paid loss development is also similar to past DCRB filings.

The INS selections of ultimate loss are shown in Exhibit 4. For policy years 2004 through 2011, INS selected estimates of ultimate indemnity and medical loss using the average of the Incurred Loss Development and Paid Loss Development Methods. For the two most recent policy years used in filing, 2012 and 2013, INS incorporated two additional methods: the Bornhuetter-Ferguson Incurred Method and the Bornhuetter-Ferguson Paid Method. For the 2012 policy year, INS used the average of all four methods, Incurred Loss Development, Paid Loss Development, Bornhuetter-Ferguson Incurred, and Bornhuetter-Ferguson Paid, for the selected estimate of ultimate indemnity and medical loss. For the 2013 policy year, INS used the average of the Incurred Loss Development, Bornhuetter-Ferguson Incurred, and Bornhuetter-Ferguson Paid Methods for the selected estimate of ultimate indemnity and medical loss – removing the most leveraged method (Paid Loss Development Method) from the selection process for the most immature policy year.

The Bornhuetter-Ferguson Method is a generally accepted actuarial method for estimating ultimate loss - particularly suited for immature years where loss development methods can have a significant and distorting leveraging impact. The Bornhuetter-Ferguson Method is an expected loss ratio approach with a scheduled amortization of reserves based on the expected loss ratio and the selected loss development pattern. For the Bornhuetter-Ferguson Incurred Method, the expected loss ratio and the incurred LDFs are used to determine the expected ratio of Incurred But Not Reported Reserves (IBNR) to earned premium at each development age. This ratio is then added to the actual incurred loss ratio at each development age to produce an estimate of the ultimate loss ratio. For the Bornhuetter-Ferguson Paid Method, the expected loss ratio and the paid LDFs are used to determine the expected ratio of total reserves (case and IBNR) to earned premium. This ratio is then added to the actual paid loss ratio to produce an estimate of the ultimate loss ratio.

The determination and selection of the Initial Expected Loss Ratio (IELR) used in each Bornhuetter-Ferguson Method is shown in Exhibit 6. For the 2012 and 2013 IELRs, INS selected the average of the ultimate loss ratios from the four prior policy years after consideration of trend.

Frequency Trend: INS reviewed the DCRB's methods and discussion concerning frequency trend. Although claim frequency in Delaware has generally been declining, an increase (+5.8%) was observed for the most recent policy year, 2013. The DCRB also noted that

there was minimal change in claim frequency during policy years 2009 and 2010 – a time period where claim frequency was thought to be impacted by recessionary conditions.

In selecting a frequency trend for the 2015 filing, the DCRB adopted the same approach as utilized in the 2014 filing which relied on the average of two trend calculations. The first trend estimate was based on an exponential curve of best fit using the observations from the 2007 to 2013 policy years (7 year exponential regression). This produced a trend estimate of -3.8%. The second frequency trend estimate was also based on an exponential fit of seven observations, but with adjustments to remove policy years 2009 and 2010. This produced a -6.8% trend estimate. The DCRB selected the average of these two, -5.3%, for the frequency trend.

INS calculated frequency trend estimates (Exhibit 3, Page 1) using exponential regression over various time periods (13 years, 10 years, 7 years, 5 years, and 4 years). This produced frequency trend estimates ranging from -6.0% to -3.7%. The strong uptick in claim frequency observed in 2013 after a long period of prevailing decreases raises a question about the direction of claim frequency in future time periods. However, in the absence of a strong rationale for the increase in claim frequency observed in 2013, its influence on future claim frequency may not be significant.

INS selected a frequency trend of -4.9% based on a 75/25 weighting of the 10 year and 7 year fits. This approach incorporates the frequency increase from the most recent policy year into the regression fit but places more reliance on the longer historical time frames.

INS also analyzed trend to be used in the calculation of IELRs discussed above. For the 2013 IELRs, frequency trend calculations were based on data points from 2001 to 2012, thus removing the 2013 observation. Similarly, for the 2012 IELRs, frequency trend calculations were based on data points from 2001 to 2011, removing the 2012 and 2013 observations. INS selected frequency trends of -6.0% for the 2013 IELRs and -6.3% for the 2012 IELRs.

Indemnity Severity Trend: Similar to previous filings, the DCRB used a 7 year exponential regression (PY 2007 to 2013) to select an indemnity severity trend of +7.7%.

INS calculated indemnity severity trends (Exhibit 3, Page 2) using exponential regression over 10 year, 7 year, 5 year, and 4 year periods which produced estimates ranging from +4.8% to +6.8%. INS selected an indemnity trend of +5.0% based on a 75/25 weighting of the 10 year and 7 year fits. INS also reviewed Exhibit 7 from the DCRB filing to observe average indemnity incurred claim costs at age 1 and age 2. INS used an 8 point exponential regression on the

average indemnity incurred amounts at age 2 for policy years 2004 to 2011 to produce an implied indemnity severity trend of +4.6%.

Medical Severity Trend: The DCRB selected medical severity trends for three contiguous time periods. For medical costs prior to and up through September 1, 2008, the DCRB used a 7 year exponential regression (PY 2007 to 2013) to select a medical severity trend of +10.8%. In recognition of the potential impact of SB1 on medical severity trend, for the time period from September 1, 2008 to January 31, 2013, the +10.8% trend was reduced by 1.5 points to +9.3%. For the time period after January 31, 2013, the +9.3% trend was further reduced by 0.3 points to +9.0% in recognition of SB238's impact on medical severity trend.

INS calculated medical severity trends (Exhibit 3, Page 2) using exponential regression over 10 year, 7 year, 5 year, and 4 year periods which produced estimates ranging from +6.1% to +11.1%. In selecting a medical severity trend for the period up to and through September 1, 2008, INS also considered a 4 year exponential regression on policy years 2004 to 2007 which produced a trend estimate of +9.0%.

INS selected a medical severity trend of +9.3% for the time period up through September 1, 2008. INS followed the DCRB approach of adjusting medical severity trend for the impacts of SB1 and SB238 to produce a trend of +7.8% for the period from September 1, 2008 to January 31, 2013 and a trend of +7.5% for the period after January 31, 2013.

INS also reviewed Exhibit 7 from the DCRB filing to observe average medical incurred claim costs at age 1 and age 2. It is important to note that the claim costs in DCRB's Exhibit 7 reflect actual claim information from the unit statistical data and therefore reflect the medical savings impact from the corresponding workers compensation reform legislation. INS used an 8 point exponential regression on the average medical incurred amounts at age 2 for policy years 2004 to 2011 to produce an implied medical severity trend of +6.9%. While claim costs at age 2 are still immature, INS considered the information in Exhibit 7 supportive of the trend adjustments used in the filing for the post-SB1 time periods.

The INS analysis of severity trends for the calculation of IELRs is similar to the frequency trend analysis for IELRs. For the 2013 IELRs, severity trend calculations were based on data points from 2004 to 2012, thus removing the 2013 observation. Similarly, for the 2012 IELRs, severity trend calculations were based on data points from 2004 to 2011, removing the 2012 and 2013 observations. For the 2013 IELRs, INS selected severity trends of +4.9% for indemnity and +12.2% for medical. For the 2012 IELRs, INS selected severity trends of +4.2% for indemnity and +12.3% for medical.

The table below summarizes the trend figures used in both the DCRB and INS analyses.

Summary of Frequency and Severity Trend		
	DCRB	INS
Claim Frequency	-5.3%	-4.9%
Indemnity Severity	+7.7%	+5.0%
Medical Severity, up to 9/1/08	+10.8%	+9.3%
From 9/1/08 to 1/31/13	+9.3%	+7.8%
After 1/31/13	+9.0%	+7.5%

Average Loss Ratio: In the DCRB and the INS approaches, for both Indemnity and Medical, the indicated rate level need relies upon the average of the latest four policy years' loss and LAE ratios. These trended and developed loss ratios incorporate the many elements discussed above and provide estimates of the loss ratio that can be expected for the policy year starting 12/1/15. The average loss and LAE ratio gives equal weight to each of the ratios for the last four policy years.

Summary of Differences

The following table summarizes the effects of the major differences between the DCRB and INS indicated changes for voluntary market loss costs. Exhibit 7 provides a chart of these incremental differences.

DCRB Voluntary Market Loss Cost Indicated Change	+15.03%
1. INS Loss Development Factors	+2.29%
2. INS Ultimate Loss Selection	-2.15%
3. INS Trend Selection	-7.07%
INS Voluntary Market Loss Cost Indicated Change	+8.10%

Descriptions of the Exhibits

Following is a brief description of each of the exhibits that INS prepared in support of the indicated rate and loss cost change. The Notes section found at the bottom of the exhibit shows the documentation source or appropriate calculation formula of each value in the exhibit.

Exhibit 1 is structured to compare directly to the DCRB's "Brown Book" Exhibit I and shows the derivation of the indicated residual market rate change and voluntary market loss cost

change using the trended and developed ultimate loss ratios for the upcoming 2015 policy period.

Exhibit 2, Page 1 shows the derivation of the trended ultimate indemnity loss and LAE ratio used in Exhibit 1.

Exhibit 2, Page 2 shows the derivation of the trended ultimate medical loss and LAE ratio used in Exhibit 1.

Exhibit 3, Page 1 summarizes the derivation and selection of indemnity frequency trend which is used in trending both the indemnity and medical loss ratios. Because the vast majority of medical losses are associated with indemnity claims, it is appropriate to use the indemnity frequency trend for medical losses. Similar to the DCRB's approach, the analysis uses normalized frequency which is the ratio of actual claim frequency for each policy year divided by the claim frequency for policy year 2001. The implied frequency trend at each of the different time periods used in the regression analysis are displayed along with the coefficient of determination, R-squared, which is a goodness of fit measure of the regression.

Exhibit 3, Page 2 summarizes the derivation and selection of the severity trends for indemnity and medical loss ratios. Separately for indemnity and medical losses, ultimate loss ratios are divided by normalized frequency, producing severity loss ratios for each year. Since the ultimate loss ratios have a frequency and a severity component, dividing by normalized frequency provides the severity component of the loss ratio needed for the analysis in this exhibit. For indemnity and medical severities, the implied severity trends at each of the different time periods used in the regression analysis are displayed along with the coefficients of determination, R-squared.

Exhibit 3, Page 3 displays average indemnity and medical incurred claim amounts at age 2 for policy years 2004 to 2011. Also displayed are the fitted average claim amounts using exponential regression, the implied severity trend at age 2, and the R-squared value from the regression. As noted earlier, INS considered these values in the selection of severity trend.

Exhibit 4, Page 1 shows the derivation of the indemnity ultimate loss and LAE ratios for the 2004 to 2013 policy years which are used in Exhibit 2, Page 1. Premiums are shown at ultimate value and current rates. Paid and incurred loss development factors are applied to paid and incurred losses, respectively. Indemnity losses are adjusted to current benefit levels. For each policy year, loss adjustment expenses are included in the ultimate loss ratio by the application of the LAE factor.

Exhibit 4, Page 2 shows the derivation of the medical ultimate loss and LAE ratios for the 2004 to 2013 policy years which are used in Exhibit 2, Page 2.

Exhibit 5, Pages 1-4 show the selection of the paid loss development factors and the incurred loss development factors, for indemnity and medical. Historical loss development factors are displayed along with 4 year and 8 year averages.

Exhibit 5.1 shows the derivation of the Paid Indemnity Tail Factor and the Incurred Indemnity Tail Factor at age 25.

Exhibit 5.2 shows the derivation of the Paid Medical Tail Factor and the Incurred Medical Tail Factor at age 25.

Exhibit 6, Pages 1a and 1b show the derivation of the indemnity Initial Expected Loss Ratios used in the Bornhuetter-Ferguson Methods for policy years 2012 and 2013.

Exhibit 6, Pages 2a and 2b show the derivation of the medical Initial Expected Loss Ratios used in the Bornhuetter-Ferguson Methods for policy years 2012 and 2013.

Exhibit 7 is a chart that illustrates the impact of the major elements of the INS analysis and the resulting incremental steps in moving from the DCRB's voluntary market indicated change to INS' voluntary market indicated change.

Throughout this analysis, the source documentation is the DCRB Filing exhibits, including the "Brown Book" as filed.

Closing

The INS review is focused on the overall statewide rate level change. Changes in classification relativities are accepted without review, based on the controls present in the DCRB and in the procedures for review by an actuarial panel. In its review, INS has independently determined an indicated +7.99% change in residual market rates and a +8.10% change in voluntary market loss costs. As such, INS finds that the DCRB filing request for a +14.92% change in residual market rates and a +15.03% change in voluntary market loss costs is higher by +6.93%. The INS rate indication is based on the presumption that the provisions of HB373 are fully realized in the intended time frame as outlined in the legislation. The INS findings pertain solely to the DCRB Delaware Workers Compensation Bureau Filing No. 1502, dated August 28, 2015.

Allan R. Becker, FCAS, MAAA
INS Consultants, Inc.

DELAWARE COMPENSATION RATING BUREAU
 DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
 INS RATE LEVEL INDICATION

Exhibit 1

	Indemnity	Medical	Total	
(1) Trended Policy Year Loss & LAE Ratio for Policy Period 12/01/15-11/30/16	0.2847	0.7102	0.9949	
(2) Senate Bill 1 Adjustment	1.0000	0.8260		
(3) Senate Bill 238 Adjustment	1.0000	0.9958		
(4) House Bill 175 Adjustment	1.0000	0.9397		
(5) House Bill 373 Adjustment	1.0000	0.6707		
(6) Combined Legislative Adjustment	1.0000	0.5184		
(7) Trended Loss & LAE Ratio Adjusted for Law Changes	0.2847	0.3682	0.6529	
(8) Excess Loss Factor			0.1155	
(9) Trended Loss & LAE Ratio with Excess Load			0.7382	
(10) Permissible Loss & LAE Ratio			0.6880	
(11) Indicated Rate Change in Residual Market Rates			1.0730	
(12) Estimated Effect of 07/01/16 Benefit Change			1.0064	
(13) Indicated Change in Residual Market Rate Level			1.0799	+7.99%
(14) Indicated Change in Voluntary Loss Costs			1.0810	+8.10%

Notes:

(1) from INS Exhibit 2, Page 1, Col 8 (Indemnity); Exhibit 2, Page 2, Col 17 (Medical)

(2) through (5) from DCRB "Brown Book" Exhibit I, Lines 3ai, 3aii, 3aiii, 3aiv

(6) = (2) x (3) x (4) x (5)

(7) = (1) x (6) separately for Indemnity and Medical

(8) from DCRB "Brown Book" Exhibit I, Line 4a

(9) = (7) / [1 - (8)]

(10) from DCRB "Brown Book" Exhibit I, Line 6

(11) = (9) / (10)

(12) from DCRB "Brown Book" Exhibit I, Line 8

(13) = (11) x (12)

INDEMNITY - Trended Loss & LAE Ratio

Policy Year	(1) Midpoint of Policy Year	(2) Number of Years to 12/01/16	(3) Indemnity Severity Trend	(4) Severity Trend Factor	(5) Frequency Trend Factor	(6) Loss & LAE Ratio Trend Factor	(7) Ultimate Loss & LAE Ratio	(8) Trended Loss & LAE Ratio
2007	01/01/08	8.9167	5.0%	1.5450	0.6417	0.9914	0.2835	0.2811
2008	01/01/09	7.9167	5.0%	1.4715	0.6744	0.9924	0.2472	0.2453
2009	01/01/10	6.9167	5.0%	1.4014	0.7088	0.9933	0.2803	0.2784
2010	01/01/11	5.9167	5.0%	1.3347	0.7450	0.9943	0.2786	0.2770
2011	01/01/12	4.9167	5.0%	1.2711	0.7830	0.9953	0.2835	0.2822
2012	01/01/13	3.9167	5.0%	1.2106	0.8229	0.9962	0.2796	0.2785
2013	01/01/14	2.9167	5.0%	1.1529	0.8649	0.9972	0.3021	0.3012
							4 yr avg	0.2847

Notes:

- (1) midpoint of policy year
- (2) years from policy year midpoint to 12/01/16
- (3) from INS Exhibit 3, Page 2, Select Col 6
- (4) = $[1.0 + (3)] ^ (2)$
- (5) From INS Exhibit 3, Page 1, Col 9
- (6) = (4) x (5)
- (7) from INS Exhibit 4, Page 1, Col 15
- (8) = (6) x (7)

DELAWARE COMPENSATION RATING BUREAU
DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
INS RATE LEVEL INDICATION

MEDICAL - Trended Loss & LAE Ratio

- (1) Medical severity trend prior to 9/1/08 9.3%
- (2) Adjustment for SB1 from 9/1/08 to 1/31/13 -1.5%
- (3) Medical severity trend 9/1/08 to 1/31/13 7.8%
- (4) Adjustment for SB1, SB 238 from 1/31/13 and later -1.8%
- (5) Medical severity trend 1/31/13 and later 7.5%

Policy Year	(6) Midpoint of Policy Year	(7) Number of Years from Midpoint to 09/01/08	(8) Number of Years from Later of Midpoint to 01/31/13	(9) Number of Years from 01/31/13 to 12/01/16	(10) Severity Trend Factor to 09/01/08	(11) Severity Trend Factor from Later of 09/01/08 or Midpoint to 01/31/13	(12) Severity Trend Factor from 01/31/13 to 12/01/16
2007	01/01/08	0.6667	4.4167	3.8333	1.0611	1.3934	1.3195
2008	01/01/09	0.0000	4.0833	3.8333	1.0000	1.3589	1.3195
2009	01/01/10	0.0000	3.0833	3.8333	1.0000	1.2606	1.3195
2010	01/01/11	0.0000	2.0833	3.8333	1.0000	1.1694	1.3195
2011	01/01/12	0.0000	1.0833	3.8333	1.0000	1.0848	1.3195
2012	01/01/13	0.0000	0.0833	3.8333	1.0000	1.0063	1.3195
2013	01/01/14	0.0000	-	2.9167	1.0000	1.0000	1.2348
	(13) Combined Periods Severity Trend Factor	(14) Frequency Trend factor	(15) Loss & LAE Ratio Trend Factor	(16) Ultimate Loss & LAE Ratio	(17) Trended Loss & LAE Ratio		
2007	1.9509	0.6417	1.2519	0.4699	0.5883		
2008	1.7931	0.6744	1.2093	0.4678	0.5657		
2009	1.6634	0.7088	1.1790	0.5309	0.6259		
2010	1.5430	0.7450	1.1495	0.6273	0.7211		
2011	1.4314	0.7830	1.1208	0.6480	0.7263		
2012	1.3278	0.8229	1.0926	0.6171	0.6743		
2013	1.2348	0.8649	1.0680	0.6734	0.7192		
				4 yr avg	0.7102		

- Notes:
- (1) from INS Exhibit 3, Page 2, Selected Col 8
 - (2) from DCRB "Brown Book" Exhibit VII-2
 - (3) = (1) + (2)
 - (4) from DCRB "Brown Book" Exhibit VII-2
 - (5) = (1) + (4)
 - (13) Select Paid Tail LDF col (7) / Average Inc/Pd col ((11) = [1.0 + (3)] ^ (8)
(12) = [1.0 + (5)] ^ (9)
 - (6) midpoint of policy year
 - (7) years from policy year midpoint to 09/01/08
 - (8) years from 09/01/08 or the policy year midpoint to 01/31/13
 - (9) years from 01/31/13 or the policy year midpoint to 12/01/16
 - (10) = [1.0 + (1)] ^ (7)
 - (11) = [1.0 + (3)] ^ (8)
 - (12) = [1.0 + (5)] ^ (9)
 - (13) = (10) x (11) x (12)
 - (14) from INS Exhibit 3, Page 1, Col 9
 - (15) = (13) x (14)
 - (16) from INS Exhibit 4, Page 2, Col 14
 - (17) = (15) x (16)

FREQUENCY Trend

Policy Year	(1) Normalized Frequency	(2) Trend Using 2001 to 2013 for the policy year starting 12/1/15			(4) Trend Using 2001 to 2012 for the 2013 IELRs			(6) Trend Using 2001 to 2011 for the 2012 IELRs		
		Annual Trend	(3) R-squared	Annual Trend	(5) R-squared	Annual Trend	(7) R-squared			
2001	1.0000	13-yr-fit	-6.0%	94.9%	12-yr-fit	-6.4%	94.1%	11-yr-fit	-6.5%	93.6%
2002	1.0131	10-yr-fit	-5.2%	92.2%	10-yr-fit	-6.4%	90.9%	10-yr-fit	-6.7%	92.0%
2003	0.9694	7-yr fit	-3.8%	82.3%	7-yr fit	-5.0%	89.9%	7-yr fit	-5.0%	89.5%
2004	0.8537	5-yr fit	-3.7%	71.4%	5-yr fit	-3.9%	75.2%	5-yr fit	-3.6%	74.8%
2005	0.7635	4-yr fit	-4.2%	62.9%	4-yr fit	-5.4%	84.9%	4-yr fit	-1.8%	63.4%
2006	0.7191									
2007	0.6682	Select	-4.9%		Select	-6.0%		Select	-6.3%	
2008	0.5940									
2009	0.5918									
2010	0.5925									
2011	0.5583									
2012	0.5023									
2013	0.5314									
		(8) Policy Year	(9) Number of Years to 12/01/16	(9) Trend Factor	(10) Policy Year	(11) Number of Years to 12/31/13	(11) Trend Factor	(12) Policy Year	(12) Number of Years to 12/31/12	(13) Trend Factor
		2007	8.9167	0.6417	2007	6.0000	0.6886	2007	5.0000	0.7224
		2008	7.9167	0.6744	2008	5.0000	0.7328	2008	4.0000	0.7710
		2009	6.9167	0.7088	2009	4.0000	0.7798	2009	3.0000	0.8228
		2010	5.9167	0.7450	2010	3.0000	0.8298	2010	2.0000	0.8781
		2011	4.9167	0.7830	2011	2.0000	0.8831	2011	1.0000	0.9370
		2012	3.9167	0.8229	2012	1.0000	0.9397			
		2013	2.9167	0.8649						

Notes:

- (1) from DCRB Filing Exhibit 2, Page 5
- (2) through (7) from exponential regression of (1) across indicated years
- (8) years from the midpoint of each policy year to 12/01/16
- (9) = [1 + Select (2)] ^ (8)
- (10) years from 12/31/xx to 12/31/13 for 2013 IELRs in Exhibit 6, Pages 1b and 2b
- (11) = [1 + Select (4)] ^ (10)
- (12) years from 12/31/xx to 12/31/12 for 2012 IELRs in Exhibit 6, Pages 1a and 2a
- (13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

SEVERITY Trend

Policy Year	(1) Indemnity Average Incurred at Age 2	(2) Indemnity 'Fitted' Incurred	Policy Year	(3) Medical Average Incurred at Age 2	(4) Medical 'Fitted' Incurred
2004	15,431	15,801	2004	19,533	18,872
2005	16,657	16,521	2005	20,730	20,172
2006	16,549	17,274	2006	20,527	21,561
2007	18,325	18,062	2007	22,937	23,047
2008	20,535	18,886	2008	23,312	24,634
2009	20,435	19,747	2009	26,050	26,331
2010	19,711	20,647	2010	29,501	28,145
2011	21,000	21,589	2011	30,419	30,084
	Severity Trend	4.6%		Severity Trend	6.9%
	R-squared	0.858		R-squared	0.932

Notes:

(1), (3) from DCRB Exhibit 7

(2), (4) from exponential regression on cols (1), (3)

INDEMNITY - Development of Ultimate Loss and LAE

Policy Year	(1) Ult. Std. Earned Premium (At Current Rates)	(2) Paid Loss	(3) Incurred Loss	(4) Paid Loss Dev. Factor	(5) Inc Loss Dev. Factor	(6) 7/1/15 Benefit Factor	(7) Indemnity IELR		
2004	173,639,957	36,589,736	37,707,416	1.1378	1.0275	1.1306			
2005	188,039,413	37,658,124	40,252,964	1.1598	1.0375	1.1149			
2006	198,340,648	38,272,180	42,161,584	1.1933	1.0437	1.0919			
2007	197,151,548	35,925,539	40,835,546	1.2391	1.0574	1.0632			
2008	202,073,612	31,809,978	35,561,757	1.2929	1.0851	1.0452			
2009	200,054,026	32,123,839	40,708,680	1.3912	1.1087	1.0414			
2010	195,960,361	29,013,181	36,127,907	1.5569	1.1642	1.0442			
2011	198,803,517	26,352,308	33,881,558	1.8552	1.2063	1.0474			
2012	184,652,808	15,917,593	28,718,571	2.7525	1.4348	1.0324	0.2142		
2013	172,910,972	9,992,465	23,913,365	5.5557	1.8866	1.0105	0.2258		
Total	1,911,626,862	293,654,943	359,869,348						

Policy Year	(8) Paid LDF Ult. Loss	(9) Incurred LDF Ult. Loss	(10) Paid BF Ult. Loss	(11) Incurred BF Ult. Loss	(12) Selected Ult. Loss	(13) Selected Ult. Loss Ratio	(14) LAE Factor	(15) Ult. Loss & LAE Ratio
2004	47,070,698	43,805,456			45,438,077	0.2617	1.1988	0.3137
2005	48,694,398	46,560,602			47,627,500	0.2533	1.1988	0.3037
2006	49,868,194	48,048,803			48,958,499	0.2468	1.1988	0.2959
2007	47,330,437	45,908,007			46,619,222	0.2365	1.1988	0.2835
2008	42,986,873	40,331,997			41,659,435	0.2062	1.1988	0.2472
2009	46,540,428	47,004,302			46,772,365	0.2338	1.1988	0.2803
2010	47,166,461	43,918,632			45,542,547	0.2324	1.1988	0.2786
2011	51,205,425	42,809,666			47,007,546	0.2365	1.1988	0.2835
2012	45,233,088	42,540,702	42,432,289	42,023,540	43,057,405	0.2332	1.1988	0.2796
2013	56,097,956	45,589,368	42,449,226	42,705,675	43,581,423	0.2520	1.1988	0.3021
Total	482,193,958	446,517,535			456,264,019			

Notes:

(1) from DCRB Filing "Brown Book" Exhibits IV-1 through IV-10, Line 7

(2) from DCRB Filing Exhibit 1 - Limited

(3) from DCRB Filing Exhibit 1 - Limited

(13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

(7) from INS Exhibit 6, Page 1a, Select Col 7 for 2012; Exhibit 6, Page 1b, Select Col 7 for 2013

(8) = (2) x (4) x (6)

(9) = (3) x (5) x (6)

(10) = [(1) x (7) x [1.0 - (1.0 / (4))] + (2)] x (6)

(11) = [(1) x (7) x [1.0 - (1.0 / (5))] + (3)] x (6)

(12) = avg of (8) and (9) for 2004 to 2011; avg of (8),(9),(10), and (11) for 2012; avg of (9),(10) and (11) for 2013

(13) = (12) / (1)

(14) from DCRB Filing, Exhibit 8

(15) = (13) x (14)

MEDICAL - Development of Ultimate Loss and LAE

Policy Year	(1) Ult. Std. Earned Premium (At Current Rates)	(2) Paid Loss	(3) Incurred Loss	(4) Paid Loss Dev. Factor	(5) Incurred Loss Dev. Factor	(6) Medical IELR			
2004	173,639,957	50,344,140	57,053,861	1.3586	1.1353				
2005	188,039,413	50,883,082	60,398,827	1.3981	1.1540				
2006	198,340,648	51,194,023	63,680,974	1.4419	1.1812				
2007	197,151,548	52,898,267	62,367,458	1.4931	1.2121				
2008	202,073,612	51,471,339	62,174,728	1.5573	1.2470				
2009	200,054,026	54,212,482	67,428,753	1.6387	1.3104				
2010	195,960,361	60,045,548	71,041,384	1.7524	1.4059				
2011	198,803,517	56,784,459	69,399,049	1.9161	1.5286				
2012	184,652,808	43,124,393	53,831,032	2.2079	1.7189	0.5359			
2013	172,910,972	32,294,937	44,451,439	3.0639	2.1315	0.5755			
Total	1,911,626,862	503,252,670	611,827,505						

Policy Year	(7) Paid LDF Ult. Loss	(8) Incurred LDF Ult. Loss	(9) Paid BF Ult. Loss	(10) Incurred BF Ult. Loss	(11) Selected Ult. Loss	(12) Selected Ult. Loss Ratio	(13) LAE Factor	(14) Ult. Loss & LAE Ratio
2004	68,396,211	64,773,594			66,584,903	0.3835	1.1988	0.4597
2005	71,140,040	69,702,578			70,421,309	0.3745	1.1988	0.4490
2006	73,815,059	75,217,325			74,516,192	0.3757	1.1988	0.4504
2007	78,980,024	75,595,899			77,287,962	0.3920	1.1988	0.4699
2008	80,154,072	77,532,724			78,843,398	0.3902	1.1988	0.4678
2009	88,838,044	88,356,060			88,597,052	0.4429	1.1988	0.5309
2010	105,225,425	99,876,169			102,550,797	0.5233	1.1988	0.6273
2011	108,804,896	106,084,850			107,444,873	0.5405	1.1988	0.6480
2012	95,215,467	92,532,014	97,261,555	95,218,575	95,056,903	0.5148	1.1988	0.6171
2013	98,949,713	94,747,295	99,327,313	97,275,680	97,116,763	0.5617	1.1988	0.6734
Total	869,518,951	844,418,508			858,420,152			

Notes:

- (1) from DCRB Filing "Brown Book" Exhibits IV-1 through IV-10, Line 7
- (2) from DCRB Filing Exhibit 1
- (3) from DCRB Filing Exhibit 1
- (13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

(7) = (2) x (4)

(8) = (3) x (5)

(9) = [(1) x (6) x [1.0 - (1.0 / (4))] + (2)]

(10) = [(1) x (6) x [1.0 - (1.0 / (5))] + (3)]

(11) = avg of (7) and (8) for 2004 to 2011; avg of (7),(8),(9), and (10) for 2012; avg of (8),(9) and (10) for 2013

(12) = (11) / (1)

(13) from DCRB Filing, Exhibit 8

(14) = (12) x (13)

DELAWARE COMPENSATION RATING BUREAU
DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
INS RATE LEVEL INDICATION

Paid Indemnity Loss Development Factors - Limited Losses

<<<< Policy-year age-to-age factors for calendar-year intervals >>>>

Maturities	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	4 yr avg	8 yr avg	SELECT	INS Cumul
Beyond 25							tail >>>>		1.0186	1.0186	1.0186	1.0186
24 to 25					1.0004	0.9999	1.0077	0.9999	1.0020	1.0020	1.0020	1.0206
23 to 24			1.0165		1.0034	1.0017	1.0036	1.0022	1.0027	1.0055	1.0027	1.0234
22 to 23		1.0089	1.0030		1.0027	1.0000	1.0006	1.0210	1.0061	1.0060	1.0061	1.0296
21 to 22		1.0045	1.0050		1.0100	1.0022	1.0029	0.9982	1.0033	1.0041	1.0033	1.0330
20 to 21		0.9996	1.0021		1.0038	1.0057	0.9978	1.0011	1.0018	1.0022	1.0018	1.0349
19 to 20		1.0066	1.0023		1.0007	1.0063	1.0023	1.0442	1.0135	1.0081	1.0135	1.0489
18 to 19		1.0206	1.0014		1.0049	1.0064	1.0022	1.0006	1.0014	1.0104	1.0014	1.0503
17 to 18		1.0026	1.0154		1.0035	1.0040	1.0022	1.0035	1.0040	1.0062	1.0040	1.0545
16 to 17		1.0052	1.0064		1.0048	1.0020	1.0061	1.0085	1.0057	1.0060	1.0057	1.0605
15 to 16		1.0049	1.0015		1.0032	1.0053	1.0130	1.0101	1.0086	1.0071	1.0086	1.0697
14 to 15		1.0000	1.0164		1.0109	1.0134	1.0028	1.0031	1.0089	1.0085	1.0089	1.0792
13 to 14		1.0508	1.0141		1.0232	1.0102	1.0235	1.0087	1.0129	1.0180	1.0129	1.0931
12 to 13		1.0028	1.0021		1.0086	1.0109	1.0106	1.0112	1.0121	1.0091	1.0121	1.1063
11 to 12		1.0137	1.0066		1.0195	1.0106	1.0126	1.0127	1.0098	1.0125	1.0098	1.1172
10 to 11		1.0118	1.0135		1.0024	1.0114	1.0155	1.0345	1.0185	1.0145	1.0185	1.1378
9 to 10		1.0272	1.0197		1.0263	1.0126	1.0196	1.0163	1.0193	1.0213	1.0193	1.1598
8 to 9		1.0262	1.0301		1.0525	1.0205	1.0346	1.0284	1.0289	1.0308	1.0289	1.1933
7 to 8		1.0220	1.0437		1.0257	1.0253	1.0353	1.0549	1.0384	1.0340	1.0384	1.2391
6 to 7		1.0487	1.0281		1.0517	1.0469	1.0530	1.0310	1.0434	1.0449	1.0434	1.2929
5 to 6		1.0634	1.0538		1.0693	1.0767	1.0797	1.0556	1.0760	1.0678	1.0760	1.3912
4 to 5		1.0912	1.0891		1.1223	1.1237	1.1091	1.1214	1.1191	1.1071	1.1191	1.5569
3 to 4		1.1664	1.1592		1.1749	1.2049	1.1860	1.2007	1.1916	1.1860	1.1916	1.8552
2 to 3		1.4072	1.4355		1.4295	1.5122	1.5791	1.3942	1.4837	1.4612	1.4837	2.7525
1 to 2		1.9577	1.8847		2.1464	1.9133	2.0195	2.0394	2.0184	2.0155	2.0184	5.5557

Data Source: DCRB worksheet: "Exhibits 2, 3 and 6 - Limited Come From This File.xls"
Note: Cumulative value beyond 25 years is from Exhibit 5.1

DELAWARE COMPENSATION RATING BUREAU
DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
INS RATE LEVEL INDICATION
(13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

<<<<< Policy-year age-to-age factors for calendar-year intervals >>>>>

Maturities	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	4 yr avg	8 yr avg	SELECT	INS Cumul
Beyond 25								tail >>>>>	1.0016	1.0016	1.0016	1.0016
24 to 25					0.9983	1.0010	1.0047	0.9978	1.0005	1.0005	1.0005	1.0021
23 to 24			1.0221	1.0011	1.0010	1.0010	1.0019	0.9988	1.0007	1.0050	1.0007	1.0028
22 to 23		1.0033	1.0005	0.9978	0.9984	0.9985	1.0102	1.0102	1.0012	1.0015	1.0012	1.0040
21 to 22		0.9899	1.0042	1.0024	1.0022	0.9994	0.9930	0.9980	0.9982	0.9984	0.9982	1.0022
20 to 21		1.0091	1.0026	0.9932	1.0010	0.9981	0.9966	0.9991	0.9987	1.0004	0.9987	1.0009
19 to 20		1.0038	0.9956	1.0128	1.0015	0.9971	0.9918	0.9887	0.9948	0.9986	0.9948	0.9957
18 to 19		1.0005	0.9944	1.0440	1.0158	1.0141	1.0371	1.0003	1.0133	1.0135	1.0133	1.0089
17 to 18		0.9986	0.9814	1.0028	1.0019	0.9777	0.9990	0.9964	0.9938	0.9945	0.9938	1.0027
16 to 17		0.9990	1.0037	1.0050	1.0039	0.9996	1.0039	0.9980	1.0067	1.0048	1.0067	1.0094
15 to 16		1.0010	1.0000	1.0044	1.0032	1.0027	1.0013	0.9994	1.0017	1.0013	1.0017	1.0111
14 to 15		0.9964	1.0094	1.0166	1.0041	1.0039	0.9964	0.9979	1.0006	1.0022	1.0006	1.0117
13 to 14		1.0414	1.0041	1.0057	0.9997	1.0050	0.9962	1.0027	1.0009	1.0087	1.0009	1.0126
12 to 13		0.9938	1.0063	1.0091	1.0001	1.0217	1.0187	1.0018	1.0125	1.0074	1.0125	1.0253
11 to 12		0.9999	1.0015	0.9948	1.0071	0.9957	1.0026	0.9965	0.9968	0.9988	0.9968	1.0220
10 to 11		0.9961	1.0099	1.0022	0.9933	1.0002	1.0017	1.0247	1.0054	1.0029	1.0054	1.0275
9 to 10		1.0123	1.0066	1.0122	0.9904	1.0065	1.0082	1.0082	1.0097	1.0076	1.0097	1.0375
8 to 9		1.0131	0.9938	1.0387	1.0171	1.0123	1.0090	1.0012	1.0060	1.0108	1.0060	1.0437
7 to 8		1.0163	1.0182	1.0219	1.0083	1.0202	1.0059	1.0103	1.0131	1.0147	1.0131	1.0574
6 to 7		1.0071	0.9990	1.0132	1.0315	1.0307	1.0322	1.0372	1.0262	1.0194	1.0262	1.0851
5 to 6		1.0160	1.0065	1.0106	1.0139	1.0148	1.0293	1.0355	1.0218	1.0168	1.0218	1.1087
4 to 5		1.0113	1.0414	1.0361	1.0407	1.0180	1.0488	1.0628	1.0500	1.0412	1.0500	1.1642
3 to 4		1.0381	1.0281	1.0870	1.0736	1.0317	1.0590	1.0570	1.0362	1.0464	1.0362	1.2063
2 to 3		1.1294	1.1735	1.1782	1.1848	1.1931	1.2498	1.0995	1.1894	1.1779	1.1894	1.4348
1 to 2		1.2337	1.3367	1.4037	1.4633	1.3123	1.2864	1.3224	1.3149	1.3371	1.3149	1.8866

Data Source: DCRB worksheet: "Exhibits 2, 3 and 6 - Limited Come From This File.xls"
Note: Cumulative value beyond 25 years is from Exhibit 5.1

DELAWARE COMPENSATION RATING BUREAU
DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
INS RATE LEVEL INDICATION

Paid Medical Loss Development Factors - Limited Losses

Maturities	<<<< Policy-year age-to-age factors for calendar-year intervals >>>>											SELECT	INS Cumul			
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	4 yr avg	8 yr avg	tail >>>>					
Beyond 25													1.0981	1.0981	1.0981	1.0981
24 to 25												1.0130	1.0093	1.0093	1.0093	1.1083
23 to 24				1.0203								1.0058	1.0083	1.0107	1.0083	1.1175
22 to 23			1.0024	1.0151								1.0048	1.0045	1.0059	1.0045	1.1225
21 to 22			1.0031	1.0074	1.0101							1.0078	1.0097	1.0085	1.0097	1.1334
20 to 21		1.0077	1.0076	1.0051	1.0164	1.0156						1.0069	1.0083	1.0088	1.0083	1.1428
19 to 20	0.9935	1.0099	1.0232	1.0088	1.0092	1.0095	1.0125					1.0213	1.0131	1.0110	1.0131	1.1578
18 to 19	1.0057	1.0120	1.0125	1.0052	1.0080	1.0129	1.0099	1.0106				1.0106	1.0104	1.0096	1.0104	1.1698
17 to 18	1.0132	1.0065	1.0149	1.0078	1.0084	1.0092	1.0234	1.0164				1.0164	1.0144	1.0125	1.0144	1.1867
16 to 17	1.0110	1.0107	1.0078	1.0181	1.0148	1.0088	1.0203	1.0206				1.0206	1.0161	1.0140	1.0161	1.2058
15 to 16	1.0100	1.0098	1.0120	1.0145	1.0145	1.0285	1.0156	1.0043				1.0043	1.0157	1.0137	1.0157	1.2247
14 to 15	1.0108	1.0218	0.9976	1.0110	1.0280	1.0137	1.0096	1.0045				1.0045	1.0140	1.0121	1.0140	1.2419
13 to 14	1.0174	1.0184	1.0187	1.0206	1.0177	1.0095	1.0113	1.0205				1.0205	1.0148	1.0168	1.0148	1.2603
12 to 13	1.0309	1.0166	1.0402	1.0134	1.0158	1.0162	1.0243	1.0201				1.0201	1.0191	1.0222	1.0191	1.2843
11 to 12	1.0336	1.0301	1.0235	1.0145	1.0162	1.0372	1.0221	1.0308				1.0308	1.0266	1.0260	1.0266	1.3185
10 to 11	1.0476	1.0175	1.0114	1.0227	1.0342	1.0232	1.0332	1.0310				1.0310	1.0304	1.0276	1.0304	1.3586
9 to 10	1.0341	1.0232	1.0249	1.0386	1.0273	1.0235	1.0385	1.0270				1.0270	1.0291	1.0296	1.0291	1.3981
8 to 9	1.0271	1.0226	1.0573	1.0294	1.0319	1.0400	1.0248	1.0285				1.0285	1.0313	1.0327	1.0313	1.4419
7 to 8	1.0269	1.0436	1.0450	1.0531	1.0368	1.0213	1.0382	1.0457				1.0457	1.0355	1.0388	1.0355	1.4931
6 to 7	1.0497	1.0318	1.0330	1.0390	1.0392	1.0505	1.0465	1.0358				1.0358	1.0430	1.0407	1.0430	1.5573
5 to 6	1.0436	1.0545	1.0422	1.0516	1.0413	1.0694	1.0469	1.0515				1.0515	1.0523	1.0501	1.0523	1.6387
4 to 5	1.0544	1.0622	1.0529	1.0657	1.0727	1.0556	1.0914	1.0579				1.0579	1.0694	1.0641	1.0694	1.7524
3 to 4	1.0451	1.0858	1.0891	1.0739	1.0793	1.0885	1.0998	1.1059				1.1059	1.0934	1.0834	1.0934	1.9161
2 to 3	1.1381	1.1360	1.1592	1.1673	1.1551	1.1780	1.1630	1.1132				1.1132	1.1523	1.1512	1.1523	2.2079
1 to 2	1.3225	1.3583	1.4535	1.4300	1.4390	1.4006	1.3495	1.3616				1.3616	1.3877	1.3894	1.3877	3.0639

Data Source: DCRB worksheet: "Exhibits 2, 3 and 6 - Limited Come From This File.xls"
Note: Cumulative value beyond 25 years is from Exhibit 5.2

DELAWARE COMPENSATION RATING BUREAU
DCRB Bureau Filing No. 1502, Proposed Effective December 1, 2015
INS RATE LEVEL INDICATION

Incurred Medical Loss Development Factors - Limited Losses

<<<< Policy-year age-to-age factors for calendar-year intervals >>>>

Maturities	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	4 yr avg	8 yr avg	SELECT	INS Cumul
Beyond 25								tail >>>>	1.0554	1.0554	1.0554	1.0554
24 to 25					1.0205	1.0091	1.0000	1.0059	1.0089	1.0089	1.0089	1.0648
23 to 24				1.0366	1.0077	1.0007	1.0027	1.0021	1.0033	1.0100	1.0033	1.0683
22 to 23			0.9976	1.0060	0.9952	0.9994	0.9925	0.9867	0.9935	0.9962	0.9935	1.0614
21 to 22		1.0083	1.0265	1.0017	1.0242	1.0047	1.0004	1.0027	1.0080	1.0098	1.0080	1.0699
20 to 21	1.0050	1.0233	1.0056	1.0172	1.0044	0.9989	1.0003	1.0102	1.0035	1.0081	1.0035	1.0736
19 to 20	0.9948	0.9983	1.0074	1.0027	0.9986	1.0089	0.9830	0.9805	0.9928	0.9968	0.9928	1.0659
18 to 19	1.0105	1.0049	1.0164	1.0013	1.0015	0.9954	1.0103	0.9972	1.0011	1.0047	1.0011	1.0670
17 to 18	0.9994	1.0177	1.0086	1.0008	0.9984	1.0077	0.9972	0.9865	0.9975	1.0020	0.9975	1.0644
16 to 17	1.0107	1.0154	1.0040	1.0090	1.0213	1.0185	1.0188	1.0017	1.0151	1.0124	1.0151	1.0804
15 to 16	0.9986	1.0121	1.0292	1.0129	1.0251	1.0175	1.0095	0.9993	1.0129	1.0130	1.0129	1.0944
14 to 15	1.0039	1.0153	1.0008	1.0079	1.0459	1.0127	1.0133	0.9782	1.0125	1.0098	1.0125	1.1081
13 to 14	1.0143	1.0053	1.0067	1.0124	1.0167	0.9963	0.9933	0.9899	0.9991	1.0044	0.9991	1.1071
12 to 13	1.0006	1.0110	1.0371	1.0089	1.0125	0.9966	1.0208	0.9985	1.0071	1.0108	1.0071	1.1149
11 to 12	1.0171	1.0415	1.0244	1.0151	1.0118	1.0270	0.9939	1.0109	1.0109	1.0177	1.0109	1.1271
10 to 11	1.0223	1.0405	0.9928	1.0206	1.0269	1.0140	0.9787	1.0097	1.0073	1.0132	1.0073	1.1353
9 to 10	1.0090	0.9875	0.9789	1.0159	0.9982	1.0298	1.0219	1.0159	1.0165	1.0071	1.0165	1.1540
8 to 9	1.0093	1.0236	1.0216	1.0372	1.0181	1.0494	0.9939	1.0327	1.0235	1.0232	1.0235	1.1812
7 to 8	1.0604	1.0156	1.0190	1.0406	1.0233	1.0082	1.0116	1.0617	1.0262	1.0301	1.0262	1.2121
6 to 7	1.0471	1.0210	1.0316	1.0474	1.0157	1.0376	1.0384	1.0235	1.0288	1.0328	1.0288	1.2470
5 to 6	1.0229	1.0426	1.0217	1.0391	1.0404	1.0453	1.0360	1.0816	1.0508	1.0412	1.0508	1.3104
4 to 5	1.0327	1.0772	1.0771	1.0816	1.1007	1.0145	1.0549	1.1214	1.0729	1.0700	1.0729	1.4059
3 to 4	1.0654	1.0893	1.0912	1.1118	1.1301	1.0808	1.0689	1.0692	1.0873	1.0883	1.0873	1.5286
2 to 3	1.0901	1.1591	1.1124	1.1157	1.1334	1.1452	1.1314	1.0879	1.1245	1.1219	1.1245	1.7189
1 to 2	1.1244	1.1907	1.2986	1.2758	1.3373	1.1983	1.1848	1.2394	1.2400	1.2312	1.2400	2.1315

Data Source: DCRB worksheet: "Exhibits 2, 3 and 6 - Limited Come From This File.xls"
Note: Cumulative value beyond 25 years is from Exhibit 5.2

Paid Indemnity Tail Factor beyond Age 25 - Limited Losses

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	Select LDF	Fitted LDF	Decay	Length of Tail Beyond Age 25	Tail LDF based on Select LDFs and Select Decay	Tail LDF based on Fitted LDFs and Select Decay	Paid Tail LDF
24-25	1.0020	1.0024	0.9045	25	1.0164	1.0195	1.0179
23-24	1.0027	1.0026	0.9005	30	1.0169	1.0200	1.0185
22-23	1.0061	1.0029	0.8961	35	1.0172	1.0204	1.0188
21-22	1.0033	1.0032	0.8913	40	1.0174	1.0206	1.0190
20-21	1.0018	1.0036					
		Select	0.8981			Select	1.0186

Incurred Indemnity Tail Factor beyond Age 25 - Limited Losses

Age	(8) Inc/Pd as of 12/31/11	(9) Inc/Pd as of 12/31/12	(10) Inc/Pd as of 12/31/13	(11) Inc/Pd as of 12/31/14	(12) Average Inc/Pd	(13) Incurred Tail LDF
28	-----	-----	1.0220	1.0168	1.0194	0.9992
27	-----	1.0261	1.0191	1.0110	1.0172	1.0013
26	1.0273	1.0140	1.0124	1.0110	1.0162	1.0023
25	1.0129	1.0148	1.0131	1.0191	1.0150	1.0035
				Select	1.0169	Select 1.0016

Notes:

- (1) from Exhibit 5, Page 1
- (2) Inverse Power Curve fit of Select LDFs - ages 14 to 25
- (3) Decay formula = LN(Fitted LDF age x)/LN(Fitted LDF age x-1)
- (4) number of additional years beyond age 25 that benefits will be paid
- (5),(6) Tail formula = $1 + (LDF \text{ age } 24 - 1) * [\{Decay - Decay^{(Length \text{ of Tail Beyond Age } 25 + 1)}\} / (1 - Decay)]$
- (7) average of (5) and (6)
- (8),(9),(10),(11) from DCRB worksheet:"Exhibits 2,3, and 6 - Limited Come From This File.xls"
- (12) average of (8), (9), (10), and (11)
- (13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

Paid Medical Tail Factor beyond Age 25 - Limited Losses

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	Select LDF	Fitted LDF	Decay	Length of Tail Beyond Age 25	Tail LDF based on Select LDFs and Select Decay	Tail LDF based on Fitted LDFs and Select Decay	Paid Tail LDF
24-25	1.0093	1.0071	0.9345	25	1.1034	1.0795	1.0915
23-24	1.0083	1.0077	0.9317	30	1.1096	1.0842	1.0969
22-23	1.0045	1.0082	0.9286	35	1.1138	1.0875	1.1007
21-22	1.0097	1.0088	0.9253	40	1.1168	1.0898	1.1033
20-21	1.0083	1.0096					
		Select	0.9300			Select	1.0981

Incurred Medical Tail Factor beyond Age 25 - Limited Losses

	(8)	(9)	(10)	(11)	(12)	(13)
Age	Inc/Pd as of 12/31/11	Inc/Pd as of 12/31/12	Inc/Pd as of 12/31/13	Inc/Pd as of 12/31/14	Average Inc/Pd	Incurred Tail LDF
28	-----	-----	1.0325	1.0497	1.0411	1.0547
27	-----	1.0660	1.0556	1.0015	1.0411	1.0548
26	1.0676	1.0654	1.0053	1.0211	1.0398	1.0560
25	1.0734	1.0134	1.0283	1.0441	1.0398	1.0560
				Select	1.0405	Select 1.0554

Notes:

- (1) from Exhibit 5, Page 3
- (2) Inverse Power Curve fit of Select LDFs - ages 14 to 25
- (3) Decay formula = LN(Fitted LDF age x)/LN(Fitted LDF age x-1)
- (4) number of additional years beyond age 25 that benefits will be paid
- (5),(6) Tail formula = 1+ (LDF age 24 - 1) * [{Decay - Decay^(Length of Tail Beyond Age 25 +1)} / (1-Decay)]
- (7) average of (5) and (6)
- (8),(9),(10),(11) from DCRB worksheet:"Exhibits 2,3, and 6 - Limited Come From This File.xls"
- (12) average of (8), (9), (10), and (11)
- (13) Select Paid Tail LDF col (7) / Average Inc/Pd col (12)

Support for IELR - Indemnity 2012 Policy Year

Ultimate Trended Indemnity Loss Ratio
Trending to December 31, 2012

Policy Year	(1) Number of Years to 12/31/12	(2) Annual Severity Trend	(3) Severity Trend Factor	(4) Annual Frequency Trend	(5) Frequency Trend Factor
2008	4.0000	4.2%	1.1767	-6.3%	0.7710
2009	3.0000	4.2%	1.1298	-6.3%	0.8228
2010	2.0000	4.2%	1.0848	-6.3%	0.8781
2011	1.0000	4.2%	1.0415	-6.3%	0.9370

Policy Year	(6) Selected Ult. Loss Ratio	(7) Trended Selected Ult. Loss Ratio
2008	0.2062	0.1871
2009	0.2338	0.2173
2010	0.2324	0.2214
2011	0.2365	0.2308

4 yr avg - Select **0.2142**

- Notes:
- (1) Difference between 12/31/xx and 12/31/12 in years
 - (2) from INS Exhibit 3, Page 2, Select Col 14
 - (3) = [1 + (2)] ^ (1)
 - (4) from INS Exhibit 3, Page 1, Select Col 6
 - (5) = [1 + (4)] ^ (1)
 - (6) From INS Exhibit 4, Page 1, Col 13
 - (7) = (3) x (5) x (6); IELR = 4 yr avg - Select

Support for IELR - Indemnity 2013 Policy Year

Ultimate Trended Indemnity Loss Ratio
 Trending to December 31, 2013

Policy Year	(1) Number of Years to 12/31/12	(2) Annual Severity Trend	(3) Severity Trend Factor	(4) Annual Frequency Trend	(5) Frequency Trend Factor
2009	4.0000	4.9%	1.2109	-6.0%	0.7798
2010	3.0000	4.9%	1.1543	-6.0%	0.8298
2011	2.0000	4.9%	1.1004	-6.0%	0.8831
2012	1.0000	4.9%	1.0490	-6.0%	0.9397

Policy Year	(6) Selected Ult. Loss Ratio	(7) Trended Selected Ult. Loss Ratio
2009	0.2338	0.2208
2010	0.2324	0.2226
2011	0.2365	0.2298
2012	0.2332	0.2299

4 yr avg - Select **0.2258**

- Notes:
- (1) Difference between 12/31/xx and 12/31/13 in years
 - (2) from INS Exhibit 3, Page 2, Select Col 10
 - (3) = [1 + (2)] ^ (1)
 - (4) from INS Exhibit 3, Page 1, Select Col 4
 - (5) = [1 + (4)] ^ (1)
 - (6) From INS Exhibit 4, Page 1, Col 13
 - (7) = (3) x (5) x (6); IELR = 4 yr avg - Select

Support for IELR - Medical 2012 Policy Year

Ultimate Trended Medical Loss Ratio
 Trending to December 31, 2012

Policy Year	(1) Number of Years to 12/31/12	(2) Annual Severity Trend	(3) Severity Trend Factor	(4) Annual Frequency Trend	(5) Frequency Trend Factor
2008	4.0000	12.3%	1.5911	-6.3%	0.7710
2009	3.0000	12.3%	1.4167	-6.3%	0.8228
2010	2.0000	12.3%	1.2614	-6.3%	0.8781
2011	1.0000	12.3%	1.1231	-6.3%	0.9370

Policy Year	(6) Selected Ult. Loss Ratio	(7) Trended Selected Ult. Loss Ratio
2008	0.3902	0.4787
2009	0.4429	0.5163
2010	0.5233	0.5796
2011	0.5405	0.5688

4 yr avg - Select 0.5359

Notes:

- (1) Difference between 12/31/xx and 12/31/12 in years
- (2) from INS Exhibit 3, Page 2, Select Col 16
- (3) = [1.0 + (2)] ^ (1)
- (4) from INS Exhibit 3, Page 1, Select Col 6
- (5) = [1.0 + (4)] ^ (1)
- (6) From INS Exhibit 4, Page 2, Col 12
- (7) = (3) x (5) x (6); IELR = 4 yr avg - Select

Support for IELR - Medical 2013 Policy Year

Ultimate Trended Medical Loss Ratio
 Trending to December 31, 2013

Policy Year	(1) Number of Years to 12/31/12	(2) Annual Severity Trend	(3) Severity Trend Factor	(4) Annual Frequency Trend	(5) Frequency Trend Factor
2009	4.0000	12.2%	1.5820	-6.0%	0.7798
2010	3.0000	12.2%	1.4106	-6.0%	0.8298
2011	2.0000	12.2%	1.2578	-6.0%	0.8831
2012	1.0000	12.2%	1.1215	-6.0%	0.9397

Policy Year	(6) Selected Ult. Loss Ratio	(7) Trended Selected Ult. Loss Ratio
2009	0.4429	0.5464
2010	0.5233	0.6125
2011	0.5405	0.6004
2012	0.5148	0.5425

4 yr avg - Select **0.5755**

Notes:

- (1) Difference between 12/31/xx and 12/31/13 in years
- (2) from INS Exhibit 3, Page 2, Select Col 12
- (3) = [1.0 + (2)] ^ (1)
- (4) from INS Exhibit 3, Page 1, Select Col 4
- (5) = [1.0 + (4)] ^ (1)
- (6) From INS Exhibit 4, Page 2, Col 12
- (7) = (3) x (5) x (6); IELR = 4 yr avg - Select

**Impact of Actuarial Assumptions and Methods
 DCRB v INS
 Voluntary Market Indicated Change
 December 1, 2015 Loss Costs**

