# DELAWARE COMPENSATION RATING BUREAU, INC. 

## ACTUARIAL COMMITTEE

## Summary of Material for Modification of Experience

December 1, 2018 Residual Market Rate and Voluntary Market Loss Cost Revision

PROPOSED EFFECTIVE DATE - DECEMBER 1, 2018

INDEX

## PART I - INDICATED RATE AND LOSS COST CHANGE

Exhibit Description ..... Page
I Indicated Change in Rate Level ..... 1 Amended
II Expense Loading ..... 2
III Internal Rate of Return Assumptions ..... 3
IV Policy Year Loss Ratios ..... 4
V Policy Year On-Level Factors ..... 14
VI Policy Year Development Factors ..... 17
VII Determination of Trend Factors ..... 22
Table
I Policy Year Data From Supplemental Call - Standard Earned Premium ..... 25
I-A Policy Year Data From Supplemental Call - Total Incurred* ..... 26
I-B Policy Year Data From Supplemental Call - Indemnity Incurred Losses* ..... 27
I-C Policy Year Data From Supplemental Call - Medical Incurred Losses* ..... 28
I-D Policy Year Data From Supplemental Call - Indemnity Paid Losses* ..... 29
I-E Policy Year Data From Supplemental Call - Medical Paid Losses* ..... 30

* Losses exclude IBNR and Bulk Reserves and individual claims have been cappedat amounts varying by policy year
PART II - CLASSIFICATION RELATIVITY
Exhibit
VIII Rate and Loss Cost Formulae ..... 31
PART III - EXPERIENCE RATING \& RETROSPECTIVE RATING PLANS
Exhibit
IX Collectible Premium Ratios ..... 34
X Expected Loss Rate Factors ..... 35 Amended
XI Tax Multiplier ..... 36
XII Retrospective Development Factors ..... 37


## EXHIBIT I

## INDICATED CHANGE IN RATE LEVEL

|  |  | Indemnity | Medical | Total |
| :---: | :---: | :---: | :---: | :---: |
| (1a) | Policy Year 2013 Loss and Loss Adjustment Expense Ratio | 0.3169 | 0.5402 | 0.8571 |
| (1b) | Policy Year 2014 Loss and Loss Adjustment Expense Ratio | 0.2668 | 0.4680 | 0.7348 |
| (1c) | Policy Year 2015 Loss and Loss Adjustment Expense Ratio | 0.2797 | 0.5752 | 0.8549 |
| (1d) | Policy Year 2016 Loss and Loss Adjustment Expense Ratio | 0.2249 | 0.5285 | 0.7534 |
| (1e) | Average (Midpoint $=7 / 1 / 2015$ ) | 0.2721 | 0.5280 | 0.8001 |
| (2a) | Policy Year 2013 Loss and LAE Ratio Trended to 12/1/2019 | 0.2695 | 0.5829 |  |
| (2b) | Policy Year 2014 Loss and LAE Ratio Trended to 12/1/2019 | 0.2332 | 0.4986 |  |
| (2c) | Policy Year 2015 Loss and LAE Ratio Trended to 12/1/2019 | 0.2513 | 0.6049 |  |
| (2d) | Policy Year 2016 Loss and LAE Ratio Trended to 12/1/2019 | 0.2077 | 0.5487 |  |
| (2e) | Average at 12/1/2019 | 0.2404 | 0.5588 | 0.7992 |
| (3a) | House Bill 373 Adjustment | 1.0000 | 0.6607 |  |
| (3b) | Average Trended Loss and LAE Ratio Post-Legislation (2e) * (3a) | 0.2404 | 0.3692 | 0.6096 |
| (4a) | Excess Loss Factor at \$1,819,104 (Post-Legislative Basis) * |  |  | 0.0765 |
| (4b) | Provision for Excess Loss (5a) - (3b) |  |  | 0.0505 |
| (5a) | Total Trended Loss and LAE Ratio (3b) / (1.0-(4a)) | 0.2482 | 0.4119 | 0.6601 |
| (5b) | Percentage of Total | 37.60\% | 62.40\% |  |
| (6) | Permissible Loss and Loss Adjustment Ratio |  |  | 0.7170 |
| (7) | Indicated Change in Rates (5a) / (6) |  |  | 0.9206 |
| (8) | Estimated Effect of the 7/1/19 Benefit Change |  |  | 1.0077 |
| (9) | Indicated Change in Residual Market Rate Level (7) * (8) |  |  | 0.9277 |
| (9a) | Factor to Adjust for Compromise With Insurance Department |  |  | 0.99933 |
| (9b) | Change in Residual Market Rate Level to Reflect Compromise (9) * (9a) |  |  | $\begin{aligned} & 0.9271 \\ & -7.29 \% \end{aligned}$ |
| (10) | Indicated Change in Voluntary Market Loss Costs (9) * [0.7457 / 0.7681] |  |  | 0.9006 |
| (10a) | Factor to Adjust for Compromise With Insurance Department |  |  | 0.99933 |
| (10b) | Change in Voluntary Market Loss Cost Level to Reflect Compromise (10) * (10a) |  |  | 0.9000 |
|  |  |  |  | -10.00\% |

## CHANGES IN MANUAL PREMIUM LEVEL BY INDUSTRY GROUP

|  |  | Mfg. | Cont. | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (11) | Current Collectible Premium Ratio | 1.0910 | 1.0442 | 0.9299 |  |
| (12) | Proposed Collectible Premium Ratio | 1.0983 | 1.0435 | 0.9156 |  |
| (13) | Change in Collectible Premium Ratio (12) / (11) | 1.0067 | 0.9993 | 0.9846 | 0.9902 |
| (14) | Change in Residual Market Manual Rate Level (9b) * (13) | 0.9333 | 0.9265 | 0.9128 | 0.9180 |
| (15) | Change in Voluntary Market Manual Loss Cost Level (10b) * (13) | 0.9060 | 0.8994 | 0.8861 | 0.8912 |
| (16) | Current Offset for Residual Market Surcharge |  |  |  | 0.9927 |
| (17) | Proposed Offset for Residual Market Surcharge |  |  |  | 0.9942 |
| (18) | Adjusted Change in Voluntary Market Manual Loss Cost Level $(15) *(17) /(16)$ | 0.9074 | 0.9008 | 0.8874 | 0.8925 |

[^0]
## EXHIBIT II

EXPENSE LOADING

Current \%

Proposed \%

## LOSS AND LOSS ADJUSTMENT EXPENSE

| Losses | 61.36 | 58.90 |
| :--- | ---: | :--- |
| Loss Adjustment Expense | 12.81 | 12.80 a |
| Loss \& Loss Adjustment | 74.17 | 71.70 |
|  |  |  |
| UNDERWRITING EXPENSES |  |  |
|  |  | 5.46 |
| Commission | 2.39 | 2.35 |
| Other Acquisition | 3.26 | 3.50 |
| General Expenses | 8.38 | 8.64 |
| Premium Discount | 2.00 | 2.00 |
| State Premium Tax | 0.33 | 0.33 |
| Other State Tax | 1.10 | 1.45 |
| Uncollectible Premium | 2.64 | 2.87 b |
| Administrative Assessment | 3.00 | 2.00 |
| Workers Compensation Fund | 0.00 | 0.00 |
| Deviations | 0.00 | 0.00 |
| Policyholder Dividends | -2.65 | -0.30 |
| Underwriting Profit | 25.83 | 28.30 |

a - As ratio to loss, Loss Adjustment Expense $=0.2174$
b - As ratio to loss, Administrative Assessment $=0.0487$

## RESIDUAL MARKET MINIMUM PREMIUM:

It is proposed that the Minimum Premium formula remain at

> (265 * Rate) + Expense Constant

It is proposed that the Minimum Premium be subject to a Maximum Minimum Premium of $\$ 2000$. It is proposed to use a multiplier of 132.50 in the Minimum Premium formula for the Farm Classes, (0006, 0016, 0034, 0036, 0083).

## RESIDUAL MARKET EXPENSE CONSTANT:

It is proposed that the expense constant increase from $\$ 295$ to $\$ 305$.

## EXHIBIT III

## INTERNAL RATE OF RETURN ANALYSIS <br> STATE OF DELAWARE - 2018 <br> TABLE I: INPUTS, ASSUMPTIONS \& OUTPUTS



## EXHIBIT IV-1

## POLICY YEAR LOSS RATIO 2016*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 162,955,874 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-1) |  |  | 1.1936 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0088 |
| (4) | Expense Constant Removal Factor |  |  | 0.9967 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0155 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6) |  |  | 198,599,563 |
| Loss | es - Paid-to-28th Method | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 7,974,256 | 27,258,277 | 35,232,533 |
|  | Loss Development Factor to Ultimate |  |  |  |
|  | Valuation (Exhibit VI-2 \& VI-4) | 4.9050 | 3.0015 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 39,113,726 | 81,815,718 | 120,929,444 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 19,650,544 | 43,112,566 | 62,763,110 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
|  | Valuation (Exhibit VI-2 \& VI-4) | 1.7371 | 2.1018 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 34,134,960 | 90,613,991 | 124,748,951 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 36,624,343 | 86,214,855 | 122,839,198 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0016 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 44,657,814 | 104,957,964 | 149,615,778 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.2249 | 0.5285 | 0.7534 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.4614 | 0.4614 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4874 | 1.1454 | 1.6328 |

[^1]
## EXHIBIT IV - 2

## POLICY YEAR LOSS RATIO 2015*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 144,196,548 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-1) |  |  | 1.2617 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0020 |
| (4) | Expense Constant Removal Factor |  |  | 0.9965 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0155 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 184,474,320 |
| Loss | es - Paid-to-28th Method | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 18,817,519 | 38,934,424 | 57,751,943 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 46,641,103 | 84,250,200 | 130,891,303 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 28,161,664 | 52,029,320 | 80,190,984 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
|  | Valuation (Exhibit VI-2 \& VI-4) | 1.3032 | 1.7312 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 36,700,281 | 90,073,159 | 126,773,440 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 41,670,692 | 87,161,680 | 128,832,372 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0170 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 51,592,309 | 106,110,629 | 157,702,938 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.2797 | 0.5752 | 0.8549 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.5445 | 0.5445 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5137 | 1.0565 | 1.5702 |

[^2]
## EXHIBIT IV - 3

## POLICY YEAR LOSS RATIO 2014*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 144,634,010 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-1) |  |  | 1.1431 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0020 |
| (4) | Expense Constant Removal Factor |  |  | 0.9967 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0141 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6) |  |  | 167,443,238 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 22,373,935 | 34,294,403 | 56,668,338 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 39,308,766 | 64,596,937 | 103,905,703 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 27,889,963 | 41,209,211 | 69,099,174 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 32,737,239 | 64,150,379 | 96,887,618 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 36,023,003 | 64,373,658 | 100,396,661 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0185 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 44,665,710 | 78,368,491 | 123,034,201 |
| (18) | Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7) | 0.2668 | 0.4680 | 0.7348 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.5185 | 0.5185 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5146 | 0.9027 | 1.4173 |

[^3]
## EXHIBIT IV-4

## POLICY YEAR LOSS RATIO 2013*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 131,778,597 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-1) |  |  | 1.2577 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0022 |
| (4) | Expense Constant Removal Factor |  |  | 0.9966 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0139 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 167,838,792 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 30,147,559 | 43,142,070 | 73,289,629 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 44,636,476 | 74,683,237 | 119,319,713 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 36,079,815 | 51,514,297 | 87,594,112 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 40,156,834 | 74,263,011 | 114,419,845 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 42,396,655 | 74,473,124 | 116,869,779 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0304 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 53,182,744 | 90,663,581 | 143,846,325 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.3169 | 0.5402 | 0.8571 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6040 | 0.6040 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5246 | 0.8943 | 1.4189 |

[^4]
## EXHIBIT IV - 5

## POLICY YEAR LOSS RATIO 2012*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 112,746,890 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-1) |  |  | 1.5422 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0013 |
| (4) | Expense Constant Removal Factor |  |  | 0.9966 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0156 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 176,219,133 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 30,724,059 | 42,435,272 | 73,159,331 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 41,200,963 | 69,020,970 | 110,221,933 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 35,148,125 | 48,450,871 | 83,598,996 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 37,910,768 | 65,820,508 | 103,731,276 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 39,555,866 | 67,420,739 | 106,976,605 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0528 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 50,697,912 | 82,078,008 | 132,775,920 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.5763 | 0.5763 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4992 | 0.8082 | 1.3074 |

[^5]
## EXHIBIT IV - 6

## POLICY YEAR LOSS RATIO 2011*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 103,516,108 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-2) |  |  | 1.7974 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 0.9999 |
| (4) | Expense Constant Removal Factor |  |  | 0.9968 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0145 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 188,134,880 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 33,813,759 | 49,214,277 | 83,028,036 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 42,541,090 | 76,075,429 | 118,616,519 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 36,374,138 | 57,945,661 | 94,319,799 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 38,451,101 | 75,080,193 | 113,531,294 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ulimate Incurred Losses ((10) + (13)) / 2 | 40,496,096 | 75,577,811 | 116,073,907 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0681 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 52,657,274 | 92,008,427 | 144,665,701 |
| (18) | Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7) | 0.2799 | 0.4891 | 0.7690 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6426 | 0.6426 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4356 | 0.7611 | 1.1967 |

[^6]
## EXHIBIT IV-7

## POLICY YEAR LOSS RATIO 2010*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 103,608,768 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-2) |  |  | 1.7849 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 0.9999 |
| (4) | Expense Constant Removal Factor |  |  | 0.9970 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0141 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6) |  |  | 186,957,507 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 35,005,402 | 53,387,809 | 88,393,211 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 42,132,502 | 78,987,263 | 121,119,765 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 37,638,703 | 65,107,430 | 102,746,133 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 39,245,876 | 81,169,433 | 120,415,309 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 40,689,189 | 80,078,348 | 120,767,537 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0648 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 52,744,888 | 97,487,381 | 150,232,269 |
| (18) | Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7) | 0.2821 | 0.5214 | 0.8035 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6862 | 0.6862 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4111 | 0.7598 | 1.1709 |

[^7]
## EXHIBIT IV - 8

## POLICY YEAR LOSS RATIO 2009*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 115,152,826 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-2) |  |  | 1.6406 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 0.9999 |
| (4) | Expense Constant Removal Factor |  |  | 0.9971 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0147 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6) |  |  | 191,121,811 |
| Losses - Paid-to-28th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 38,550,804 | 49,002,036 | 87,552,840 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 44,915,542 | 69,744,598 | 114,660,140 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 41,748,513 | 57,951,604 | 99,700,117 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 43,113,689 | 69,976,562 | 113,090,251 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 44,014,616 | 69,860,580 | 113,875,196 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0620 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 56,905,564 | 85,048,270 | 141,953,834 |
| (18) | Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7) | 0.2977 | 0.4450 | 0.7427 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6862 | 0.6862 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4338 | 0.6485 | 1.0823 |

[^8]
## EXHIBIT IV - 9

## POLICY YEAR LOSS RATIO 2008*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 146,412,868 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-2) |  |  | 1.3172 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0000 |
| (4) | Expense Constant Removal Factor |  |  | 0.9974 |
| (5) | DCCPAP On-Level Factor |  |  | 0.9989 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6) |  |  | 192,142,018 |
| Loss | ses - Paid-to-28th Method | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 34,357,379 | 45,066,564 | 79,423,943 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 39,054,033 | 61,948,499 | 101,002,532 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 36,043,140 | 54,312,305 | 90,355,445 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 36,962,240 | 63,849,546 | 100,811,786 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 38,008,137 | 62,899,023 | 100,907,160 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0660 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 49,324,999 | 76,573,271 | 125,898,270 |
|  | Policy Year Loss and Loss Adjustment |  |  |  |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6904 | 0.6904 |  |
|  | Severity Ratio** (18) / (19) | 0.3718 | 0.5772 | 0.9490 |

[^9]
## EXHIBIT IV - 10

## POLICY YEAR LOSS RATIO 2007*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 194,794,662 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 6/1/18 Rate Level (Exhibit V-2) |  |  | 0.9762 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0000 |
| (4) | Expense Constant Removal Factor |  |  | 0.9977 |
| (5) | DCCPAP On-Level Factor |  |  | 0.9974 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 189,227,909 |
| Loss | es - Paid-to-28th Method | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 38,293,859 | 46,290,595 | 84,584,454 |
| (9) | Loss Development Factor to Ultimate |  |  |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 42,693,823 | 61,672,960 | 104,366,783 |
| Losses - Incurred Method |  |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 40,977,735 | 53,278,398 | 94,256,133 |
| (12) | Loss Development Factor to Ultimate |  |  |  |
|  | Valuation (Exhibit VI-2 \& VI-4) | 1.0202 | 1.1491 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 41,805,485 | 61,222,207 | 103,027,692 |
| Losses - Average of Incurred and Paid-to-28th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 42,249,654 | 61,447,584 | 103,697,238 |
| (15) | Factor to 7/1/18 Benefit Level (Exhibit V-3) | 1.0843 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2174 | 1.2174 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 55,770,676 | 74,806,289 | 130,576,965 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.2947 | 0.3953 | 0.6900 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.7802 | 0.7802 |  |
| (20) | Severity Ratio** (18) / (19) | 0.3777 | 0.5067 | 0.8844 |

[^10]|  | POLICY YEARS 2011-2016 <br> PREMIUM ON-LEVEL FACTORS |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (1) | (2) | (3) |  | (4) | (5) | FACTOR |
|  |  | RATE |  | CUM. |  | PORTION |  | TO ADJUST |
| POLICY |  | CHANGE | RATE | INDEX OF |  | OF YEAR | PRODUCT | TO 06/1/18 |
| YEAR |  | DATE | CHANGE | COL (2) |  | ON-LEVEL | (3) * (4) | RATE LEVEL |
| 2016 | VOL | 12/01/15 | BASE | 0.7102 | * | 0.8046 | 0.5714 |  |
|  |  | 12/01/16 | 1.0000 | 0.7102 |  | 0.0530 | 0.0376 |  |
|  |  | 12/01/17 | 0.9700 | 0.6889 |  | --- | --------------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.8576 | 0.6090 |  |
|  | RM | 12/01/15 | BASE | 1.0000 |  | 0.1333 | 0.1333 |  |
|  |  | 12/01/16 | 1.0000 | 1.0000 |  | 0.0091 | 0.0091 |  |
|  |  | 12/01/17 | 0.8969 | 0.8969 |  | ------------ | -------------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.1424 | 0.1424 |  |
| * | Loss, LAE and LBA portion of 12/1/15 rate. |  |  |  |  |  | 0.7514 | 1.1936 |
| 2015 | VOL | 12/01/14 | BASE | 0.7095 | * | 0.7784 | 0.5523 |  |
|  |  | 12/01/15 | 1.0720 | 0.7606 |  | 0.0558 | 0.0424 |  |
|  |  | 12/01/16 | 0.9700 | 0.7378 |  | -------- | -------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.8342 | 0.5947 |  |
|  | RM | 12/01/14 | BASE | 1.0000 |  | 0.1545 | 0.1545 |  |
|  |  | 12/01/15 | 1.0709 | 1.0709 |  | 0.0113 | 0.0121 |  |
|  |  | 12/01/16 | 0.8969 | 0.9605 |  | -------------- | -------------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.1658 | 0.1666 |  |
| * | Loss, LAE and LBA portion of 12/1/14 rate. |  |  |  |  |  | 0.7613 | 1.2617 |
| 2014 | VOL | 12/01/13 | BASE | 0.7239 | * | 0.8065 | 0.5838 |  |
|  |  | 12/01/14 | 0.8850 | 0.6407 |  | 0.0494 | 0.0317 |  |
|  |  | 12/01/15 | 1.0398 | 0.6662 |  | ------------- | ----- |  |
|  |  | TO 06/1/18 |  |  |  | 0.8559 | 0.6155 |  |
|  | RM | 12/01/13 | BASE | 1.0000 |  | 0.1351 | 0.1351 |  |
|  |  | 12/01/14 | 0.9030 | 0.9030 |  | 0.0090 | 0.0081 |  |
|  |  | 12/01/15 | 0.9605 | 0.8673 |  | -------------- | -------------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.1441 | 0.1432 |  |
| * | Loss, LAE and LBA portion of 12/1/13 rate. |  |  |  |  |  | 0.7587 | 1.1431 |
| 2013 | VOL | 12/01/12 | BASE | 0.7074 | * | 0.7587 | 0.5367 |  |
|  |  | 12/01/13 | 1.1400 | 0.8064 |  | 0.0576 | 0.0464 |  |
|  |  | 12/01/14 | 0.9203 | 0.7421 |  | ----- | ----- |  |
|  |  | TO 06/1/18 |  |  |  | 0.8163 | 0.5831 |  |
|  | RM | 12/01/12 | BASE | 1.0000 |  | 0.1717 | 0.1717 |  |
|  |  | 12/01/13 | 1.1140 | 1.1140 |  | 0.0120 | 0.0134 |  |
|  |  | 12/01/14 | 0.8673 | 0.9662 |  | ----------- | ---------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.1837 | 0.1851 |  |
| * | Loss, LAE and LBA portion of 12/1/12 rate. |  |  |  |  |  | 0.7682 | 1.2577 |
| 2012 | VOL | 12/01/11 | BASE | 0.7343 | * | 0.7713 | 0.5664 |  |
|  |  | 12/01/12 | 1.2166 | 0.8933 |  | 0.0791 | 0.0707 |  |
|  |  | 12/01/13 | 1.0491 | 0.9372 |  | -------------- | ------------ |  |
|  |  | TO 06/1/18 |  |  |  | 0.8504 | 0.6371 |  |
|  | RM | 12/01/11 | BASE | 1.0000 |  | 0.1377 | 0.1377 |  |
|  |  | 12/01/12 | 1.2606 | 1.2606 |  | 0.0119 | 0.0150 |  |
|  |  | 12/01/13 | 0.9662 | 1.2180 |  | --------------- | -------------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.1496 | 0.1527 |  |
| * | Loss, LAE and LBA portion of 12/1/11 rate. |  |  |  |  |  | 0.7898 | 1.5422 |
| 2011 | VOL | 12/01/10 | BASE | 0.7688 | * | 0.8259 | 0.6350 |  |
|  |  | 12/01/11 | 1.1261 | 0.8657 |  | 0.0662 | 0.0573 |  |
|  |  | 12/01/12 | 1.2763 | 1.1049 |  | ------------ | ----------- |  |
|  |  | TO 06/1/18 |  |  |  | 0.8921 | 0.6923 |  |
|  | RM | 12/01/10 | BASE | 1.0000 |  | 0.1012 | 0.1012 |  |
|  |  | 12/01/11 | 1.1826 | 1.1826 |  | 0.0067 | 0.0079 |  |
|  |  | 12/01/12 | 1.2180 | 1.4404 |  | ------------- | ------------ |  |
|  |  | TO 06/1/18 |  |  |  | 0.1079 | 0.1091 |  |
| * | Loss, LAE | LBA portion | 10 rate. |  |  |  | 0.8014 | 1.7974 |

EXHIBIT V-2
POLICY YEARS 2007-2010 PREMIUM ON-LEVEL FACTORS


POLICY YEARS 2007-2016
INDEMNITY LOSS ON-LEVEL FACTORS


## EXHIBIT VI-1

## DEVELOPMENT FACTORS



[^11]
## INDEMNITY LOSSES

PAID METHOD - LIMITED LOSS BASIS


| Reports in Ratio |  | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 13-14 \end{aligned}$ | ```Calendar Years 14-15``` | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 15-16 \end{aligned}$ |  | Unweighted Average | Fitted Value | Cumulative Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2nd to 1st | C | 1.3228 | 1.2848 | 1.2769 | 1.4485 | 1.3333 | 1.3330 | 1.7371 |
| 3 rd to 2nd | c | 1.0995 | 1.1071 | 1.1258 | 1.1004 | 1.1082 | 1.1102 | 1.3032 |
| 4th to 3rd | c | 1.0578 | 1.0427 | 1.0886 | 1.0419 | 1.0578 | 1.0546 | 1.1738 |
| 5th to 4th | C | 1.0632 | 0.9869 | 1.0250 | 1.0282 | 1.0258 | 1.0319 | 1.1130 |
| 6th to 5th | C | 1.0329 | 1.0338 | 1.0243 | 1.0087 | 1.0249 | 1.0204 | 1.0786 |
| 7th to 6th | c | 1.0344 | 1.0052 | 1.0141 | 1.0289 | 1.0207 | 1.0138 | 1.0571 |
| 8th to 7th | c | 1.0099 | 1.0102 | 1.0055 | 1.0119 | 1.0094 | 1.0097 | 1.0427 |
| 9th to 8th | c | 1.0009 | 1.0128 | 1.0065 | 1.0058 | 1.0065 | 1.0070 | 1.0327 |
| 10th to 9th | c | 1.0083 | 1.0009 | 1.0082 | 0.9948 | 1.0031 | 1.0052 | 1.0255 |
| 11th to 10th | C | 1.0237 | 1.0017 | 0.9971 | 1.0028 | 1.0063 | 1.0039 | 1.0202 |
| 12th to 11th | c | 0.9964 | 0.9997 | 1.0053 | 1.0061 | 1.0019 | 1.0030 | 1.0162 |
| 13th to 12th | C | 1.0020 | 0.9946 | 1.0000 | 0.9979 | 0.9986 | 1.0023 | 1.0132 |
| 14th to 13th | c | 1.0031 | 1.0002 | 0.9993 | 0.9971 | 0.9999 | 1.0018 | 1.0109 |
| 15th to 14th | c | 0.9977 | 0.9960 | 0.9992 | 0.9983 | 0.9978 | 1.0014 | 1.0090 |
| 16th to 15th | c | 0.9997 | 0.9981 | 0.9985 | 1.0000 | 0.9991 | 1.0011 | 1.0076 |
| 17th to 16th | c | 0.9981 | 1.0004 | 1.0068 | 0.9975 | 1.0007 | 1.0009 | 1.0065 |
| 18th to 17th | c | 0.9962 | 0.9964 | 1.0008 | 1.0032 | 0.9992 | 1.0007 | 1.0056 |
| 19th to 18th | C | 0.9993 | 1.0014 | 0.9976 | 1.0002 | 0.9996 | 1.0006 | 1.0049 |
| 20th to 19th | c | 0.9884 | 0.9987 | 1.0005 | 0.9992 | 0.9967 | 1.0005 | 1.0043 |
| 21st to 20th | c | 0.9989 | 1.0122 | 0.9914 | 0.9991 | 1.0004 | 1.0004 | 1.0038 |
| 22nd to 21st | c | 0.9983 | 1.0031 | 0.9948 | 0.9990 | 0.9988 | 1.0003 | 1.0034 |
| 23rd to 22nd | c | 1.0086 | 0.9990 | 0.9990 | 1.0018 | 1.0021 | 1.0003 | 1.0031 |
| 24th to 23rd | c | 0.9988 | 1.0008 | 0.9975 | 1.0008 | 0.9995 | 1.0002 | 1.0028 |
| 25th to 24th | c | 0.9978 | 1.0159 | 0.9966 | 0.9983 | 1.0022 | 1.0002 | 1.0026 |
| 26th to 25th | C | 0.9990 | 0.9952 | 0.9984 | 0.9976 | 0.9976 | 1.0001 | 1.0024 |
| 27th to 26th | c | 0.9997 | 1.0017 | 0.9994 | 1.0028 | 1.0009 | 1.0001 | 1.0023 |
| 28th to 27th | c | 1.0005 | 0.9990 | 0.9990 | 0.9968 | 0.9988 | 1.0001 | 1.0022 |
| Beyond 28th | c | 0.9896 | 0.9990 | 1.0029 | 1.0168 | 1.0021 | 1.0021 | 1.0021 |

[^12]FITTED DEVELOPMENT FACTORS

## INDEMNITY LOSSES

## Paid Development



Incurred Development

|  | 4 Year Average | 4 Year Average - 1 | Fitted Value | Fitted Value + 1 |
| :---: | :---: | :---: | :---: | :---: |
| 2nd to 1st | 1.3333 | 0.3333 | 0.3330 | 1.3330 |
| 3 rd to 2nd | 1.1082 | 0.1082 | 0.1102 | 1.1102 |
| 4th to 3rd | 1.0578 | 0.0578 | 0.0546 | 1.0546 |
| 5th to 4th | 1.0258 | 0.0258 | 0.0319 | 1.0319 |
| 6th to 5th | 1.0249 | 0.0249 | 0.0204 | 1.0204 |
| 7th to 6th | 1.0207 | 0.0207 | 0.0138 | 1.0138 |
| 8th to 7th | 1.0094 | 0.0094 | 0.0097 | 1.0097 |
| 9th to 8th | 1.0065 | 0.0065 | 0.0070 | 1.0070 |
| 10th to 9th | 1.0031 | 0.0031 | 0.0052 | 1.0052 |
| 11th to 10th | 1.0063 | 0.0063 | 0.0039 | 1.0039 |
| 12th to 11th | 1.0019 | 0.0019 | 0.0030 | 1.0030 |
| 13th to 12th | 0.9986 | -0.0014 | 0.0023 | 1.0023 |
| 14th to 13th | 0.9999 | -0.0001 | 0.0018 | 1.0018 |
| 15th to 14th | 0.9978 | -0.0022 | 0.0014 | 1.0014 |
| 16th to 15th | 0.9991 | -0.0009 | 0.0011 | 1.0011 |
| 17th to 16th | 1.0007 | 0.0007 | 0.0009 | 1.0009 |
| 18th to 17th | 0.9992 | -0.0008 | 0.0007 | 1.0007 |
| 19th to 18th | 0.9996 | -0.0004 | 0.0006 | 1.0006 |
| 20th to 19th | 0.9967 | -0.0033 | 0.0005 | 1.0005 |
| 21st to 20th | 1.0004 | 0.0004 | 0.0004 | 1.0004 |
| 22nd to 21st | 0.9988 | -0.0012 | 0.0003 | 1.0003 |
| 23rd to 22nd | 1.0021 | 0.0021 | 0.0003 | 1.0003 |
| 24th to 23rd | 0.9995 | -0.0005 | 0.0002 | 1.0002 |
| 25th to 24th | 1.0022 | 0.0022 | 0.0002 | 1.0002 |
| 26th to 25th | 0.9976 | -0.0024 | 0.0001 | 1.0001 |
| 27th to 26th | 1.0009 | 0.0009 | 0.0001 | 1.0001 |
| 28th to 27th | 0.9988 | -0.0012 | 0.0001 | 1.0001 |
| Beyond 28th+ | 1.0021 | 0.0021 | 0.0021 | 1.0021 |

[^13]medical losses
PAID METHOD - LIMITED LOSS BASIS

| Reports in Ratio | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 13-14 \end{aligned}$ | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 14-15 \end{aligned}$ | ```Calendar Years 15-16``` | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 16-17 \end{aligned}$ | Unweighted Average | Fitted Value | Cumulative Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2nd to 1st a | 1.3604 | 1.4416 | 1.3991 | 1.3447 | 1.3865 | 1.3871 | 3.0015 |
| 3 rd to 2nd a | 1.1127 | 1.1686 | 1.1930 | 1.1372 | 1.1529 | 1.1488 | 2.1639 |
| 4th to 3rd a | 1.1042 | 1.0798 | 1.0854 | 1.0754 | 1.0862 | 1.0881 | 1.8836 |
| 5th to 4th a | 1.0575 | 1.0702 | 1.0179 | 1.0670 | 1.0532 | 1.0643 | 1.7311 |
| 6th to 5th a | 1.0532 | 1.0854 | 1.0474 | 1.0577 | 1.0609 | 1.0522 | 1.6265 |
| 7th to 6th a | 1.0357 | 1.0487 | 1.0600 | 1.0422 | 1.0467 | 1.0448 | 1.5458 |
| 8th to 7th a | 1.0455 | 1.0322 | 1.0428 | 1.0413 | 1.0405 | 1.0395 | 1.4795 |
| 9th to 8th a | 1.0287 | 1.0447 | 1.0318 | 1.0240 | 1.0323 | 1.0354 | 1.4233 |
| 10th to 9th a | 1.0274 | 1.0197 | 1.0424 | 1.0400 | 1.0324 | 1.0318 | 1.3746 |
| 11th to 10th a | 1.0320 | 1.0326 | 1.0423 | 1.0221 | 1.0323 | 1.0287 | 1.3323 |
| 12th to 11th a | 1.0330 | 1.0219 | 1.0207 | 1.0182 | 1.0235 | 1.0260 | 1.2951 |
| 13th to 12th a | 1.0212 | 1.0526 | 1.0216 | 1.0184 | 1.0285 | 1.0234 | 1.2623 |
| 14th to 13th a | 1.0217 | 1.0152 | 1.0150 | 1.0312 | 1.0208 | 1.0211 | 1.2334 |
| 15th to 14th a | 1.0046 | 1.0174 | 1.0340 | 1.0127 | 1.0172 | 1.0190 | 1.2079 |
| 16th to 15th a | 1.0047 | 1.0179 | 1.0092 | 1.0159 | 1.0119 | 1.0170 | 1.1854 |
| 17th to 16th a | 1.0226 | 1.0095 | 1.0066 | 1.0071 | 1.0115 | 1.0153 | 1.1656 |
| 18th to 17th a | 1.0181 | 1.0100 | 1.0155 | 1.0032 | 1.0117 | 1.0137 | 1.1480 |
| 19th to 18th a | 1.0141 | 1.0224 | 1.0178 | 1.0223 | 1.0192 | 1.0123 | 1.1325 |
| 20th to 19th a | 1.0243 | 1.0070 | 1.0146 | 1.0065 | 1.0131 | 1.0111 | 1.1188 |
| 21st to 20th a | 1.0086 | 1.0050 | 1.0054 | 1.0090 | 1.0070 | 1.0100 | 1.1065 |
| 22nd to 21st a | 1.0116 | 1.0134 | 1.0096 | 1.0038 | 1.0096 | 1.0091 | 1.0955 |
| 23rd to 22nd a | 1.0083 | 1.0078 | 1.0108 | 1.0056 | 1.0081 | 1.0084 | 1.0856 |
| 24th to 23rd a | 1.0072 | 1.0139 | 1.0031 | 1.0089 | 1.0083 | 1.0078 | 1.0766 |
| 25th to 24th a | 1.0167 | 1.0095 | 1.0027 | 1.0019 | 1.0077 | 1.0073 | 1.0683 |
| 26th to 25th a | 1.0050 | 1.0202 | 1.0048 | 1.0045 | 1.0086 | 1.0070 | 1.0605 |
| 27th to 26th a | 1.0112 | 1.0023 | 1.0031 | 1.0095 | 1.0065 | 1.0069 | 1.0532 |
| 28th to 27th b | 1.0371 | 1.0748 | 1.0043 | 1.0284 | 1.0362 | 1.0362 | 1.0459 |
| Beyond 28th c | 1.0165 | 0.9833 | 1.0211 | 1.0165 | 1.0094 | 1.0094 | 1.0094 |


| Reports in Ratio |  | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 13-14 \end{aligned}$ | ```Calendar Years 14-15``` | $\begin{aligned} & \text { Calendar } \\ & \text { Years } \\ & 15-16 \end{aligned}$ |  | Unweighted Average | Fitted Value | Cumulative Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2nd to 1st | C | 1.2377 | 1.2823 | 1.1887 | 1.1503 | 1.2148 | 1.2141 | 2.1018 |
| 3 rd to 2nd | c | 1.0855 | 1.1393 | 1.1472 | 1.0868 | 1.1147 | 1.1121 | 1.7312 |
| 4th to 3rd | c | 1.0692 | 1.0465 | 1.0567 | 1.0893 | 1.0654 | 1.0798 | 1.5567 |
| 5th to 4th | C | 1.1216 | 1.0709 | 1.0321 | 1.0271 | 1.0629 | 1.0612 | 1.4416 |
| 6th to 5th | C | 1.0812 | 1.0567 | 1.0613 | 1.0376 | 1.0592 | 1.0485 | 1.3585 |
| 7th to 6th | C | 1.0224 | 1.0343 | 1.0250 | 1.0584 | 1.0350 | 1.0393 | 1.2957 |
| 8th to 7th | C | 1.0615 | 1.0285 | 1.0597 | 1.0464 | 1.0490 | 1.0324 | 1.2467 |
| 9th to 8th | C | 1.0329 | 1.0066 | 1.0396 | 1.0187 | 1.0245 | 1.0272 | 1.2075 |
| 10th to 9th | C | 1.0161 | 1.0259 | 1.0286 | 1.0118 | 1.0206 | 1.0230 | 1.1756 |
| 11th to 10th | C | 1.0119 | 1.0356 | 1.0274 | 0.9971 | 1.0180 | 1.0196 | 1.1491 |
| 12th to 11th | C | 1.0135 | 1.0116 | 1.0392 | 0.9778 | 1.0105 | 1.0169 | 1.1270 |
| 13th to 12th | c | 0.9987 | 1.0226 | 1.0170 | 1.0447 | 1.0208 | 1.0146 | 1.1083 |
| 14th to 13th | c | 0.9887 | 1.0256 | 1.0252 | 1.0181 | 1.0144 | 1.0127 | 1.0924 |
| 15th to 14th | c | 0.9764 | 0.9929 | 1.0334 | 1.0086 | 1.0028 | 1.0110 | 1.0787 |
| 16th to 15th | C | 0.9990 | 1.0199 | 1.0176 | 1.0264 | 1.0157 | 1.0096 | 1.0669 |
| 17th to 16th | C | 1.0017 | 1.0030 | 0.9921 | 1.0229 | 1.0049 | 1.0083 | 1.0568 |
| 18th to 17th | c | 0.9846 | 1.0020 | 1.0219 | 1.0141 | 1.0057 | 1.0072 | 1.0481 |
| 19th to 18th | C | 0.9932 | 1.0197 | 1.0013 | 1.0031 | 1.0043 | 1.0062 | 1.0406 |
| 20th to 19th | c | 0.9761 | 1.0027 | 0.9973 | 1.0201 | 0.9991 | 1.0053 | 1.0342 |
| 21st to 20th | c | 1.0122 | 1.0055 | 1.0047 | 0.9961 | 1.0046 | 1.0045 | 1.0287 |
| 22nd to 21st | c | 1.0034 | 1.0071 | 0.9861 | 0.9807 | 0.9943 | 1.0038 | 1.0241 |
| 23rd to 22nd | c | 0.9838 | 1.0164 | 0.9994 | 1.0034 | 1.0008 | 1.0031 | 1.0202 |
| 24th to 23rd | C | 1.0027 | 1.0042 | 1.0078 | 1.0058 | 1.0051 | 1.0025 | 1.0171 |
| 25th to 24th | c | 1.0077 | 1.0127 | 0.9997 | 1.0010 | 1.0053 | 1.0020 | 1.0146 |
| 26th to 25th | c | 0.9967 | 1.0125 | 1.0080 | 1.0001 | 1.0043 | 1.0015 | 1.0125 |
| 27th to 26th | c | 1.0041 | 1.0037 | 1.0051 | 1.0089 | 1.0055 | 1.0010 | 1.0110 |
| 28th to 27th | c | 1.0056 | 1.0086 | 1.0011 | 1.0072 | 1.0056 | 1.0006 | 1.0100 |
| Beyond 28th | C | 1.0165 | 0.9833 | 1.0211 | 1.0165 | 1.0094 | 1.0094 | 1.0094 |

[^14]
## FITTED DEVELOPMENT FACTORS

## MEDICAL LOSSES

## Paid Development

|  | 4 Year Average | 4 Year Average - 1 | Fitted Value | Fitted Value + 1 |
| :---: | :---: | :---: | :---: | :---: |
| 2nd to 1st | 1.3865 | 0.3865 | 0.3871 | 1.3871 |
| 3rd to 2nd | 1.1529 | 0.1529 | 0.1488 | 1.1488 |
| 4th to 3rd | 1.0862 | 0.0862 | 0.0881 | 1.0881 |
| 5th to 4th | 1.0532 | 0.0532 | 0.0643 | 1.0643 |
| 6th to 5th | 1.0609 | 0.0609 | 0.0522 | 1.0522 |
| 7th to 6th | 1.0467 | 0.0467 | 0.0448 | 1.0448 |
| 8th to 7th | 1.0405 | 0.0405 | 0.0395 | 1.0395 |
| 9th to 8th | 1.0323 | 0.0323 | 0.0354 | 1.0354 |
| 10th to 9th | 1.0324 | 0.0324 | 0.0318 | 1.0318 |
| 11th to 10th | 1.0323 | 0.0323 | 0.0287 | 1.0287 |
| 12th to 11th | 1.0235 | 0.0235 | 0.0260 | 1.0260 |
| 13th to 12th | 1.0285 | 0.0285 | 0.0234 | 1.0234 |
| 14th to 13th | 1.0208 | 0.0208 | 0.0211 | 1.0211 |
| 15th to 14th | 1.0172 | 0.0172 | 0.0190 | 1.0190 |
| 16th to 15th | 1.0119 | 0.0119 | 0.0170 | 1.0170 |
| 17th to 16th | 1.0115 | 0.0115 | 0.0153 | 1.0153 |
| 18th to 17th | 1.0117 | 0.0117 | 0.0137 | 1.0137 |
| 19th to 18th | 1.0192 | 0.0192 | 0.0123 | 1.0123 |
| 20th to 19th | 1.0131 | 0.0131 | 0.0111 | 1.0111 |
| 21st to 20th | 1.0070 | 0.0070 | 0.0100 | 1.0100 |
| 22nd to 21st | 1.0096 | 0.0096 | 0.0091 | 1.0091 |
| 23rd to 22nd | 1.0081 | 0.0081 | 0.0084 | 1.0084 |
| 24th to 23rd | 1.0083 | 0.0083 | 0.0078 | 1.0078 |
| 25th to 24th | 1.0077 | 0.0077 | 0.0073 | 1.0073 |
| 26th to 25th | 1.0086 | 0.0086 | 0.0070 | 1.0070 |
| 27th to 26th | 1.0065 | 0.0065 | 0.0069 | 1.0069 |
| 28th to 27th* | 1.0362 | 0.0362 | 0.0362 | 1.0362 |

$\mathrm{Y}=\mathrm{a}+\mathrm{b}^{\star} \ln (\mathrm{x})+\mathrm{c}^{\star} \ln (\mathrm{x})^{\wedge} 2+\mathrm{d}^{\star} \ln (\mathrm{x})^{\wedge} 3+\mathrm{e}^{\star} \ln (\mathrm{x})^{\wedge} 4$
$a=0.387144 b=-0.520475 c=0.311137 d=-0.087652 e=0.009267$

* Paid-Incurred four year average

| Incurred Development |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 4 Year Average | 4 Year Average - 1 | Fitted Value | Fitted Value + 1 |
| 2nd to 1st | 1.2148 | 0.2148 | 0.2141 | 1.2141 |
| 3 rd to 2nd | 1.1147 | 0.1147 | 0.1121 | 1.1121 |
| 4th to 3rd | 1.0654 | 0.0654 | 0.0798 | 1.0798 |
| 5th to 4th | 1.0629 | 0.0629 | 0.0612 | 1.0612 |
| 6th to 5th | 1.0592 | 0.0592 | 0.0485 | 1.0485 |
| 7th to 6th | 1.0350 | 0.0350 | 0.0393 | 1.0393 |
| 8th to 7th | 1.0490 | 0.0490 | 0.0324 | 1.0324 |
| 9th to 8th | 1.0245 | 0.0245 | 0.0272 | 1.0272 |
| 10th to 9th | 1.0206 | 0.0206 | 0.0230 | 1.0230 |
| 11th to 10th | 1.0180 | 0.0180 | 0.0196 | 1.0196 |
| 12th to 11th | 1.0105 | 0.0105 | 0.0169 | 1.0169 |
| 13th to 12th | 1.0208 | 0.0208 | 0.0146 | 1.0146 |
| 14th to 13th | 1.0144 | 0.0144 | 0.0127 | 1.0127 |
| 15th to 14th | 1.0028 | 0.0028 | 0.0110 | 1.0110 |
| 16th to 15th | 1.0157 | 0.0157 | 0.0096 | 1.0096 |
| 17th to 16th | 1.0049 | 0.0049 | 0.0083 | 1.0083 |
| 18th to 17th | 1.0057 | 0.0057 | 0.0072 | 1.0072 |
| 19th to 18th | 1.0043 | 0.0043 | 0.0062 | 1.0062 |
| 20th to 19th | 0.9991 | -0.0009 | 0.0053 | 1.0053 |
| 21st to 20th | 1.0046 | 0.0046 | 0.0045 | 1.0045 |
| 22nd to 21st | 0.9943 | -0.0057 | 0.0038 | 1.0038 |
| 23rd to 22nd | 1.0008 | 0.0008 | 0.0031 | 1.0031 |
| 24th to 23rd | 1.0051 | 0.0051 | 0.0025 | 1.0025 |
| 25th to 24th | 1.0053 | 0.0053 | 0.0020 | 1.0020 |
| 26th to 25th | 1.0043 | 0.0043 | 0.0015 | 1.0015 |
| 27th to 26th | 1.0055 | 0.0055 | 0.0010 | 1.0010 |
| 28th to 27th | 1.0056 | 0.0056 | 0.0006 | 1.0006 |
| Beyond 28th+ | 1.0094 | 0.0094 | 0.0094 | 1.0094 |

[^15]
## EXHIBIT VII-1

DETERMINATION OF TREND

## INDEMNITY

Policy Year
Actual Loss Ratio Normalized Frequency Severity Loss Ratio

|  | $\mathbf{2 0 1 0}$ | $\mathbf{2 0 1 1}$ | $\mathbf{2 0 1 2}$ | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0.2821 | 0.2799 | 0.2877 | 0.3169 | 0.2668 | 0.2797 | 0.2249 |
|  | 0.6862 | 0.6426 | 0.5763 | 0.6040 | 0.5185 | 0.5445 | 0.4614 |
|  | 0.4111 | 0.4356 | 0.4992 | 0.5246 | 0.5146 | 0.5137 | 0.4874 |
| $\mathbf{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| $\mathbf{y}$ | 0.4111 | 0.4356 | 0.4992 | 0.5246 | 0.5146 | 0.5137 | 0.4874 |

7 Point Exponential Regression: $y=0.425591$ * $1.031595 \wedge^{\wedge} x$

Selected Annual Trend =
3.2\%

| Policy |  | Trend Period \# Years | Severity | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| Year | Trend Factor <br> (1) | to $12 / 1 / 19$ <br> (2) | Trend Factor $(3)=(1)^{\wedge}(2)$ | Trend Factor <br> (4) \# |
| 2013 | 1.0316 | 5.9167 | 1.2021 | 0.7075 |
| 2014 | 1.0316 | 4.9167 | 1.1653 | 0.7501 |
| 2015 | 1.0316 | 3.9167 | 1.1296 | 0.7953 |
| 2016 | 1.0316 | 2.9167 | 1.0950 | 0.8432 |

## Trended Loss Ratio

| Policy <br> Year | Actual <br> Loss Ratio <br> $(5)$ | Combined <br> Trend Factor <br> $(6)=(3)^{\star}(4)$ | Trended <br> Loss Ratio <br> $(7)=(5)^{\star}(6)$ |
| :---: | :---: | :---: | :---: |
| 2013 | 0.3169 | 0.8505 | 0.2695 |
| 2014 | 0.2668 | 0.8741 | 0.2332 |
| 2015 | 0.2797 | 0.8984 | 0.2513 |
| 2016 | 0.2249 | 0.9233 | 0.2077 |
| Average |  |  | 0.2404 |

\# See Page 24 for column (4).

## EXHIBIT VII - 2

DETERMINATION OF TREND
MEDICAL

Policy Year
Actual Loss Ratio Normalized Frequency Severity Loss Ratio

|  | $\mathbf{2 0 1 0}$ | $\mathbf{2 0 1 1}$ | $\mathbf{2 0 1 2}$ | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0.5214 | 0.4891 | 0.4658 | 0.5402 | 0.4680 | 0.5752 | 0.5285 |
|  | 0.6862 | 0.6426 | 0.5763 | 0.6040 | 0.5185 | 0.5445 | 0.4614 |
|  | 0.7598 | 0.7611 | 0.8082 | 0.8943 | 0.9027 | 1.0565 | 1.1454 |
| $\mathbf{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| $\mathbf{y}$ | 0.7598 | 0.7611 | 0.8082 | 0.8943 | 0.9027 | 1.0565 | 1.1454 |

7 Point Exponential Regression: $y=0.672061$ * $1.073959 \wedge x$
Selected Annual Trend =
7.4\%

| PolicyYear | Trend Period |  |  | Frequency |
| :---: | :---: | :---: | :---: | :---: |
|  | Annual | \# Years | Severity |  |
|  | Trend Factor | to 12/1/19 | Trend Factor | Trend Factor |
|  | (1) | (2) | $(3)=(1)^{\wedge}(2)$ | (4) \# |
| 2013 | 1.0740 | 5.9167 | 1.5253 | 0.7075 |
| 2014 | 1.0740 | 4.9167 | 1.4202 | 0.7501 |
| 2015 | 1.0740 | 3.9167 | 1.3224 | 0.7953 |
| 2016 | 1.0740 | 2.9167 | 1.2314 | 0.8432 |

## Trended Loss Ratio

| Policy <br> Year | Actual <br> Loss Ratio <br> $(5)$ | Combined <br> Trend Factor <br> $(6)=(3)^{\star}(4)$ | Trended <br> Loss Ratio <br> $(7)=(5)^{\star}(6)$ |
| :---: | :---: | :---: | :---: |
| 2013 | 0.5402 | 1.0791 | 0.5829 |
| 2014 | 0.4680 | 1.0653 | 0.4986 |
| 2015 | 0.5752 | 1.0517 | 0.6049 |
| 2016 | 0.5285 | 1.0383 | 0.5487 |
| Average |  |  | 0.5588 |

\# See Page 24 for column (4).

## EXHIBIT VII - 3

## DETERMINATION OF TREND

## CLAIM FREQUENCY

Policy Year Frequency per \$1 million of Expected Losses


Selected Annual Trend (Average of -5.6\% and -5.7\%) =
-5.7\%

Policy
Year

2013
2014
2015
2016

Annual
Trend Factor
(1)
0.9432
0.9432
0.9432
0.9432
\# of Years to 12/1/19
(2)
5.9167
4.9167
3.9167
2.9167

Frequency
Trend Factor
(3) $=(1)^{\wedge}(2)$
0.7075
0.7501
0.7953
0.8432

## ACCUMULATED STANDARD EARNED PREMIUM

| Policy Year Valued | As of 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 475,901,634 | 475,901,634 | 1.0000 | to 1986 | 468,466,819 | 468,466,819 | 1.0000 |
| 1986 | 68,727,386 | 68,727,386 | 1.0000 | 1986 | 67,779,157 | 67,779,157 | 1.0000 |
| 1987 | 81,080,364 | 81,080,364 | 1.0000 | 1987 | 79,968,600 | 79,968,600 | 1.0000 |
| 1988 | 98,509,492 | 98,509,492 | 1.0000 | 1988 | 97,464,093 | 97,464,093 | 1.0000 |
| 1989 | 105,487,107 | 105,487,107 | 1.0000 | 1989 | 104,451,377 | 104,451,377 | 1.0000 |
| 1990 | 94,125,731 | 94,125,731 | 1.0000 | 1990 | 93,303,791 | 93,303,791 | 1.0000 |
| 1991 | 90,695,845 | 90,750,388 | 1.0006 | 1991 | 89,721,438 | 89,742,346 | 1.0002 |
| 1992 | 82,084,698 | 82,084,698 | 1.0000 | 1992 | 80,122,911 | 80,122,911 | 1.0000 |
| 1993 | 84,936,458 | 84,936,458 | 1.0000 | 1993 | 82,114,214 | 82,114,214 | 1.0000 |
| 1994 | 77,193,665 | 77,193,605 | 1.0000 | 1994 | 76,416,051 | 76,416,051 | 1.0000 |
| 1995 | 73,445,394 | 73,445,418 | 1.0000 | 1995 | 72,348,142 | 72,348,135 | 1.0000 |
| 1996 | 77,188,731 | 77,188,734 | 1.0000 | 1996 | 76,274,362 | 76,274,335 | 1.0000 |
| 1997 | 80,784,678 | 80,784,703 | 1.0000 | 1997 | 78,200,634 | 78,200,605 | 1.0000 |
| 1998 | 84,068,560 | 84,068,572 | 1.0000 | 1998 | 79,724,223 | 79,724,205 | 1.0000 |
| 1999 | 80,572,172 | 80,572,143 | 1.0000 | 1999 | 75,185,175 | 75,185,189 | 1.0000 |
| 2000 | 85,738,581 | 85,738,501 | 1.0000 | 2000 | 83,345,879 | 83,345,864 | 1.0000 |
| 2001 | 88,449,374 | 88,449,339 | 1.0000 | 2001 | 86,070,048 | 86,076,901 | 1.0001 |
| 2002 | 113,699,746 | 113,717,630 | 1.0002 | 2002 | 109,405,067 | 109,404,476 | 1.0000 |
| 2003 | 129,655,791 | 129,655,762 | 1.0000 | 2003 | 125,136,672 | 125,137,871 | 1.0000 |
| 2004 | 149,122,206 | 149,121,079 | 1.0000 | 2004 | 149,109,516 | 149,109,989 | 1.0000 |
| 2005 | 183,000,631 | 182,998,946 | 1.0000 | 2005 | 183,005,048 | 183,008,751 | 1.0000 |
| 2006 | 202,487,230 | 202,495,026 | 1.0000 | 2006 | 202,539,583 | 202,546,825 | 1.0000 |
| 2007 | 195,753,446 | 195,750,621 | 1.0000 | 2007 | 195,750,621 | 195,755,664 | 1.0000 |
| 2008 | 148,482,656 | 148,479,227 | 1.0000 | 2008 | 148,479,227 | 148,485,351 | 1.0000 |
| 2009 | 116,318,345 | 116,311,214 | 0.9999 | 2009 | 116,243,401 | 116,921,404 | 1.0058 |
| 2010 | 104,350,998 | 104,476,537 | 1.0012 | 2010 | 104,825,699 | 105,036,158 | 1.0020 |
| 2011 | 105,111,781 | 105,072,860 | 0.9996 | 2011 | 105,308,058 | 105,077,476 | 0.9978 |
| 2012 | 113,287,818 | 113,468,957 | 1.0016 | 2012 | 113,754,808 | 114,108,833 | 1.0031 |
| 2013 | 69,137,130 | 132,377,593 | 1.9147 | 2013 | 132,809,505 | 133,729,149 | 1.0069 |
| 2014 |  | 76,798,021 |  | 2014 | 76,795,636 | 144,662,700 | 1.8837 |
|  |  |  |  | 2015 |  | 78,262,291 |  |
| Policy Year Valued | As of 12/31/15 | As of 12/31/16 | Ratio to Prior Year | Policy Year Valued | As of 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 468,466,819 | 468,466,819 | 1.0000 | to 1987 | 536,109,662 | 536,109,665 | 1.0000 |
| 1986 | 67,779,157 | 67,779,157 | 1.0000 | 1987 | 79,961,187 | 79,961,187 | 1.0000 |
| 1987 | 79,968,600 | 79,968,600 | 1.0000 | 1988 | 97,458,841 | 97,458,841 | 1.0000 |
| 1988 | 97,464,093 | 97,464,093 | 1.0000 | 1989 | 104,442,681 | 104,442,681 | 1.0000 |
| 1989 | 104,451,377 | 104,451,377 | 1.0000 | 1990 | 92,833,254 | 92,833,140 | 1.0000 |
| 1990 | 93,303,791 | 93,303,791 | 1.0000 | 1991 | 89,503,446 | 89,533,308 | 1.0003 |
| 1991 | 89,742,346 | 89,760,280 | 1.0002 | 1992 | 79,863,505 | 79,863,507 | 1.0000 |
| 1992 | 80,122,911 | 80,122,978 | 1.0000 | 1993 | 81,892,828 | 81,895,850 | 1.0000 |
| 1993 | 82,114,214 | 82,114,214 | 1.0000 | 1994 | 76,348,708 | 76,337,668 | 0.9999 |
| 1994 | 76,416,051 | 76,427,091 | 1.0001 | 1995 | 72,331,061 | 72,331,061 | 1.0000 |
| 1995 | 72,348,135 | 72,348,135 | 1.0000 | 1996 | 76,262,498 | 76,268,713 | 1.0001 |
| 1996 | 76,274,335 | 76,274,324 | 1.0000 | 1997 | 78,155,739 | 78,161,683 | 1.0001 |
| 1997 | 78,200,605 | 78,200,600 | 1.0000 | 1998 | 79,678,959 | 79,684,328 | 1.0001 |
| 1998 | 79,724,205 | 79,724,209 | 1.0000 | 1999 | 75,115,489 | 75,115,489 | 1.0000 |
| 1999 | 75,185,189 | 75,185,172 | 1.0000 | 2000 | 83,259,711 | 83,259,711 | 1.0000 |
| 2000 | 83,345,864 | 83,345,862 | 1.0000 | 2001 | 85,779,747 | 85,779,747 | 1.0000 |
| 2001 | 86,076,901 | 86,077,193 | 1.0000 | 2002 | 109,168,747 | 109,168,747 | 1.0000 |
| 2002 | 109,404,476 | 109,404,483 | 1.0000 | 2003 | 124,793,466 | 124,793,465 | 1.0000 |
| 2003 | 125,018,558 | 125,018,538 | 1.0000 | 2004 | 148,554,368 | 148,555,560 | 1.0000 |
| 2004 | 148,955,384 | 148,955,360 | 1.0000 | 2005 | 180,996,846 | 180,998,505 | 1.0000 |
| 2005 | 182,913,814 | 182,913,651 | 1.0000 | 2006 | 200,294,501 | 200,297,431 | 1.0000 |
| 2006 | 201,885,642 | 201,885,776 | 1.0000 | 2007 | 194,790,893 | 194,794,662 | 1.0000 |
| 2007 | 195,212,354 | 195,208,978 | 1.0000 | 2008 | 146,468,684 | 146,412,868 | 0.9996 |
| 2008 | 146,747,784 | 146,749,043 | 1.0000 | 2009 | 115,154,574 | 115,152,826 | 1.0000 |
| 2009 | 115,390,383 | 115,390,397 | 1.0000 | 2010 | 103,616,070 | 103,608,768 | 0.9999 |
| 2010 | 103,888,036 | 103,880,240 | 0.9999 | 2011 | 103,518,238 | 103,516,108 | 1.0000 |
| 2011 | 104,205,228 | 104,234,361 | 1.0003 | 2012 | 112,599,318 | 112,746,890 | 1.0013 |
| 2012 | 113,141,644 | 113,154,902 | 1.0001 | 2013 | 131,754,924 | 131,778,597 | 1.0002 |
| 2013 | 132,898,313 | 132,678,126 | 0.9983 | 2014 | 144,781,773 | 144,634,010 | 0.9990 |
| 2014 | 143,989,548 | 145,744,138 | 1.0122 | 2015 | 143,294,314 | 144,196,548 | 1.0063 |
| 2015 | 78,250,963 | 145,154,433 | 1.8550 | 2016 | 86,269,333 | 162,955,874 | 1.8889 |
| 2016 |  | 86,976,681 |  | 2017 |  | 92,643,011 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be
independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| Policy Year Valued | As of 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 256,189,038 | 256,118,239 | 0.9997 | to 1986 | 252,982,379 | 252,786,609 | 0.9992 |
| 1986 | 34,299,624 | 34,371,308 | 1.0021 | 1986 | 33,428,843 | 33,424,768 | 0.9999 |
| 1987 | 43,529,832 | 43,583,006 | 1.0012 | 1987 | 43,370,380 | 43,469,662 | 1.0023 |
| 1988 | 42,758,179 | 42,682,366 | 0.9982 | 1988 | 42,470,843 | 42,573,728 | 1.0024 |
| 1989 | 49,983,523 | 50,063,938 | 1.0016 | 1989 | 49,850,745 | 49,944,604 | 1.0019 |
| 1990 | 50,134,266 | 50,145,689 | 1.0002 | 1990 | 49,583,034 | 50,310,866 | 1.0147 |
| 1991 | 48,162,028 | 48,097,810 | 0.9987 | 1991 | 47,748,529 | 47,851,115 | 1.0021 |
| 1992 | 43,969,799 | 43,992,111 | 1.0005 | 1992 | 43,600,343 | 43,889,269 | 1.0066 |
| 1993 | 52,319,432 | 52,550,783 | 1.0044 | 1993 | 50,556,888 | 50,799,614 | 1.0048 |
| 1994 | 40,880,505 | 40,175,261 | 0.9827 | 1994 | 39,201,414 | 39,557,572 | 1.0091 |
| 1995 | 43,853,627 | 43,697,909 | 0.9964 | 1995 | 43,379,418 | 43,403,286 | 1.0006 |
| 1996 | 58,127,031 | 57,567,482 | 0.9904 | 1996 | 56,841,768 | 57,439,605 | 1.0105 |
| 1997 | 54,213,272 | 54,199,661 | 0.9997 | 1997 | 52,737,184 | 52,684,263 | 0.9990 |
| 1998 | 47,976,269 | 47,945,052 | 0.9993 | 1998 | 44,804,083 | 44,876,878 | 1.0016 |
| 1999 | 55,570,400 | 54,861,396 | 0.9872 | 1999 | 52,134,094 | 52,591,610 | 1.0088 |
| 2000 | 78,903,934 | 78,566,462 | 0.9957 | 2000 | 72,991,098 | 72,584,847 | 0.9944 |
| 2001 | 60,044,468 | 60,066,692 | 1.0004 | 2001 | 59,344,613 | 60,092,707 | 1.0126 |
| 2002 | 70,783,837 | 71,155,817 | 1.0053 | 2002 | 67,362,078 | 67,977,593 | 1.0091 |
| 2003 | 80,629,196 | 82,037,199 | 1.0175 | 2003 | 78,206,359 | 78,671,796 | 1.0060 |
| 2004 | 81,143,076 | 82,156,474 | 1.0125 | 2004 | 82,155,938 | 83,803,884 | 1.0201 |
| 2005 | 86,111,838 | 87,656,971 | 1.0179 | 2005 | 87,656,829 | 88,917,576 | 1.0144 |
| 2006 | 89,434,715 | 92,776,236 | 1.0374 | 2006 | 92,798,959 | 93,672,537 | 1.0094 |
| 2007 | 87,692,168 | 90,129,714 | 1.0278 | 2007 | 90,144,087 | 91,969,381 | 1.0202 |
| 2008 | 80,517,736 | 85,367,453 | 1.0602 | 2008 | 85,366,471 | 87,245,308 | 1.0220 |
| 2009 | 85,297,424 | 93,421,750 | 1.0952 | 2009 | 93,421,633 | 97,782,061 | 1.0467 |
| 2010 | 84,941,276 | 90,427,528 | 1.0646 | 2010 | 91,001,991 | 94,393,761 | 1.0373 |
| 2011 | 78,793,163 | 85,961,098 | 1.0910 | 2011 | 86,059,801 | 89,934,149 | 1.0450 |
| 2012 | 53,933,980 | 68,604,093 | 1.2720 | 2012 | 68,420,263 | 77,028,190 | 1.1258 |
| 2013 | 19,448,625 | 56,505,622 | 2.9054 | 2013 | 56,687,154 | 72,748,299 | 1.2833 |
| 2014 |  | 20,016,368 |  | 2014 | 20,061,326 | 52,993,488 | 2.6416 |
|  |  |  |  | 2015 |  | 22,498,734 |  |
| Policy Year Valued | As of 12/31/15 | As of 12/31/16 | Ratio to Prior Year | Policy Year Valued | As of 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 252,781,316 | 253,062,296 | 1.0011 | to 1987 | 286,294,974 | 286,832,692 | 1.0019 |
| 1986 | 33,425,188 | 33,396,526 | 0.9991 | 1987 | 43,453,953 | 43,614,685 | 1.0037 |
| 1987 | 43,470,681 | 43,528,878 | 1.0013 | 1988 | 42,560,803 | 42,586,413 | 1.0006 |
| 1988 | 42,574,900 | 42,562,188 | 0.9997 | 1989 | 50,024,415 | 50,066,501 | 1.0008 |
| 1989 | 49,946,076 | 50,025,712 | 1.0016 | 1990 | 50,077,629 | 50,333,166 | 1.0051 |
| 1990 | 50,309,887 | 50,407,898 | 1.0019 | 1991 | 47,729,080 | 47,660,816 | 0.9986 |
| 1991 | 47,851,324 | 47,746,629 | 0.9978 | 1992 | 43,944,833 | 43,922,806 | 0.9995 |
| 1992 | 43,888,425 | 43,977,290 | 1.0020 | 1993 | 50,717,088 | 50,866,322 | 1.0029 |
| 1993 | 50,799,976 | 50,758,998 | 0.9992 | 1994 | 39,478,217 | 39,577,779 | 1.0025 |
| 1994 | 39,557,466 | 39,195,135 | 0.9908 | 1995 | 43,264,600 | 42,844,983 | 0.9903 |
| 1995 | 43,402,472 | 43,300,585 | 0.9977 | 1996 | 57,322,434 | 57,184,271 | 0.9976 |
| 1996 | 57,438,609 | 57,374,731 | 0.9989 | 1997 | 52,537,431 | 53,005,108 | 1.0089 |
| 1997 | 52,684,726 | 52,646,802 | 0.9993 | 1998 | 45,628,602 | 45,700,501 | 1.0016 |
| 1998 | 44,877,511 | 45,366,539 | 1.0109 | 1999 | 52,448,272 | 52,895,935 | 1.0085 |
| 1999 | 52,591,596 | 52,567,878 | 0.9995 | 2000 | 73,167,928 | 73,942,798 | 1.0106 |
| 2000 | 72,585,232 | 73,186,210 | 1.0083 | 2001 | 60,926,587 | 61,736,189 | 1.0133 |
| 2001 | 60,091,141 | 61,061,329 | 1.0161 | 2002 | 68,811,988 | 69,072,676 | 1.0038 |
| 2002 | 67,979,299 | 68,861,770 | 1.0130 | 2003 | 78,818,171 | 79,470,464 | 1.0083 |
| 2003 | 78,624,733 | 79,330,418 | 1.0090 | 2004 | 85,726,584 | 87,782,298 | 1.0240 |
| 2004 | 83,802,065 | 85,805,278 | 1.0239 | 2005 | 87,580,565 | 86,733,773 | 0.9903 |
| 2005 | 88,915,187 | 90,132,900 | 1.0137 | 2006 | 94,778,474 | 94,747,956 | 0.9997 |
| 2006 | 93,574,358 | 95,378,184 | 1.0193 | 2007 | 93,846,822 | 94,256,133 | 1.0044 |
| 2007 | 91,608,852 | 93,884,660 | 1.0248 | 2008 | 89,148,193 | 90,355,445 | 1.0135 |
| 2008 | 85,984,555 | 89,186,115 | 1.0372 | 2009 | 96,639,909 | 99,700,117 | 1.0317 |
| 2009 | 94,863,581 | 96,787,873 | 1.0203 | 2010 | 98,099,214 | 102,746,133 | 1.0474 |
| 2010 | 93,734,590 | 98,157,789 | 1.0472 | 2011 | 91,902,071 | 94,319,799 | 1.0263 |
| 2011 | 89,485,311 | 92,107,412 | 1.0293 | 2012 | 81,355,749 | 83,598,996 | 1.0276 |
| 2012 | 76,605,767 | 81,958,937 | 1.0699 | 2013 | 81,919,741 | 87,594,112 | 1.0693 |
| 2013 | 72,278,819 | 82,259,416 | 1.1381 | 2014 | 63,262,542 | 69,099,174 | 1.0923 |
| 2014 | 52,738,868 | 64,478,807 | 1.2226 | 2015 | 64,674,041 | 80,190,984 | 1.2399 |
| 2015 | 22,498,696 | 65,432,301 | 2.9083 | 2016 | 23,871,683 | 62,763,110 | 2.6292 |
| 2016 |  | 24,134,056 |  | 2017 |  | 25,931,388 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be
independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

* Losses limited on a per-claim basis, with the actual limitation varying by policy year as described in Exhibit 1a.


## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

INDEMNITY INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| Policy Year Valued | As of <br> 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 188,471,210 | 188,225,715 | 0.9987 | to 1986 | 185,666,414 | 185,661,466 | 1.0000 |
| 1986 | 23,719,152 | 23,731,443 | 1.0005 | 1986 | 22,822,611 | 22,804,517 | 0.9992 |
| 1987 | 28,468,418 | 28,459,992 | 0.9997 | 1987 | 28,354,018 | 28,324,649 | 0.9990 |
| 1988 | 27,743,455 | 27,716,672 | 0.9990 | 1988 | 27,599,782 | 27,647,865 | 1.0017 |
| 1989 | 30,874,453 | 30,808,006 | 0.9978 | 1989 | 30,696,730 | 30,550,450 | 0.9952 |
| 1990 | 31,471,721 | 31,433,118 | 0.9988 | 1990 | 31,075,982 | 31,569,383 | 1.0159 |
| 1991 | 28,913,713 | 29,162,114 | 1.0086 | 1991 | 28,963,153 | 28,987,206 | 1.0008 |
| 1992 | 24,775,344 | 24,732,326 | 0.9983 | 1992 | 24,532,363 | 24,508,517 | 0.9990 |
| 1993 | 30,533,912 | 30,500,301 | 0.9989 | 1993 | 28,788,411 | 28,876,324 | 1.0031 |
| 1994 | 22,213,563 | 21,954,846 | 0.9884 | 1994 | 21,103,054 | 21,359,499 | 1.0122 |
| 1995 | 23,171,149 | 23,155,445 | 0.9993 | 1995 | 22,969,252 | 22,938,896 | 0.9987 |
| 1996 | 28,997,313 | 28,886,002 | 0.9962 | 1996 | 28,522,961 | 28,562,992 | 1.0014 |
| 1997 | 29,211,676 | 29,156,759 | 0.9981 | 1997 | 28,474,797 | 28,372,816 | 0.9964 |
| 1998 | 25,000,273 | 24,993,074 | 0.9997 | 1998 | 23,414,256 | 23,422,588 | 1.0004 |
| 1999 | 28,301,331 | 28,235,223 | 0.9977 | 1999 | 26,688,557 | 26,639,138 | 0.9981 |
| 2000 | 38,518,744 | 38,638,813 | 1.0031 | 2000 | 35,694,773 | 35,552,783 | 0.9960 |
| 2001 | 30,657,742 | 30,718,747 | 1.0020 | 2001 | 30,363,426 | 30,369,521 | 1.0002 |
| 2002 | 34,296,243 | 34,173,913 | 0.9964 | 2002 | 32,309,279 | 32,133,935 | 0.9946 |
| 2003 | 38,027,887 | 38,929,671 | 1.0237 | 2003 | 37,133,158 | 37,123,028 | 0.9997 |
| 2004 | 37,430,244 | 37,740,365 | 1.0083 | 2004 | 37,740,365 | 37,806,165 | 1.0017 |
| 2005 | 40,221,330 | 40,255,841 | 1.0009 | 2005 | 40,255,841 | 40,290,770 | 1.0009 |
| 2006 | 41,841,377 | 42,256,428 | 1.0099 | 2006 | 42,278,390 | 42,818,797 | 1.0128 |
| 2007 | 39,380,503 | 40,734,164 | 1.0344 | 2007 | 40,749,254 | 41,165,188 | 1.0102 |
| 2008 | 34,963,281 | 36,114,274 | 1.0329 | 2008 | 36,114,274 | 36,303,272 | 1.0052 |
| 2009 | 38,469,721 | 40,901,810 | 1.0632 | 2009 | 40,901,810 | 42,285,249 | 1.0338 |
| 2010 | 34,184,616 | 36,160,415 | 1.0578 | 2010 | 36,430,866 | 35,954,385 | 0.9869 |
| 2011 | 30,796,523 | 33,862,115 | 1.0995 | 2011 | 33,908,936 | 35,357,045 | 1.0427 |
| 2012 | 21,726,739 | 28,739,771 | 1.3228 | 2012 | 28,680,932 | 31,753,575 | 1.1071 |
| 2013 | 7,942,019 | 23,969,249 | 3.0180 | 2013 | 24,022,747 | 30,863,522 | 1.2848 |
| 2014 |  | 8,651,691 |  | 2014 | 8,696,649 | 20,328,423 | 2.3375 |
|  |  |  |  | 2015 |  | 6,429,097 |  |
| Policy Year Valued | As of 12/31/15 | As of 12/31/16 | Ratio to Prior Year | Policy Year Valued | As of 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 185,661,466 | 185,787,018 | 1.0007 | to 1987 | 208,459,253 | 208,704,910 | 1.0012 |
| 1986 | 22,804,517 | 22,768,790 | 0.9984 | 1987 | 28,271,958 | 28,487,853 | 1.0076 |
| 1987 | 28,324,649 | 28,297,166 | 0.9990 | 1988 | 27,618,082 | 27,628,928 | 1.0004 |
| 1988 | 27,647,865 | 27,619,195 | 0.9990 | 1989 | 30,530,138 | 30,431,956 | 0.9968 |
| 1989 | 30,550,450 | 30,531,494 | 0.9994 | 1990 | 31,309,490 | 31,397,888 | 1.0028 |
| 1990 | 31,569,383 | 31,518,213 | 0.9984 | 1991 | 28,883,998 | 28,813,881 | 0.9976 |
| 1991 | 28,987,206 | 28,888,316 | 0.9966 | 1992 | 24,432,412 | 24,391,818 | 0.9983 |
| 1992 | 24,508,517 | 24,446,531 | 0.9975 | 1993 | 28,824,270 | 28,847,492 | 1.0008 |
| 1993 | 28,876,324 | 28,847,903 | 0.9990 | 1994 | 21,317,620 | 21,356,235 | 1.0018 |
| 1994 | 21,359,499 | 21,249,259 | 0.9948 | 1995 | 22,711,304 | 22,688,700 | 0.9990 |
| 1995 | 22,938,896 | 22,741,112 | 0.9914 | 1996 | 28,548,446 | 28,521,380 | 0.9991 |
| 1996 | 28,562,992 | 28,576,326 | 1.0005 | 1997 | 28,187,062 | 28,164,423 | 0.9992 |
| 1997 | 28,372,816 | 28,304,369 | 0.9976 | 1998 | 23,475,978 | 23,480,072 | 1.0002 |
| 1998 | 23,422,588 | 23,440,933 | 1.0008 | 1999 | 26,739,518 | 26,824,169 | 1.0032 |
| 1999 | 26,639,138 | 26,820,649 | 1.0068 | 2000 | 35,488,924 | 35,400,841 | 0.9975 |
| 2000 | 35,552,783 | 35,500,812 | 0.9985 | 2001 | 30,257,720 | 30,256,844 | 1.0000 |
| 2001 | 30,369,521 | 30,345,622 | 0.9992 | 2002 | 32,071,813 | 32,016,402 | 0.9983 |
| 2002 | 32,133,935 | 32,112,304 | 0.9993 | 2003 | 36,762,053 | 36,654,427 | 0.9971 |
| 2003 | 37,107,735 | 37,106,238 | 1.0000 | 2004 | 37,973,977 | 37,892,932 | 0.9979 |
| 2004 | 37,806,165 | 38,005,510 | 1.0053 | 2005 | 38,787,148 | 39,023,006 | 1.0061 |
| 2005 | 40,290,770 | 40,175,232 | 0.9971 | 2006 | 42,833,947 | 42,953,796 | 1.0028 |
| 2006 | 42,756,244 | 43,108,481 | 1.0082 | 2007 | 41,190,112 | 40,977,735 | 0.9948 |
| 2007 | 40,933,539 | 41,201,598 | 1.0065 | 2008 | 35,835,110 | 36,043,140 | 1.0058 |
| 2008 | 35,656,650 | 35,853,736 | 1.0055 | 2009 | 41,256,214 | 41,748,513 | 1.0119 |
| 2009 | 40,760,267 | 41,333,095 | 1.0141 | 2010 | 36,583,220 | 37,638,703 | 1.0289 |
| 2010 | 35,715,393 | 36,584,154 | 1.0243 | 2011 | 36,058,873 | 36,374,138 | 1.0087 |
| 2011 | 35,249,448 | 36,131,652 | 1.0250 | 2012 | 34,185,032 | 35,148,125 | 1.0282 |
| 2012 | 31,635,644 | 34,438,674 | 1.0886 | 2013 | 34,627,603 | 36,079,815 | 1.0419 |
| 2013 | 30,784,324 | 34,655,861 | 1.1258 | 2014 | 25,346,090 | 27,889,963 | 1.1004 |
| 2014 | 20,274,467 | 25,888,704 | 1.2769 | 2015 | 19,441,983 | 28,161,664 | 1.4485 |
| 2015 | 6,429,097 | 19,645,957 | 3.0558 | 2016 | 7,670,022 | 19,650,544 | 2.5620 |
| 2016 |  | 7,740,524 |  | 2017 |  | 6,979,377 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be
independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

* Losses limited on a per-claim basis, with the actual limitation varying by policy year as described in Exhibit 1a.

Losses are expressed on a post-HB175, pre-HB373 basis.

## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

## MEDICAL INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| Policy Year Valued | As of 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 67,717,828 | 67,892,524 | 1.0026 | to 1986 | 67,315,965 | 67,125,143 | 0.9972 |
| 1986 | 10,580,472 | 10,639,865 | 1.0056 | 1986 | 10,606,232 | 10,620,251 | 1.0013 |
| 1987 | 15,061,414 | 15,123,014 | 1.0041 | 1987 | 15,016,362 | 15,145,013 | 1.0086 |
| 1988 | 15,014,724 | 14,965,694 | 0.9967 | 1988 | 14,871,061 | 14,925,863 | 1.0037 |
| 1989 | 19,109,070 | 19,255,932 | 1.0077 | 1989 | 19,154,015 | 19,394,154 | 1.0125 |
| 1990 | 18,662,545 | 18,712,571 | 1.0027 | 1990 | 18,507,052 | 18,741,483 | 1.0127 |
| 1991 | 19,248,315 | 18,935,696 | 0.9838 | 1991 | 18,785,376 | 18,863,909 | 1.0042 |
| 1992 | 19,194,455 | 19,259,785 | 1.0034 | 1992 | 19,067,980 | 19,380,752 | 1.0164 |
| 1993 | 21,785,520 | 22,050,482 | 1.0122 | 1993 | 21,768,477 | 21,923,290 | 1.0071 |
| 1994 | 18,666,942 | 18,220,415 | 0.9761 | 1994 | 18,098,360 | 18,198,073 | 1.0055 |
| 1995 | 20,682,478 | 20,542,464 | 0.9932 | 1995 | 20,410,166 | 20,464,390 | 1.0027 |
| 1996 | 29,129,718 | 28,681,480 | 0.9846 | 1996 | 28,318,807 | 28,876,613 | 1.0197 |
| 1997 | 25,001,596 | 25,042,902 | 1.0017 | 1997 | 24,262,387 | 24,311,447 | 1.0020 |
| 1998 | 22,975,996 | 22,951,978 | 0.9990 | 1998 | 21,389,827 | 21,454,290 | 1.0030 |
| 1999 | 27,269,069 | 26,626,173 | 0.9764 | 1999 | 25,445,537 | 25,952,472 | 1.0199 |
| 2000 | 40,385,190 | 39,927,649 | 0.9887 | 2000 | 37,296,325 | 37,032,064 | 0.9929 |
| 2001 | 29,386,726 | 29,347,945 | 0.9987 | 2001 | 28,981,187 | 29,723,186 | 1.0256 |
| 2002 | 36,487,594 | 36,981,904 | 1.0135 | 2002 | 35,052,799 | 35,843,658 | 1.0226 |
| 2003 | 42,601,309 | 43,107,528 | 1.0119 | 2003 | 41,073,201 | 41,548,768 | 1.0116 |
| 2004 | 43,712,832 | 44,416,109 | 1.0161 | 2004 | 44,415,573 | 45,997,719 | 1.0356 |
| 2005 | 45,890,508 | 47,401,130 | 1.0329 | 2005 | 47,400,988 | 48,626,806 | 1.0259 |
| 2006 | 47,593,338 | 50,519,808 | 1.0615 | 2006 | 50,520,569 | 50,853,740 | 1.0066 |
| 2007 | 48,311,665 | 49,395,550 | 1.0224 | 2007 | 49,394,833 | 50,804,193 | 1.0285 |
| 2008 | 45,554,455 | 49,253,179 | 1.0812 | 2008 | 49,252,197 | 50,942,036 | 1.0343 |
| 2009 | 46,827,703 | 52,519,940 | 1.1216 | 2009 | 52,519,823 | 55,496,812 | 1.0567 |
| 2010 | 50,756,660 | 54,267,113 | 1.0692 | 2010 | 54,571,125 | 58,439,376 | 1.0709 |
| 2011 | 47,996,640 | 52,098,983 | 1.0855 | 2011 | 52,150,865 | 54,577,104 | 1.0465 |
| 2012 | 32,207,241 | 39,864,322 | 1.2377 | 2012 | 39,739,331 | 45,274,615 | 1.1393 |
| 2013 | 11,506,606 | 32,536,373 | 2.8276 | 2013 | 32,664,407 | 41,884,777 | 1.2823 |
| 2014 |  | 11,364,677 |  | 2014 | 11,364,677 | 32,665,065 | 2.8743 |
|  |  |  |  | 2015 |  | 16,069,637 |  |
| Policy Year Valued | As of 12/31/15 | $\begin{gathered} \text { As of } \\ 12 / 31 / 16 \end{gathered}$ | Ratio to Prior Year | Policy Year Valued | $\begin{gathered} \text { As of } \\ 12 / 31 / 16 \end{gathered}$ | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 67,119,850 | 67,275,278 | 1.0023 | to 1987 | 77,835,721 | 78,127,782 | 1.0038 |
| 1986 | 10,620,671 | 10,627,736 | 1.0007 | 1987 | 15,181,995 | 15,126,832 | 0.9964 |
| 1987 | 15,146,032 | 15,231,712 | 1.0057 | 1988 | 14,942,721 | 14,957,485 | 1.0010 |
| 1988 | 14,927,035 | 14,942,993 | 1.0011 | 1989 | 19,494,277 | 19,634,545 | 1.0072 |
| 1989 | 19,395,626 | 19,494,218 | 1.0051 | 1990 | 18,768,139 | 18,935,278 | 1.0089 |
| 1990 | 18,740,504 | 18,889,685 | 1.0080 | 1991 | 18,845,082 | 18,846,935 | 1.0001 |
| 1991 | 18,864,118 | 18,858,313 | 0.9997 | 1992 | 19,512,421 | 19,530,988 | 1.0010 |
| 1992 | 19,379,908 | 19,530,759 | 1.0078 | 1993 | 21,892,818 | 22,018,830 | 1.0058 |
| 1993 | 21,923,652 | 21,911,095 | 0.9994 | 1994 | 18,160,597 | 18,221,544 | 1.0034 |
| 1994 | 18,197,967 | 17,945,876 | 0.9861 | 1995 | 20,553,296 | 20,156,283 | 0.9807 |
| 1995 | 20,463,576 | 20,559,473 | 1.0047 | 1996 | 28,773,988 | 28,662,891 | 0.9961 |
| 1996 | 28,875,617 | 28,798,405 | 0.9973 | 1997 | 24,350,369 | 24,840,685 | 1.0201 |
| 1997 | 24,311,910 | 24,342,433 | 1.0013 | 1998 | 22,152,624 | 22,220,429 | 1.0031 |
| 1998 | 21,454,923 | 21,925,606 | 1.0219 | 1999 | 25,708,754 | 26,071,766 | 1.0141 |
| 1999 | 25,952,458 | 25,747,229 | 0.9921 | 2000 | 37,679,004 | 38,541,957 | 1.0229 |
| 2000 | 37,032,449 | 37,685,398 | 1.0176 | 2001 | 30,668,867 | 31,479,345 | 1.0264 |
| 2001 | 29,721,620 | 30,715,707 | 1.0334 | 2002 | 36,740,175 | 37,056,274 | 1.0086 |
| 2002 | 35,845,364 | 36,749,466 | 1.0252 | 2003 | 42,056,118 | 42,816,037 | 1.0181 |
| 2003 | 41,516,998 | 42,224,180 | 1.0170 | 2004 | 47,752,607 | 49,889,366 | 1.0447 |
| 2004 | 45,995,900 | 47,799,768 | 1.0392 | 2005 | 48,793,417 | 47,710,767 | 0.9778 |
| 2005 | 48,624,417 | 49,957,668 | 1.0274 | 2006 | 51,944,527 | 51,794,160 | 0.9971 |
| 2006 | 50,818,114 | 52,269,703 | 1.0286 | 2007 | 52,656,710 | 53,278,398 | 1.0118 |
| 2007 | 50,675,313 | 52,683,062 | 1.0396 | 2008 | 53,313,083 | 54,312,305 | 1.0187 |
| 2008 | 50,327,905 | 53,332,379 | 1.0597 | 2009 | 55,383,695 | 57,951,604 | 1.0464 |
| 2009 | 54,103,314 | 55,454,778 | 1.0250 | 2010 | 61,515,994 | 65,107,430 | 1.0584 |
| 2010 | 58,019,197 | 61,573,635 | 1.0613 | 2011 | 55,843,198 | 57,945,661 | 1.0376 |
| 2011 | 54,235,863 | 55,975,760 | 1.0321 | 2012 | 47,170,717 | 48,450,871 | 1.0271 |
| 2012 | 44,970,123 | 47,520,263 | 1.0567 | 2013 | 47,292,138 | 51,514,297 | 1.0893 |
| 2013 | 41,494,495 | 47,603,555 | 1.1472 | 2014 | 37,916,452 | 41,209,211 | 1.0868 |
| 2014 | 32,464,401 | 38,590,103 | 1.1887 | 2015 | 45,232,058 | 52,029,320 | 1.1503 |
| 2015 | 16,069,599 | 45,786,344 | 2.8493 | 2016 | 16,201,661 | 43,112,566 | 2.6610 |
| 2016 |  | 16,393,532 |  | 2017 |  | 18,952,011 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be
independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

* Losses limited on a per-claim basis, with the actual limitation varying by policy year as described in Exhibit 1a.

Losses are expressed on a post-HB175, pre-HB373 basis.

## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

INDEMNITY PAID LOSSES

| Policy Year Valued | As of 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 186,797,821 | 186,807,908 | 1.0001 | to 1986 | 184,212,008 | 184,355,444 | 1.0008 |
| 1986 | 23,341,514 | 23,384,626 | 1.0018 | 1986 | 22,465,939 | 22,507,283 | 1.0018 |
| 1987 | 28,028,893 | 28,070,004 | 1.0015 | 1987 | 27,963,355 | 27,988,133 | 1.0009 |
| 1988 | 27,479,631 | 27,484,018 | 1.0002 | 1988 | 27,370,173 | 27,500,382 | 1.0048 |
| 1989 | 30,556,809 | 30,554,742 | 0.9999 | 1989 | 30,428,044 | 30,329,053 | 0.9967 |
| 1990 | 30,857,942 | 30,924,152 | 1.0021 | 1990 | 30,561,931 | 30,650,587 | 1.0029 |
| 1991 | 28,070,280 | 28,627,393 | 1.0198 | 1991 | 28,418,432 | 28,540,991 | 1.0043 |
| 1992 | 24,741,848 | 24,703,005 | 0.9984 | 1992 | 24,504,713 | 24,431,937 | 0.9970 |
| 1993 | 29,693,075 | 29,713,191 | 1.0007 | 1993 | 27,993,556 | 28,143,085 | 1.0053 |
| 1994 | 20,502,297 | 21,295,913 | 1.0387 | 1994 | 20,444,121 | 20,516,782 | 1.0036 |
| 1995 | 22,640,560 | 22,652,529 | 1.0005 | 1995 | 22,466,336 | 22,503,152 | 1.0016 |
| 1996 | 28,160,639 | 28,258,473 | 1.0035 | 1996 | 27,894,881 | 27,987,962 | 1.0033 |
| 1997 | 27,959,965 | 28,196,116 | 1.0084 | 1997 | 27,604,978 | 27,696,767 | 1.0033 |
| 1998 | 24,188,898 | 24,433,673 | 1.0101 | 1998 | 22,831,079 | 23,023,730 | 1.0084 |
| 1999 | 27,854,682 | 27,933,530 | 1.0028 | 1999 | 26,385,285 | 26,420,381 | 1.0013 |
| 2000 | 36,164,225 | 36,478,505 | 1.0087 | 2000 | 33,971,016 | 34,115,201 | 1.0042 |
| 2001 | 29,304,966 | 29,633,353 | 1.0112 | 2001 | 29,233,361 | 29,508,256 | 1.0094 |
| 2002 | 32,729,211 | 33,144,825 | 1.0127 | 2002 | 31,535,999 | 31,825,292 | 1.0092 |
| 2003 | 35,350,336 | 36,556,006 | 1.0341 | 2003 | 34,994,590 | 35,270,411 | 1.0079 |
| 2004 | 36,032,839 | 36,622,685 | 1.0164 | 2004 | 36,622,685 | 36,908,524 | 1.0078 |
| 2005 | 36,635,503 | 37,676,302 | 1.0284 | 2005 | 37,676,302 | 38,368,511 | 1.0184 |
| 2006 | 36,390,932 | 38,381,669 | 1.0547 | 2006 | 38,381,669 | 39,999,885 | 1.0422 |
| 2007 | 34,858,150 | 35,939,556 | 1.0310 | 2007 | 35,939,556 | 36,673,704 | 1.0204 |
| 2008 | 30,695,442 | 32,371,781 | 1.0546 | 2008 | 32,371,781 | 33,686,822 | 1.0406 |
| 2009 | 28,808,903 | 32,294,754 | 1.1210 | 2009 | 32,294,754 | 35,215,622 | 1.0904 |
| 2010 | 24,233,150 | 29,042,891 | 1.1985 | 2010 | 29,280,846 | 31,823,910 | 1.0869 |
| 2011 | 18,901,504 | 26,353,987 | 1.3943 | 2011 | 26,393,267 | 30,605,243 | 1.1596 |
| 2012 | 7,817,826 | 15,943,220 | 2.0393 | 2012 | 15,905,822 | 23,010,466 | 1.4467 |
| 2013 | 1,703,766 | 10,013,413 | 5.8772 | 2013 | 10,030,773 | 18,317,143 | 1.8261 |
| 2014 |  | 1,462,937 |  | 2014 | 1,462,937 | 8,364,398 | 5.7175 |
|  |  |  |  | 2015 |  | 1,776,434 |  |
| Policy Year Valued | As of 12/31/15 | As of 12/31/16 | Ratio to Prior Year | Policy Year Valued | As of 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 184,355,444 | 184,560,116 | 1.0011 | to 1987 | 206,964,688 | 207,376,458 | 1.0020 |
| 1986 | 22,507,283 | 22,534,396 | 1.0012 | 1987 | 27,944,622 | 28,109,112 | 1.0059 |
| 1987 | 27,988,133 | 27,969,956 | 0.9994 | 1988 | 27,510,579 | 27,512,903 | 1.0001 |
| 1988 | 27,500,382 | 27,511,693 | 1.0004 | 1989 | 30,330,370 | 30,199,541 | 0.9957 |
| 1989 | 30,329,053 | 30,331,726 | 1.0001 | 1990 | 30,489,284 | 30,530,433 | 1.0013 |
| 1990 | 30,650,587 | 30,698,007 | 1.0015 | 1991 | 28,561,927 | 28,620,614 | 1.0021 |
| 1991 | 28,540,991 | 28,566,245 | 1.0009 | 1992 | 24,371,156 | 24,350,581 | 0.9992 |
| 1992 | 24,431,937 | 24,385,275 | 0.9981 | 1993 | 28,142,465 | 28,238,088 | 1.0034 |
| 1993 | 28,143,085 | 28,166,098 | 1.0008 | 1994 | 20,811,463 | 20,840,651 | 1.0014 |
| 1994 | 20,516,782 | 20,743,102 | 1.0110 | 1995 | 22,466,195 | 22,480,967 | 1.0007 |
| 1995 | 22,503,152 | 22,496,003 | 0.9997 | 1996 | 28,030,116 | 28,065,417 | 1.0013 |
| 1996 | 27,987,962 | 28,061,589 | 1.0026 | 1997 | 27,544,005 | 27,689,184 | 1.0053 |
| 1997 | 27,696,767 | 27,664,781 | 0.9988 | 1998 | 23,120,808 | 23,286,851 | 1.0072 |
| 1998 | 23,023,730 | 23,085,763 | 1.0027 | 1999 | 26,634,883 | 26,760,434 | 1.0047 |
| 1999 | 26,420,381 | 26,716,014 | 1.0112 | 2000 | 34,188,949 | 34,633,854 | 1.0130 |
| 2000 | 34,115,201 | 34,200,957 | 1.0025 | 2001 | 29,571,103 | 29,635,831 | 1.0022 |
| 2001 | 29,508,256 | 29,662,074 | 1.0052 | 2002 | 31,820,571 | 31,801,887 | 0.9994 |
| 2002 | 31,825,292 | 31,861,062 | 1.0011 | 2003 | 35,178,239 | 35,482,602 | 1.0087 |
| 2003 | 35,255,118 | 35,524,986 | 1.0077 | 2004 | 37,042,639 | 37,267,804 | 1.0061 |
| 2004 | 36,908,524 | 37,074,274 | 1.0045 | 2005 | 38,032,889 | 38,249,879 | 1.0057 |
| 2005 | 38,368,511 | 39,420,973 | 1.0274 | 2006 | 40,584,900 | 41,198,216 | 1.0151 |
| 2006 | 39,937,332 | 40,865,678 | 1.0232 | 2007 | 37,861,583 | 38,293,859 | 1.0114 |
| 2007 | 36,442,055 | 37,873,399 | 1.0393 | 2008 | 33,621,306 | 34,357,379 | 1.0219 |
| 2008 | 33,040,200 | 33,639,932 | 1.0182 | 2009 | 36,077,918 | 38,550,804 | 1.0685 |
| 2009 | 34,136,726 | 36,154,799 | 1.0591 | 2010 | 33,260,940 | 35,005,402 | 1.0524 |
| 2010 | 31,584,918 | 33,264,090 | 1.0532 | 2011 | 32,100,838 | 33,813,759 | 1.0534 |
| 2011 | 30,528,646 | 32,174,192 | 1.0539 | 2012 | 28,072,355 | 30,724,059 | 1.0945 |
| 2012 | 22,892,535 | 28,303,790 | 1.2364 | 2013 | 25,229,452 | 30,147,559 | 1.1949 |
| 2013 | 18,237,945 | 25,258,491 | 1.3849 | 2014 | 15,856,420 | 22,373,935 | 1.4110 |
| 2014 | 8,312,308 | 16,085,013 | 1.9351 | 2015 | 8,897,354 | 18,817,519 | 2.1150 |
| 2015 | 1,776,434 | 8,994,138 | 5.0630 | 2016 | 1,349,154 | 7,974,256 | 5.9106 |
| 2016 |  | 1,374,748 |  | 2017 |  | 1,755,728 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be
independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

* Losses limited on a per-claim basis, with the actual limitation varying by policy year as described in Exhibit 1a.

Losses are expressed on a post-HB175, pre-HB373 basis.

## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

MEDICAL PAID LOSSES

| Policy Year Valued | As of 12/31/13 | As of 12/31/14 | Ratio to Prior Year | Policy Year Valued | As of 12/31/14 | As of 12/31/15 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 63,767,478 | 64,379,291 | 1.0096 | to 1986 | 63,802,304 | 64,307,489 | 1.0079 |
| 1986 | 10,259,664 | 10,294,230 | 1.0034 | 1986 | 10,260,597 | 10,309,307 | 1.0047 |
| 1987 | 14,040,511 | 14,198,311 | 1.0112 | 1987 | 14,091,659 | 14,212,542 | 1.0086 |
| 1988 | 14,863,243 | 14,938,103 | 1.0050 | 1988 | 14,843,470 | 14,877,827 | 1.0023 |
| 1989 | 18,449,740 | 18,757,169 | 1.0167 | 1989 | 18,655,252 | 19,032,607 | 1.0202 |
| 1990 | 17,625,481 | 17,751,847 | 1.0072 | 1990 | 17,546,328 | 17,712,610 | 1.0095 |
| 1991 | 18,300,459 | 18,451,792 | 1.0083 | 1991 | 18,301,472 | 18,556,412 | 1.0139 |
| 1992 | 18,919,351 | 19,139,714 | 1.0116 | 1992 | 18,947,909 | 19,095,291 | 1.0078 |
| 1993 | 20,280,321 | 20,453,822 | 1.0086 | 1993 | 20,171,817 | 20,442,993 | 1.0134 |
| 1994 | 16,510,181 | 16,911,292 | 1.0243 | 1994 | 16,789,237 | 16,873,576 | 1.0050 |
| 1995 | 18,749,874 | 19,014,493 | 1.0141 | 1995 | 18,882,195 | 19,014,651 | 1.0070 |
| 1996 | 24,716,082 | 25,162,892 | 1.0181 | 1996 | 24,800,219 | 25,355,743 | 1.0224 |
| 1997 | 22,317,473 | 22,822,130 | 1.0226 | 1997 | 22,228,619 | 22,450,294 | 1.0100 |
| 1998 | 21,168,522 | 21,267,953 | 1.0047 | 1998 | 19,705,802 | 19,892,556 | 1.0095 |
| 1999 | 24,598,187 | 24,711,950 | 1.0046 | 1999 | 23,532,893 | 23,954,938 | 1.0179 |
| 2000 | 34,255,404 | 34,997,232 | 1.0217 | 2000 | 32,641,601 | 33,209,881 | 1.0174 |
| 2001 | 25,466,041 | 26,005,906 | 1.0212 | 2001 | 25,584,486 | 25,972,840 | 1.0152 |
| 2002 | 32,014,397 | 33,071,328 | 1.0330 | 2002 | 31,209,423 | 32,850,457 | 1.0526 |
| 2003 | 35,065,145 | 36,185,701 | 1.0320 | 2003 | 34,372,131 | 35,125,044 | 1.0219 |
| 2004 | 38,069,601 | 39,112,074 | 1.0274 | 2004 | 39,111,538 | 40,385,762 | 1.0326 |
| 2005 | 38,766,752 | 39,881,118 | 1.0287 | 2005 | 39,880,976 | 40,666,976 | 1.0197 |
| 2006 | 38,818,303 | 40,585,627 | 1.0455 | 2006 | 40,586,388 | 42,400,478 | 1.0447 |
| 2007 | 40,501,292 | 41,945,812 | 1.0357 | 2007 | 41,945,095 | 43,296,500 | 1.0322 |
| 2008 | 38,782,768 | 40,845,039 | 1.0532 | 2008 | 40,844,057 | 42,834,596 | 1.0487 |
| 2009 | 39,946,444 | 42,242,954 | 1.0575 | 2009 | 42,242,837 | 45,849,229 | 1.0854 |
| 2010 | 41,538,179 | 45,864,826 | 1.1042 | 2010 | 46,146,365 | 49,385,146 | 1.0702 |
| 2011 | 38,403,151 | 42,729,672 | 1.1127 | 2011 | 42,771,237 | 46,185,971 | 1.0798 |
| 2012 | 23,489,899 | 31,956,104 | 1.3604 | 2012 | 31,869,442 | 37,243,070 | 1.1686 |
| 2013 | 5,107,361 | 23,640,708 | 4.6288 | 2013 | 23,768,742 | 34,265,903 | 1.4416 |
| 2014 |  | 4,364,034 |  | 2014 | 4,364,034 | 22,138,884 | 5.0730 |
|  |  |  |  | 2015 |  | 7,559,711 |  |
| Policy Year Valued | As of 12/31/15 | $\begin{gathered} \text { As of } \\ 12 / 31 / 16 \end{gathered}$ | Ratio to Prior Year | Policy Year Valued | As of 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 64,302,196 | 64,889,388 | 1.0091 | to 1987 | 75,173,493 | 75,269,635 | 1.0013 |
| 1986 | 10,309,727 | 10,330,904 | 1.0021 | 1987 | 14,371,091 | 14,492,420 | 1.0084 |
| 1987 | 14,213,561 | 14,422,918 | 1.0147 | 1988 | 14,897,601 | 14,904,424 | 1.0005 |
| 1988 | 14,878,999 | 14,897,873 | 1.0013 | 1989 | 19,092,255 | 19,293,865 | 1.0106 |
| 1989 | 19,034,079 | 19,092,308 | 1.0031 | 1990 | 17,675,377 | 17,843,787 | 1.0095 |
| 1990 | 17,711,631 | 17,797,189 | 1.0048 | 1991 | 18,594,213 | 18,678,804 | 1.0045 |
| 1991 | 18,556,621 | 18,607,512 | 1.0027 | 1992 | 19,135,248 | 19,170,988 | 1.0019 |
| 1992 | 19,094,447 | 19,153,582 | 1.0031 | 1993 | 20,643,708 | 20,826,990 | 1.0089 |
| 1993 | 20,443,355 | 20,664,528 | 1.0108 | 1994 | 17,250,136 | 17,345,961 | 1.0056 |
| 1994 | 16,873,470 | 17,035,415 | 1.0096 | 1995 | 19,109,922 | 19,182,166 | 1.0038 |
| 1995 | 19,013,837 | 19,117,453 | 1.0054 | 1996 | 25,697,501 | 25,927,629 | 1.0090 |
| 1996 | 25,354,747 | 25,725,166 | 1.0146 | 1997 | 22,833,137 | 22,982,670 | 1.0065 |
| 1997 | 22,450,757 | 22,850,241 | 1.0178 | 1998 | 20,422,632 | 20,877,731 | 1.0223 |
| 1998 | 19,893,189 | 20,201,490 | 1.0155 | 1999 | 24,067,292 | 24,144,715 | 1.0032 |
| 1999 | 23,954,924 | 24,112,325 | 1.0066 | 2000 | 33,508,983 | 33,747,451 | 1.0071 |
| 2000 | 33,210,266 | 33,516,077 | 1.0092 | 2001 | 26,802,648 | 27,228,394 | 1.0159 |
| 2001 | 25,971,274 | 26,853,237 | 1.0340 | 2002 | 33,331,686 | 33,754,957 | 1.0127 |
| 2002 | 32,852,163 | 33,344,582 | 1.0150 | 2003 | 35,681,270 | 36,793,632 | 1.0312 |
| 2003 | 35,093,274 | 35,852,012 | 1.0216 | 2004 | 41,168,616 | 41,925,669 | 1.0184 |
| 2004 | 40,383,943 | 41,218,183 | 1.0207 | 2005 | 41,220,254 | 41,970,278 | 1.0182 |
| 2005 | 40,664,587 | 42,384,505 | 1.0423 | 2006 | 43,832,354 | 44,799,395 | 1.0221 |
| 2006 | 42,364,852 | 44,159,060 | 1.0424 | 2007 | 44,512,150 | 46,290,595 | 1.0400 |
| 2007 | 43,167,620 | 44,539,726 | 1.0318 | 2008 | 44,010,014 | 45,066,564 | 1.0240 |
| 2008 | 42,220,465 | 44,029,310 | 1.0428 | 2009 | 47,059,288 | 49,002,036 | 1.0413 |
| 2009 | 44,461,584 | 47,130,380 | 1.0600 | 2010 | 51,224,422 | 53,387,809 | 1.0422 |
| 2010 | 48,964,967 | 51,284,894 | 1.0474 | 2011 | 46,530,357 | 49,214,277 | 1.0577 |
| 2011 | 45,844,730 | 46,665,796 | 1.0179 | 2012 | 39,771,787 | 42,435,272 | 1.0670 |
| 2012 | 36,938,578 | 40,094,315 | 1.0854 | 2013 | 40,118,776 | 43,142,070 | 1.0754 |
| 2013 | 33,875,621 | 40,412,581 | 1.1930 | 2014 | 30,155,554 | 34,294,403 | 1.1372 |
| 2014 | 21,957,172 | 30,721,339 | 1.3991 | 2015 | 28,954,611 | 38,934,424 | 1.3447 |
| 2015 | 7,559,673 | 29,312,128 | 3.8774 | 2016 | 6,411,340 | 27,258,277 | 4.2516 |
| 2016 |  | 6,473,100 |  | 2017 |  | 6,588,686 |  |

NOTE: So as to maximize the use of available data, the companies used in one stage of development were allowed to be independent of those used in the other stage of development; therefore, the figures shown at each valuation may vary.

* Losses limited on a per-claim basis, with the actual limitation varying by policy year as described in Exhibit 1a.

Losses are expressed on a post-HB175, pre-HB373 basis.

## EXHIBIT VIII <br> DELAWARE COMPENSATION RATING BUREAU, INC. RATE AND LOSS COST FORMULAE

The experience used for classification relativities for the December 1, 2018 revision will include all available risks. It is proposed that catastrophes be limited in accordance with the procedure previously employed in other DCRB filings. The experience period will be five (5) years for all classifications regardless of whether a classification might meet the full credibility requirements with less than five years of data. Credibility will be based on reported payrolls for classifications using payroll as the exposure base. For non-payroll classifications, expected losses will be used as the basis for credibility. Thus, two credibility tables will be prepared for use in the December 1, 2018 filing. The values for these respective tables will be established such that the credibility assigned to a payroll-based classification having the same portion of total statewide expected losses and payrolls attributable to its experience using each table would be equal. All occupational disease losses will be included in the exhibit of classification experience, with the total amount of such losses by type of injury being shown on a separate line on the classification rate worksheets.

The larger classifications are subject to standard procedures as described below. However, circumstances will sometimes require that some classifications' rating procedure be modified to recognize situations where the normal rating process would not be appropriate. Such classifications, and the manner in which their rates or loss costs have been derived, are separately identified within the filing material.

The calculation of assigned risk classification rates will be made in accordance with the following procedure:
(1) Determine the pure premiums underlying present Manual Residual Market Rates by category (serious, non-serious, medical only and total) for each classification.
(2) Adjust the present pure premiums by category (serious, non-serious, medical only and total) to the December 1, 2018 on-rate-level to obtain present on-rate-level pure premiums.
(3) Determine Expected Losses (serious, non-serious, medical only and total) for each classification by multiplying the exposures from the experience period by the pure premiums underlying present Manual Rates.
(4) Determine the indicated pure premiums (serious, non-serious, medical only and total) from the exposures and losses from the experience period.
(5) Test the indicated total pure premiums by multiplying the exposures of the latest three years for each classification and obtaining the total Actual Losses for all classifications combined.
(6) Calculate Expected Losses by multiplying the present pure premiums by the exposures from the last three years for each classification and by the overall average rate change.
(7) Obtain correction factors by category of loss (serious, non-serious and medical only) by dividing the Expected Losses derived in (6) by the Actual Losses derived in (5).
(8) Multiply the indicated (pre-test) pure premiums from (4) times the correction factors derived in (7) to obtain indicated (post-test) pure premiums.

## RATE AND LOSS COST FORMULAE (continued)

(9) Determine "formula" pure premiums from (2) and (8) above for each type of loss (serious, nonserious and medical only), with credibility for each category of loss corresponding to either the amount of reported payroll (for all classifications in which payroll is the exposure base) or to the amount of Expected Losses (for all "non-payroll" classifications). Credibility weights will be taken from exhibits appearing in the Class Book. The complement of credibility is in each case to be assigned to the present on December 1, 2018 level pure premiums for each category of loss.
(10) Select proposed total pure premiums for each classification, using the middle value from the total pure premiums derived in (2), (8) and (9) above. If the proposed pure premium selected on this basis is different from the formula pure premium derived in (9) above, partial pure premiums are to be allocated between categories (serious, non-serious and medical only) in the same proportion as the partial pure premiums comprising the formula pure premium.
(11) Test the proposed total pure premiums selected in (10) by multiplying by the exposures of the three latest years for each classification and obtaining the total Expected Losses for all classifications combined.
(12) Obtain a correction factor by dividing the Expected Losses derived in (6) above by the Expected Losses derived in (11) above.
(13) Calculate the "composite pure premium multipliers" for each industry group as the product of the following items:
(a) The pure premium correction factor determined in (12) above.
(b) The proposed experience rating plan off-balance factor (Collectible Premium Ratio).
(c) The inverse of the permissible loss and loss adjustment ratio.
(d) The estimated effect of the July 1, 2019 benefit change.
(14) Apply the composite pure premium multiplier obtained in (13) above to the proposed total pure premiums to obtain Manual Rates.
(15) Test to assure that the maximum departure of the Manual Rates derived in (14) above from current Manual Rates is in accordance with the following parameters:

Maximum Change in Rates:
Upward: The industry group average change plus $25 \%$ rounded to the nearest $1 \%$.
Downward: The industry group average change minus $25 \%$ rounded to the nearest $1 \%$.
(16) Manual rates are to be rounded to the nearest $\$ .01$.
(17) Test the Manual Rates derived in (16) above to determine if balance has been achieved within 0.0005 of the indicated change in rate level by industry group. If such balance has not been achieved, calculate the necessary correction factor to adjust the composite pure premium multipliers derived in (13) above to achieve the necessary balance. Perform steps (14) through (17) iteratively until the desired balance is achieved.

## RATE AND LOSS COST FORMULAE (continued)

## Non-reviewed Classifications

(18) For classifications with insufficient credibility (non-reviewed classifications), an alternative calculation is used to derive indicated rates.

Insufficient credibility is defined as having five-year payroll less than that necessary to achieve 5\% credibility for the non-serious component of pure premium. For non-payroll based classifications, expected losses replace payrolls.

For these non-reviewed classes, the indicated rate is calculated as follows:
a) An average loss cost using Pennsylvania loss cost values and the Delaware distribution of business by class is calculated.
b) Classification relativities are then calculated that relate the Pennsylvania loss cost by classification to the average overall loss cost calculated in (a) above.
c) Indicated average loss costs are calculated by class by multiplying the relativities in (b) above times the average Delaware loss cost value for all classes combined times the average manual change in rates times the indicated composite pure premium multiplier.
d) A second indicated rate is calculated by applying the average manual change in rates by industry group to the current Delaware rate for the class.
e) A final indicated rate, subject to capping and balancing criteria previously described, is calculated by applying one-third weight to (c) above plus two-thirds weight to (d) above.

## Loss Costs

The calculation of non-assigned risk classification loss costs will be made in accordance with the following procedure:
(19) Multiply the proposed assigned risk Manual Rates by classification by the permissible loss, loss adjustment expense and loss based assessment ratio.

## EXHIBIT IX

## COLLECTIBLE PREMIUM RATIOS *

Manual Years 2015 to 2017 Market Profile Report Data

| Manual <br> Year | Premium at Manual Rates | Collected Premium <br> (Excluding Constants) | Collectible Premium Ratio (2)/(3) |
| :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) |
| ALL INDUSTRIES |  |  |  |
| 2015 | 257,877,946 | 270,816,210 | 0.9522 |
| 2016 | 293,201,296 | 301,256,550 | 0.9733 |
| 2017 | 313,670,999 | 329,103,892 | 0.9531 |
| TOTAL | 864,750,241 | 901,176,651 | 0.9596 |


|  |  |  |  |
| :--- | :---: | :---: | :---: |
|  | MANUFACTURING AND UTILITIES |  |  |
| 2015 | $35,968,946$ | $32,877,651$ | 1.0940 |
| 2016 | $35,937,227$ | $32,692,578$ | 1.0992 |
| 2017 | $38,953,163$ | $35,365,073$ | 1.1015 |
|  |  |  |  |
| TOTAL | $110,859,336$ | $100,935,302$ | 1.0983 |
|  |  |  |  |
|  |  |  | 1.0307 |
|  |  |  | 1.0539 |
| 2015 | $49,604,268$ | $58,128,370$ | 1.0438 |
| 2016 | $61,563,634$ | $59,290,571$ |  |
| 2017 | $61,886,594$ | $165,836,311$ | 1.0435 |
|  |  |  |  |

OTHER INDUSTRIES

| 2015 | $172,304,732$ | $189,810,188$ | 0.9078 |
| :---: | :---: | :---: | :---: |
| 2016 | $195,700,435$ | $210,146,601$ | 0.9313 |
| 2017 | $212,831,242$ | $234,448,248$ | 0.9078 |
|  |  |  |  |
| TOTAL | $580,836,409$ | $634,405,038$ | 0.9156 |

[^16]
## EXHIBIT X

## EXPECTED LOSS RATE FACTORS

## CALCULATION OF EXPECTED LOSS RATE FACTORS

| Policy Year Beginning 12/1 | Average Law Multiplier | Adjustment Factor | Loss Ratio Development Factor | Expense Allowance ** 1 / (PLR/CPR) | Trend Factor | $\begin{aligned} & \text { Product } \\ & (2) \text { * }(3) \text { * }(4) \\ & *(5) *(6) \end{aligned}$ | Expected Loss Rate Factor 1.0 / (7) | Factor to Reflect Approved Rate Levels* | Combined Effect (8) * (9) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Manufacturing and Utilities |  |  |  |  |  |  |  |  |  |
| 2014 | 0.9558 | 1.0000 | 1.5997 | 1.8647 | 1.2567 | 3.5830 | 0.2791 | 1.0006 | 0.2793 |
| 2015 | 0.9914 | 1.0000 | 2.0079 | 1.8647 | 1.1863 | 4.4035 | 0.2271 | 1.0006 | 0.2272 |
| 2016 | 1.0023 | 1.0000 | 2.5133 | 1.8647 | 1.1202 | 5.2619 | 0.1900 | 1.0006 | 0.1901 |
| Contracting and Quarrying |  |  |  |  |  |  |  |  |  |
| 2014 | 0.9558 | 1.0000 | 1.7108 | 1.7716 | 1.2567 | 3.6405 | 0.2747 | 1.0006 | 0.2749 |
| 2015 | 0.9914 | 1.0000 | 1.8856 | 1.7716 | 1.1863 | 3.9288 | 0.2545 | 1.0006 | 0.2547 |
| 2016 | 1.0023 | 1.0000 | 2.2604 | 1.7716 | 1.1202 | 4.4962 | 0.2224 | 1.0006 | 0.2225 |
| Other Industries |  |  |  |  |  |  |  |  |  |
| 2014 | 0.9558 | 1.0000 | 1.6580 | 1.5545 | 1.2567 | 3.0958 | 0.3230 | 1.0007 | 0.3232 |
| 2015 | 0.9914 | 1.0000 | 1.9050 | 1.5545 | 1.1863 | 3.4828 | 0.2871 | 1.0007 | 0.2873 |
| 2016 | 1.0023 | 1.0000 | 2.5715 | 1.5545 | 1.1202 | 4.4882 | 0.2228 | 1.0007 | 0.2230 |

* (12/1/18 Filed Change in Manual Rate Level)/(12/1/18 Approved Change in Manual Rate Level) by Industry Group, from Exhibit 12, Page

```
** Permissible Loss Ratio = 0.5890
Collectible Premium Ratios
    Manufacturing = 1.0983
    All Other = 0.9156
```


## EXHIBIT XI

## CALCULATION OF TAX MULTIPLIER FOR USE IN RETROSPECTIVE RATING PLANS (OIT U.S.L. \& H.W. Act Coverages)

Expense Provisions for O/T U.S.L. \& H.W. Classes

| Losses | 58.90 |
| :--- | :---: |
| Loss Adjustment Expense | 12.80 |
| $\quad$ Loss \& Loss Adjustment | 71.70 |
|  |  |
| Premium Discount | 8.64 |
| Acquisition | 7.81 |
| General Expenses | 3.50 |
| Profit and Contingencies | $(0.30)$ |
| Taxes | 2.33 |
| Uncollectible Premium | 1.45 |
| Workers' Compensation Fund | 2.00 |
| Administrative Assessment | 2.87 |

If
$\mathrm{T}=$ Tax multiplier
$\mathrm{E}=$ Expense provision in rates (General, Acquisition, and Profit), less premium discount
$\mathrm{L}=$ Loss provision in rates
C $=$ Loss conversion factor
B = Assessments made on premiums
A = Assessments made on losses (adjusted so as not to collect profit and general expense dollars on the extra premium generated by the assessments)

Using average discount (Schedule Y ) this yields:

$$
\begin{aligned}
& \text { E }=0.0237=\begin{array}{c}
\text { ACQ } \\
A= \\
A
\end{array}=0.0781+0.0350+\begin{array}{c}
\text { PROFIT } \\
(0.0030)
\end{array} \begin{array}{c}
\text { PREM DISC } \\
0.0864
\end{array} \\
&
\end{aligned}
$$

Then

$$
\begin{aligned}
& \mathrm{T}=\frac{\mathrm{E}+\mathrm{L}(1+\mathrm{C}+\mathrm{A})}{\mathrm{E}+\mathrm{L}(1+\mathrm{C})} \times \frac{1}{1-\mathrm{B}-\mathrm{S}} \\
& \mathrm{~S}=\quad \text { Delaware Insurance Plan Subsidy }=0.0255 \\
& \mathrm{~T}=\frac{0.0237+0.5890(1+0.2174+0.0479)}{0.0237+0.5890(1+0.2174)} \times \frac{1}{1-0.0578-0.0255}=1.1324
\end{aligned}
$$

## EXHIBIT XII

## DELAWARE RETROSPECTIVE DEVELOPMENT FACTORS *

Retrospective development factors for first, second and third adjustments are calculated below. They are intended for use in retrospective plans with no loss limitation and applicable to the expected loss portion of premium.

| First Adjustment | RDF $=$ | 0.6010 |
| :--- | :--- | :--- |
| Second Adjustment | RDF $=$ | 0.4779 |
| Third Adjustment | RDF $=$ | 0.4000 |

For those companies using retrospective development factors with loss limitations, the following formula may be used.
RDF(LIM) $=(1.0-$ ELF) $x$ RDF

RDF(LIM) = Retrospective Development Factors at limited basis ELF = Excess Loss (Pure Premium) Factors exclusive of allocated loss adjustment expenses for given Hazard Group and Loss Limitation RDF = Retrospective Development Factors without Loss Limitation

For Example:
\$25,000 limit Hazard Group C ELF = 0.664
First Adjustment RDF $=\quad(1-0.664) * 0.601=\quad 0.2019$

* The use of retrospective development factors is optional.


[^0]:    * $\$ 2,672,000$ on a Post-HB175, Pre-HB373 basis.

[^1]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^2]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^3]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^4]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^5]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^6]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^7]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^8]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^9]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^10]:    * Projected losses limited on a per claim basis, with the loss limitation varying by policy year.
    ** Severity ratio represents loss and loss adjustment expense ratio adjusted to a common level of frequency.

[^11]:    * Selected

[^12]:    a From Table I-D
    b 27th (Paid - Table I-D) to 28th (Incurred - Table I-B)
    c From Table I-B

[^13]:    $Y=a^{*} x^{\wedge} b^{*} \exp \left(-c^{*} x\right)$
    $a=0.381100 \quad b=-1.400509 \mathrm{c}=0.134845$

    + Selected four year average

[^14]:    a From Table I-E
    b 27th (Paid - Table I-E) to 28th (Incurred - Table I-C)
    c From Table I-C

[^15]:    $\mathrm{Y}=\mathrm{a}+\mathrm{b} / \mathrm{x}+\mathrm{c}^{*} \exp (-\mathrm{x})$
    $a=-0.010644 b=0.302936 \mathrm{c}=-0.212506$

    + Selected four year average

[^16]:    * Excludes classifications and coverages not subject to experience rating.

