DELAWARE COMPENSATION RATING BUREAU, INC.

## ACTUARIAL COMMITTEE

Summary of Material for Modification of Experience December 1, 2020 Residual Market Rate and Voluntary Market Loss Cost Revision

## PROPOSED EFFECTIVE DATE - DECEMBER 1, 2020

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## EXHIBIT I

## INDICATED CHANGE IN RATE LEVEL

(1a) Policy Year 2015 Loss and Loss Adjustment Expense Ratio
(1b) Policy Year 2016 Loss and Loss Adjustment Expense Ratio
(1c) Policy Year 2017 Loss and Loss Adjustment Expense Ratio
(1d) Policy Year 2018 Loss and Loss Adjustment Expense Ratio
(1e) Average (Midpoint $=7 / 1 / 2017$ )
(2a) Policy Year 2015 Loss and LAE Ratio Trended to 12/1/2020
(2b) Policy Year 2016 Loss and LAE Ratio Trended to 12/1/2020
(2c) Policy Year 2017 Loss and LAE Ratio Trended to 12/1/2020
(2d) Policy Year 2018 Loss and LAE Ratio Trended to 12/1/2020
(2e) Average at 12/1/2021
(3a) Excess Loss Factor at \$1,742,306 (Post-Legislative Basis)
(3b) Provision for Excess Loss (4a) - (2e)
(4a) Total Trended Loss and LAE Ratio (2e) / (1.0-(3a))
(4b) Percentage of Total
(5) Permissible Loss and Loss Adjustment Ratio
(6) Indicated Change in Rates (4a) / (5)
(7) Estimated Effect of the 7/1/21 Benefit Change
(8) Indicated Change in Residual Market Rate Level (6) * (7)

| Indemnity | Medical | Total |
| :---: | :---: | :---: |
| 0.3278 | 0.4017 | 0.7295 |
| 0.3036 | 0.4334 | 0.7370 |
| 0.2767 | 0.3939 | 0.6706 |
| 0.2580 | 0.3584 | 0.6164 |
| 0.2915 | 0.3969 | 0.6884 |
| 0.2217 | 0.3863 |  |
| 0.2194 | 0.4195 |  |
| 0.2136 | 0.3838 |  |
| 0.2127 | 0.3515 |  |
| 0.2169 | 0.3853 | 0.6022 |
|  |  | 0.0796 |
|  |  | 0.0521 |
| 0.2226 | 0.4317 | 0.6543 |
| 34.02\% | 65.98\% |  |
|  |  | 0.6866 |
|  |  | 0.9530 |
|  |  | 1.0036 |
|  |  | 0.9564 |
|  |  | -4.36\% |
|  |  | 0.9274 |
|  |  | -7.26\% |


| Mfg. | Cont. | Other | Total |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| 1.1130 | 1.0522 | 0.9358 |  |
| 1.0913 | 1.0498 | 0.9260 |  |
| 0.9805 | 0.9977 | 0.9895 | 0.9899 |
|  |  |  |  |
| 0.9378 | 0.9542 | 0.9464 | 0.9467 |
|  |  |  | 0.9180 |
| 0.9093 | 0.9253 | 0.9177 | 0.9946 |
|  |  |  | 0.9957 |
|  |  |  | 0.9190 |
| 0.9103 | 0.9263 | 0.9187 |  |

## EXHIBIT II

## EXPENSE LOADING

Current \% Proposed \%

## LOSS AND LOSS ADJUSTMENT EXPENSE

Losses
Loss Adjustment Expense
Loss \& Loss Adjustment
UNDERWRITING EXPENSES

| Commission | 5.43 | 5.45 |
| :--- | :--- | :--- |
| Other Acquisition | 2.14 | 2.04 |
| General Expenses | 3.16 | 2.84 |
| Premium Discount | 8.63 | 8.59 |
| State Premium Tax | 2.00 | 2.00 |
| Other State Tax | 0.33 | 0.32 |
| Uncollectible Premium | 2.00 | 2.30 |
| Administrative Assessment | 2.83 | 3.20 b |
| Workers Compensation Fund | 2.00 | 2.00 |
| Deviations | 0.00 | 0.00 |
| Policyholder Dividends | 0.00 | 0.00 |
| Underwriting Profit | 0.20 | 2.60 |
| Underwriting Expense Total | 28.72 | 31.34 |

a - As ratio to loss, Loss Adjustment Expense $=0.2614$
b - As ratio to loss, Administrative Assessment $=0.0588$

## RESIDUAL MARKET MINIMUM PREMIUM:

It is proposed that the Minimum Premium formula increase from (275 * Rate) + Expense Constant to
(280 * 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 140.00 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 $\$ 315$ to $\$ 320$.

## EXHIBIT III

## INTERNAL RATE OF RETURN ANALYSIS

STATE OF DELAWARE - 2020

## TABLE I: INPUTS, ASSUMPTIONS \& OUTPUTS



Section 2: Outputs
(1) Loss Ratio - including loss adjustment expense \&
loss based assessments
(2) Profit \& Contingencies
2.60

## EXHIBIT IV-1

## POLICY YEAR LOSS RATIO 2018*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 174,630,877 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.0241 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0069 |
| (4) | Expense Constant Removal Factor |  |  | 0.9973 |
| (5) | DCCPAP On-Level Factor |  |  | 1.0134 |
| (6) | Other Adjustments |  |  | 1.0000 |
| (7) | Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  | 181,991,400 |
| Loss | es - Paid-to-30th Method | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 8,100,242 | 15,508,644 | 23,608,886 |
| (9) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 4.4527 | 2.6225 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 36,067,948 | 40,671,419 | 76,739,367 |
| Loss | es - Incurred Method |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 20,291,478 | 31,309,939 | 51,601,417 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.7795 | 2.0037 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 36,108,685 | 62,735,725 | 98,844,410 |
| Loss | es - Average of Incurred and Paid-to-30th |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 36,088,317 | 51,703,572 | 87,791,889 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.0314 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 46,951,188 | 65,218,886 | 112,170,074 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.2580 | 0.3584 | 0.6164 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.4918 | 0.4918 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5246 | 0.7287 | 1.2533 |

[^0]
## EXHIBIT IV - 2

## POLICY YEAR LOSS RATIO 2017*

(1) Standard Earned Premium Reported (Table I)
$177,798,697$
(2) Factor to 12/1/19 Rate Level (Exhibit V-1) 0.9891
(3) Premium Development Factor to Ultimate Level (Exhibit VI-1) 0.9988
(4) Expense Constant Removal Factor 0.9975
(5) DCCPAP On-Level Factor
1.0134
(6) Other Adjustments
1.0000
(7) Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6)
$177,561,315$

Losses - Paid-to-30th Method
(8) Paid Losses (Table I-D \& I-E)
$17,878,010$
$24,334,702$
Total
(9) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
2.2490
1.9225
(10) Ultimate Incurred Losses (8) * (9)
$40,207,644$
$46,783,465$
86,991,109
Losses - Incurred Method
(11) Incurred Losses (Table I-B \& I-C)

27,662,892
$37,042,212$
64,705,104
(12) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
1.2919
$35,737,690$
1.7310
(13) Ultimate Incurred Losses (11) * (12)

Losses - Average of Incurred and Paid-to-30th
(14) Ultimate Incurred Losses ((10) + (13)) / 2

37,972,667
$55,451,767$
93,424,434
(15) Factor to $7 / 1 / 20$ Benefit Level (Exhibit V-3)
(16) Factor to Include Loss Adjustment Expense
(17) Adjusted Losses (14) * (15) * (16)

49,129,719
69,946,859
$119,076,578$
(18) Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7)
0.2767
0.3939
0.6706
(19) Normalized Claim Frequency (Exhibit VII-3)
0.5662
0.5662
0.6957
1.1844

[^1]
## EXHIBIT IV - 3

## POLICY YEAR LOSS RATIO 2016*

(1) Standard Earned Premium Reported (Table I)
$165,860,349$
(2) Factor to 12/1/19 Rate Level (Exhibit V-1)
0.9658
(3) Premium Development Factor to Ultimate Level (Exhibit VI-1)
1.0008
(4) Expense Constant Removal Factor
0.9973
(5) DCCPAP On-Level Factor
1.0153
(6) Other Adjustments
(7) Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6)
(8) Paid Losses (Table I-D \& I-E)
(9) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
(10) Ultimate Incurred Losses (8) * (9)

Losses - Incurred Method
(11) Incurred Losses (Table I-B \& I-C)
(12) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
(13) Ultimate Incurred Losses (11) * (12)

Losses - Average of Incurred and Paid-to-30th
(14) Ultimate Incurred Losses ((10) + (13)) / 2
(15) Factor to 7/1/20 Benefit Level (Exhibit V-3)
(16) Factor to Include Loss Adjustment Expense
(17) Adjusted Losses (14) * (15) * (16)
(18) Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7)
(19) Normalized Claim Frequency (Exhibit VII-3)
(20) Severity Ratio** (18) / (19)

37,612,502
1.0389
1.2614

49,289,998
0.3036
0.5637
0.5386

55,771,028
1.0000
1.2614

70,349,575
119,639,573
0.4334
0.7370
0.5637
0.7688

93,383,530
1.3074

[^2]
## EXHIBIT IV - 4

## POLICY YEAR LOSS RATIO 2015*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 146,348,416 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.0197 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0006 |
| (4) Expense Constant Removal Factor |  |  |  | 0.9965 |
| (5) DCCPAP On-Level Factor |  |  |  | 1.0166 |
| (6) Other Adjustments |  |  |  | 1.0000 |
| (7) Standard Earned Premium on Level (1) * (2) * 3 ) * (4) * (5) * (6) |  |  |  | 151,265,830 |
| Losses - Paid-to-30th Method |  | Indemnity | Medical | Total |
| (8) Paid Losses (Table I-D \& I-E) |  | 28,475,986 | 29,229,793 | 57,705,779 |
| (9) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | $1.3779$ | 1.6007 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 39,237,061 | 46,788,130 | 86,025,191 |
| Losses - Incurred Method |  |  |  |  |
| (11) Incurred Losses (Table I-B \& I-C) |  | 32,274,000 | 35,301,800 | 67,575,800 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0937 | 1.4038 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 35,298,074 | 49,556,667 | 84,854,741 |
| Losses - Average of Incurred and Paid-to-30th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 37,267,568 | 48,172,399 | 85,439,967 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.0549 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 49,590,121 | 60,764,664 | 110,354,785 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.3278 | 0.4017 | 0.7295 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6438 | 0.6438 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5092 | 0.6240 | 1.1332 |

[^3]
## EXHIBIT IV - 5

## POLICY YEAR LOSS RATIO 2014*

(1) Standard Earned Premium Reported (Table I)

148,049,227
(2) Factor to 12/1/19 Rate Level (Exhibit V-1)
0.9244
(3) Premium Development Factor to Ultimate Level (Exhibit VI-1)
1.0001
(4) Expense Constant Removal Factor 0.9966
(5) DCCPAP On-Level Factor

### 1.0141

(6) Other Adjustments
(7) Standard Earned Premium on Level (1) * (2) * (3) * (4) * (5) * (6)

Losses - Paid-to-30th Method
(8) Paid Losses (Table I-D \& I-E)
(9) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
(10) Ultimate Incurred Losses (8) * (9)

## Losses - Incurred Method

(11) Incurred Losses (Table I-B \& I-C)
(12) Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4)
(13) Ultimate Incurred Losses (11) * (12)

Losses - Average of Incurred and Paid-to-30th
(14) Ultimate Incurred Losses ((10) $+(13)) / 2$
(15) Factor to 7/1/20 Benefit Level (Exhibit V-3)
(16) Factor to Include Loss Adjustment Expense
(17) Adjusted Losses (14) * (15) * (16)
(18) Policy Year Loss and Loss Adjustment Expense Ratio (17) / (7)
(19) Normalized Claim Frequency (Exhibit VII-3)
(20) Severity Ratio** (18) / (19)

* 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.


## EXHIBIT IV - 6

## POLICY YEAR LOSS RATIO 2013*

| Standard Earned Premium Reported (Table I) |  |  |  | 135,130,720 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.0172 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0003 |
| (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) |  |  |  | 138,933,417 |
| Losses - Paid-to-30th Method |  | Indemnity | Medical | Total |
| (8) Paid Losses (Table I-D \& I-E) 35,672,970 |  |  | 32,302,350 | 67,975,320 |
| (9) | Loss Development Factor to Ultimate <br> Valuation (Exhibit VI-2 \& VI-4) | $1.1857$ | 1.4598 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 42,297,441 | 47,154,971 | 89,452,412 |
| Losses - Incurred Method |  |  |  |  |
| (11) Incurred Losses (Table I-B \& I-C) |  | 38,966,037 | 39,245,608 | 78,211,645 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0403 | 1.2319 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 40,536,368 | 48,346,664 | 88,883,032 |
| Losses - Average of Incurred and Paid-to-30th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 41,416,905 | 47,750,818 | 89,167,723 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.0688 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 55,837,622 | 60,232,882 | 116,070,504 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.4019 | 0.4335 | 0.8354 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.7173 | 0.7173 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5603 | 0.6043 | 1.1646 |

[^4]
## EXHIBIT IV-7

## POLICY YEAR LOSS RATIO 2012*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 115,267,794 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.2474 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0003 |
| (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) |  |  |  | 145,575,257 |
| Losses - Paid-to-30th Method |  | Indemnity | Medical | Total |
| (8) Paid Losses (Table I-D \& I-E) |  | 33,881,021 | 30,628,239 | 64,509,260 |
| (9) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | $1.1414$ | 1.4098 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 38,671,797 | 43,179,691 | 81,851,488 |
| Losses - Incurred Method |  |  |  |  |
| (11) Incurred Losses (Table I-B \& I-C) |  | 36,945,367 | 35,439,535 | 72,384,902 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0274 | 1.1779 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 37,957,670 | 41,744,228 | 79,701,898 |
| Losses - Average of Incurred and Paid-to-30th |  |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 38,314,734 | 42,461,960 | 80,776,694 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.0919 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 52,771,751 | 53,561,516 | 106,333,267 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.3625 | 0.3679 | 0.7304 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.6879 | 0.6879 |  |
| (20) | Severity Ratio** (18) / (19) | 0.5270 | 0.5348 | 1.0618 |

[^5]
## EXHIBIT IV - 8

## POLICY YEAR LOSS RATIO 2011*

| (1) | Standard Earned Premium Reported (Table I) |  |  | 105,773,822 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.4538 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0000 |
| (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) |  |  | 155,504,493 |
| Losses - Paid-to-30th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) 36,951,629 |  | 34,378,635 | 71,330,264 |
| (9) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) |  | 1.3675 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 41,068,040 | 47,012,783 | 88,080,823 |
| Loss | es - Incurred Method |  |  |  |
| (11) | Incurred Losses (Table I-B \& I-C) | 37,909,305 | 42,070,610 | 79,979,915 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0187 | 1.1373 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 38,618,209 | 47,846,905 | 86,465,114 |
| Loss | es - Average of Incurred and Paid-to-30th |  |  |  |
| (14) | Ultimate Incurred Losses $((10)+(13)) / 2$ | 39,843,125 | 47,429,844 | 87,272,969 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.1079 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 55,680,969 | 59,828,005 | 115,508,974 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.3581 | 0.3847 | 0.7428 |
|  | Normalized Claim Frequency (Exhibit VII-3) | 0.7647 | 0.7647 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4683 | 0.5031 | 0.9714 |

[^6]
## EXHIBIT IV - 9

## POLICY YEAR LOSS RATIO 2010*



[^7]
## POLICY YEAR LOSS RATIO 2009*

| Standard Earned Premium Reported (Table I) |  |  |  | 118,590,101 |
| :---: | :---: | :---: | :---: | :---: |
| (2) | Factor to 12/1/19 Rate Level (Exhibit V-1) |  |  | 1.3270 |
| (3) | Premium Development Factor to Ultimate Level (Exhibit VI-1) |  |  | 1.0000 |
| (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) |  |  |  | 159,219,310 |
| Losses - Paid-to-30th Method |  | Indemnity | Medical | Total |
| (8) | Paid Losses (Table I-D \& I-E) | 41,996,098 | 35,757,344 | 77,753,442 |
| (9) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0742 | 1.2988 |  |
| (10) | Ultimate Incurred Losses (8) * (9) | 45,112,208 | 46,441,638 | 91,553,846 |
| Losses - Incurred Method |  |  |  |  |
| (11) Incurred Losses (Table I-B \& I-C) |  | 45,462,344 | 46,480,917 | 91,943,261 |
| (12) | Loss Development Factor to Ultimate Valuation (Exhibit VI-2 \& VI-4) | 1.0084 | 1.0835 |  |
| (13) | Ultimate Incurred Losses (11) * (12) | 45,844,228 | 50,362,074 | 96,206,302 |
| Loss | es - Average of Incurred and Paid-to-30th |  |  |  |
| (14) | Ultimate Incurred Losses ((10) + (13)) / 2 | 45,478,218 | 48,401,856 | 93,880,074 |
| (15) | Factor to 7/1/20 Benefit Level (Exhibit V-3) | 1.1017 | 1.0000 |  |
| (16) | Factor to Include Loss Adjustment Expense | 1.2614 | 1.2614 |  |
| (17) | Adjusted Losses (14) * (15) * (16) | 63,200,369 | 61,054,101 | 124,254,470 |
| (18) | Policy Year Loss and Loss Adjustment |  |  |  |
|  | Expense Ratio (17) / (7) | 0.3969 | 0.3835 | 0.7804 |
| (19) | Normalized Claim Frequency (Exhibit VII-3) | 0.8080 | 0.8080 |  |
| (20) | Severity Ratio** (18) / (19) | 0.4912 | 0.4746 | 0.9658 |

[^8]EXHIBIT V - 1
POLICY YEARS 2014-2018
PREMIUM ON-LEVEL FACTORS


EXHIBIT V-2
POLICY YEARS 2009-2013
PREMIUM ON-LEVEL FACTORS

| POLICY | RATE (1) |  |  | (3) |  | (4) | (5) | FACTOR |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | CUM. |  | PORTION |  | TO ADJUST |
|  |  | CHANGE | RATE | INDEX OF |  | OF YEAR | PRODUCT | TO 12/1/19 |
| YEAR |  | DATE | CHANGE | COL (2) |  | ON-LEVEL | (3) * (4) | RATE LEVEL |
| 2013 | VOL | 12/01/12 | BASE | 0.7074 | * | 0.7579 | 0.5361 |  |
|  |  | 12/01/13 | 1.1400 | 0.8064 |  | 0.0577 | 0.0465 |  |
|  |  | 12/01/14 | 0.7182 | 0.5792 |  | ----------- | --------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.8156 | 0.5826 |  |
|  | RM | 12/01/12 | BASE | 1.0000 |  | 0.1724 | 0.1724 |  |
|  |  | 12/01/13 | 1.1140 | 1.1140 |  | 0.0120 | 0.0134 |  |
|  |  | 12/01/14 | 0.7016 | 0.7816 |  | -------------- | -------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.1844 | 0.1858 |  |
| * | Loss, LAE and LBA portion of 12/1/12 rate. |  |  |  |  |  | 0.7684 | 1.0172 |
| 2012 | VOL | 12/01/11 | BASE | 0.7343 | * | 0.7707 | 0.5659 |  |
|  |  | 12/01/12 | 1.2166 | 0.8933 |  | 0.0792 | 0.0707 |  |
|  |  | 12/01/13 | 0.8187 | 0.7313 |  | --------------- | ------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.8499 | 0.6366 |  |
|  |  | 12/01/11 | BASE | 1.0000 |  | 0.1382 | 0.1382 |  |
|  |  | 12/01/12 | 1.2606 | 1.2606 |  | 0.0119 | 0.0150 |  |
|  |  | 12/01/13 | 0.7815 | 0.9852 |  | ----------- | ---------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.1501 | 0.1532 |  |
| * | Loss, LAE and LBA portion of 12/1/11 rate. |  |  |  |  |  | 0.7898 | 1.2474 |
| 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 | 0.9960 | 0.8622 |  | -- | --------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.8921 | 0.6923 |  |
|  |  | 12/01/10 | BASE | 1.0000 |  | 0.1012 | 0.1012 |  |
|  |  | 12/01/11 | 1.1826 | 1.1826 |  | 0.0067 | 0.0079 |  |
|  |  | 12/01/12 | 0.9852 | 1.1651 |  | -------------- | ------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.1079 | 0.1091 |  |
| * | Loss, LAE and LBA portion of 12/1/10 rate. |  |  |  |  |  | 0.8014 | 1.4538 |
| 2010 | VOL | 12/01/09 | BASE | 0.7574 | * | 0.8561 | 0.6484 |  |
|  |  | 12/01/10 | 0.9749 | 0.7384 |  | 0.0679 | 0.0501 |  |
|  |  | 12/01/11 | 1.1216 | 0.8282 |  | ---------- | ------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.9240 | 0.6985 |  |
|  | RM | 12/01/09 | BASE | 1.0000 |  | 0.0696 | 0.0696 |  |
|  |  | 12/01/10 | 0.9594 | 0.9594 |  | 0.0064 | 0.0061 |  |
|  |  | 12/01/11 | 1.1651 | 1.1178 |  | -------------- | -------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.0760 | 0.0757 |  |
| * | Loss, LAE and LBA portion of 12/1/09 rate. |  |  |  |  |  | 0.7742 | 1.4438 |
| 2009 | VOL | 12/01/08 | BASE | 0.7511 | *** | 0.8421 | 0.6325 |  |
|  |  | 12/01/09 | 0.9160 | 0.6880 |  | 0.0789 | 0.0543 |  |
|  |  | 12/01/10 | 1.0935 | 0.7523 |  | -------- | ---------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.9210 | 0.6868 |  |
|  | RM | 12/01/08 | BASE | 1.0000 |  | 0.0743 | 0.0743 |  |
|  |  | 12/01/09 | 0.9083 | 0.9083 |  | 0.0044 | 0.0040 |  |
|  |  | 12/01/10 | 1.1178 | 1.0153 |  | -------------- | --------------- |  |
|  |  | TO 12/1/19 |  |  |  | 0.0787 | 0.0783 |  |
| * | Loss, LAE | nd LBA portio | 2/1/08 rate. |  |  |  | 0.7651 | 1.3270 |

EXHIBIT V-3
POLICY YEARS 2009-2018
INDEMNITY LOSS ON-LEVEL FACTORS


## DEVELOPMENT FACTORS



[^9]EXHIBIT VI-2

## DEVELOPMENT FACTORS

INDEMNITY LOSSES
PAID METHOD - LIMITED LOSS BASIS


## FITTED DEVELOPMENT FACTORS

INDEMNITY LOSSES


EXHIBIT VI - 4

DEVELOPMENT FACTORS
MEDICAL LOSSES
PAID METHOD - LIMITED LOSS BASIS


## FITTED DEVELOPMENT FACTORS

## MEDICAL LOSSES



## EXHIBIT VII - 1

## DETERMINATION OF TREND

## INDEMNITY

Policy Year
Actual Loss Ratio
Normalized Frequency
Severity Loss Ratio

| $\mathbf{2 0 1 2}$ | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 7}$ | $\mathbf{2 0 1 8}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0.3625 | 0.4019 | 0.3301 | 0.3278 | 0.3036 | 0.2767 | 0.2580 |
| 0.6879 | 0.7173 | 0.6127 | 0.6438 | 0.5637 | 0.5662 | 0.4918 |  |
| 0.5270 | 0.5603 | 0.5387 | 0.5092 | 0.5386 | 0.4887 | 0.5246 |  |


| $\mathbf{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{y}$ | 0.5270 | 0.5603 | 0.5387 | 0.5092 | 0.5386 | 0.4887 | 0.5246 |

7 Point Exponential Regression: $y=0.548347{ }^{*} 0.989791^{\wedge} \times$
Selected Annual Trend =
$-1.0 \%$

Trend Period \# Years to $12 / 1 / 21$
(2)

|  |  |
| :--- | :--- |
| 5.9167 | 0.9411 |
| 4.9167 | 0.9508 |
| 3.9167 | 0.9606 |
| 2.9167 | 0.9705 |

Severity
Trend Factor
$(3)=(1)^{\wedge}(2)$

Frequency

Trend Factor
(4) \#
0.7187
0.7600
0.8036
0.8497

## Trended Loss Ratio

Policy
Year

2015
2016
2017
2018

Average

Actual Loss Ratio (5)
0.3278
0.3036
0.2767
0.2580

Combined Trend Factor
$(6)=(3) *(4)$
0.6764
0.7226
0.7719
0.8246
\# See Page 24 for column (3).

## EXHIBIT VII-2

## DETERMINATION OF TREND

MEDICAL

Policy Year
Actual Loss Ratio
Normalized Frequency
Severity Loss Ratio

| $\mathbf{2 0 1 2}$ | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 7}$ | $\mathbf{2 0 1 8}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.3679 | 0.4335 | 0.3982 | 0.4017 | 0.4334 | 0.3939 | 0.3584 |
| 0.6879 | 0.7173 | 0.6127 | 0.6438 | 0.5637 | 0.5662 | 0.4918 |
| 0.5348 | 0.6043 | 0.6499 | 0.6240 | 0.7688 | 0.6957 | 0.7287 |


| $\mathbf{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{y}$ | 0.5348 | 0.6043 | 0.6499 | 0.6240 | 0.7688 | 0.6957 | 0.7287 |

7 Point Exponential Regression: $y=0.537011$ * $1.050439 \wedge x$

Trended Loss Ratio

| Policy <br> Year | Actual <br> Loss Ratio <br> $(5)$ | Combined <br> Trend Factor <br> $(6)=(3) \star(4)$ |
| :--- | :---: | :---: | | Trended |
| :---: |
| Loss Ratio |
| $(7)=(5)^{\star}(6)$ |

## EXHIBIT VII - 3

## DETERMINATION OF TREND

CLAIM FREQUENCY
Policy Year Frequency per \$1 million of Expected Losses

|  | Policy Year |  | Claim Frequency |  | Normalized Frequency |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2006 |  | 12.24 |  | 1.0000 |  |  |
|  | 2007 |  | 11.33 |  | 0.9257 |  |  |
|  | 2008 |  | 10.04 |  | 0.8203 |  |  |
|  | 2009 |  | 9.89 |  | 0.8080 |  |  |
|  | 2010 |  | 9.95 |  | 0.8129 |  |  |
|  | 2011 |  | 9.36 |  | 0.7647 |  |  |
|  | 2012 |  | 8.42 |  | 0.6879 |  |  |
|  | 2013 |  | 8.78 |  | 0.7173 |  |  |
|  | 2014 |  | 7.50 |  | 0.6127 |  |  |
|  | 2015 |  | 7.88 |  | 0.6438 |  |  |
|  | 2016 |  | 6.90 |  | 0.5637 |  |  |
|  | 2017 |  | 6.93 |  | 0.5662 |  |  |
|  | 2018 |  | 6.02 |  | 0.4918 |  |  |
| Policy Year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| x | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| y | 0.6879 | 0.7173 | 0.6127 | 0.6438 | 0.5637 | 0.5662 | 0.4918 |

7 Point (2012-2018) Exponential Regression: $y=0.759572$ * $0.945702 \wedge x$
Selected Annual Trend =
5.4\%

Policy
Year

Annual Trend Factor
(1)
0.9457
0.9457
0.9457
0.9457
\# of Years to 12/1/21
(2)
5.9167
4.9167
3.9167
2.9167

Frequency
Trend Factor
$(3)=(1)^{\wedge}(2)$
0.7187
0.7600
0.8036
0.8497

TABLE I

POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

## ACCUMULATED STANDARD EARNED PREMIUM

| 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 | 490,822,657 | 490,822,657 | 1.0000 | to 1987 | 564,297,200 | 564,297,203 | 1.0000 |
| 1986 | 73,474,543 | 73,474,543 | 1.0000 | 1987 | 85,943,515 | 85,943,515 | 1.0000 |
| 1987 | 85,943,515 | 85,943,515 | 1.0000 | 1988 | 102,949,395 | 102,949,395 | 1.0000 |
| 1988 | 102,949,395 | 102,949,395 | 1.0000 | 1989 | 110,768,371 | 110,768,371 | 1.0000 |
| 1989 | 110,768,371 | 110,768,371 | 1.0000 | 1990 | 99,948,026 | 99,947,912 | 1.0000 |
| 1990 | 99,948,026 | 99,948,026 | 1.0000 | 1991 | 95,933,003 | 95,962,865 | 1.0003 |
| 1991 | 95,915,069 | 95,933,003 | 1.0002 | 1992 | 87,086,967 | 87,086,969 | 1.0000 |
| 1992 | 87,086,900 | 87,086,967 | 1.0000 | 1993 | 87,798,331 | 87,801,353 | 1.0000 |
| 1993 | 87,798,462 | 87,798,462 | 1.0000 | 1994 | 82,331,367 | 82,320,327 | 0.9999 |
| 1994 | 82,320,327 | 82,331,367 | 1.0001 | 1995 | 78,691,441 | 78,691,441 | 1.0000 |
| 1995 | 78,691,441 | 78,691,441 | 1.0000 | 1996 | 82,672,594 | 82,678,809 | 1.0001 |
| 1996 | 82,676,981 | 82,676,970 | 1.0000 | 1997 | 81,857,161 | 81,863,105 | 1.0001 |
| 1997 | 81,880,902 | 81,880,897 | 1.0000 | 1998 | 86,443,563 | 86,448,932 | 1.0001 |
| 1998 | 86,444,445 | 86,444,449 | 1.0000 | 1999 | 80,897,648 | 80,897,648 | 1.0000 |
| 1999 | 80,901,994 | 80,901,977 | 1.0000 | 2000 | 89,553,797 | 89,553,797 | 1.0000 |
| 2000 | 89,557,126 | 89,557,124 | 1.0000 | 2001 | 88,080,811 | 88,080,811 | 1.0000 |
| 2001 | 88,128,508 | 88,128,800 | 1.0000 | 2002 | 114,192,701 | 114,192,701 | 1.0000 |
| 2002 | 114,271,524 | 114,271,531 | 1.0000 | 2003 | 129,543,523 | 129,543,523 | 1.0000 |
| 2003 | 129,614,117 | 129,614,097 | 1.0000 | 2004 | 152,893,886 | 152,895,078 | 1.0000 |
| 2004 | 153,026,014 | 153,025,990 | 1.0000 | 2005 | 186,169,392 | 186,171,051 | 1.0000 |
| 2005 | 187,894,454 | 187,894,291 | 1.0000 | 2006 | 205,773,242 | 205,776,172 | 1.0000 |
| 2006 | 207,243,931 | 207,244,065 | 1.0000 | 2007 | 199,887,660 | 199,891,429 | 1.0000 |
| 2007 | 200,008,047 | 200,004,671 | 1.0000 | 2008 | 151,069,626 | 151,013,810 | 0.9996 |
| 2008 | 151,154,980 | 151,156,239 | 1.0000 | 2009 | 118,571,401 | 118,569,653 | 1.0000 |
| 2009 | 118,689,759 | 118,689,773 | 1.0000 | 2010 | 106,015,702 | 106,009,876 | 0.9999 |
| 2010 | 106,242,308 | 106,234,512 | 0.9999 | 2011 | 105,745,325 | 105,743,602 | 1.0000 |
| 2011 | 106,335,304 | 106,364,437 | 1.0003 | 2012 | 115,084,547 | 115,247,366 | 1.0014 |
| 2012 | 115,574,875 | 115,601,320 | 1.0002 | 2013 | 135,193,150 | 135,225,120 | 1.0002 |
| 2013 | 136,106,737 | 136,015,774 | 0.9993 | 2014 | 148,219,374 | 148,064,859 | 0.9990 |
| 2014 | 147,252,615 | 149,088,245 | 1.0125 | 2015 | 145,539,422 | 146,452,216 | 1.0063 |
| 2015 | 79,465,763 | 147,372,640 | 1.8545 | 2016 | 87,557,081 | 165,480,644 | 1.8900 |
| 2016 |  | 88,216,288 |  | 2017 |  | 93,396,340 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 650,116,801 | 650,116,791 | 1.0000 | to 1989 | 752,956,395 | 752,956,400 | 1.0000 |
| 1988 | 102,949,395 | 102,949,395 | 1.0000 | 1989 | 110,749,576 | 110,749,576 | 1.0000 |
| 1989 | 110,768,371 | 110,768,371 | 1.0000 | 1990 | 99,918,040 | 99,918,040 | 1.0000 |
| 1990 | 99,934,859 | 99,934,859 | 1.0000 | 1991 | 95,943,791 | 95,964,951 | 1.0002 |
| 1991 | 95,947,530 | 95,966,485 | 1.0002 | 1992 | 87,056,863 | 87,056,863 | 1.0000 |
| 1992 | 87,086,969 | 87,086,969 | 1.0000 | 1993 | 87,770,982 | 87,770,982 | 1.0000 |
| 1993 | 87,801,353 | 87,801,353 | 1.0000 | 1994 | 82,285,706 | 82,285,706 | 1.0000 |
| 1994 | 82,320,327 | 82,320,327 | 1.0000 | 1995 | 78,654,617 | 78,654,617 | 1.0000 |
| 1995 | 78,691,441 | 78,691,441 | 1.0000 | 1996 | 82,540,859 | 82,540,859 | 1.0000 |
| ) 1996 | 82,678,809 | 82,575,994 | 0.9988 | 1997 | 81,921,802 | 81,921,802 | 1.0000 |
| 1997 | 81,863,105 | 81,965,920 | 1.0013 | 1998 | 86,403,533 | 86,403,942 | 1.0000 |
| 1998 | 86,448,932 | 86,448,932 | 1.0000 | 1999 | 80,847,508 | 80,847,926 | 1.0000 |
| 1999 | 80,897,648 | 80,897,648 | 1.0000 | 2000 | 89,482,335 | 89,482,794 | 1.0000 |
| 2000 | 89,553,605 | 89,553,605 | 1.0000 | 2001 | 88,003,203 | 88,003,203 | 1.0000 |
| 2001 | 88,074,135 | 88,074,135 | 1.0000 | 2002 | 114,130,309 | 114,130,309 | 1.0000 |
| 2002 | 114,189,999 | 114,189,999 | 1.0000 | 2003 | 129,497,030 | 129,497,030 | 1.0000 |
| 2003 | 129,540,805 | 129,540,806 | 1.0000 | 2004 | 152,848,419 | 152,848,419 | 1.0000 |
| 2004 | 152,893,519 | 152,894,012 | 1.0000 | 2005 | 186,118,336 | 186,118,337 | 1.0000 |
| 2005 | 186,170,909 | 186,171,636 | 1.0000 | 2006 | 205,712,731 | 205,717,577 | 1.0000 |
| 2006 | 205,768,543 | 205,769,722 | 1.0000 | 2007 | 199,830,762 | 199,865,396 | 1.0002 |
| 2007 | 199,891,429 | 199,893,328 | 1.0000 | 2008 | 151,065,057 | 151,069,567 | 1.0000 |
| 2008 | 151,013,810 | 151,074,601 | 1.0004 | 2009 | 118,585,410 | 118,590,101 | 1.0000 |
| 2009 | 118,569,653 | 118,585,410 | 1.0001 | 2010 | 106,106,904 | 106,116,744 | 1.0001 |
| 2010 | 106,009,876 | 106,106,904 | 1.0009 | 2011 | 105,754,587 | 105,773,822 | 1.0002 |
| 2011 | 105,743,602 | 105,754,587 | 1.0001 | 2012 | 115,258,614 | 115,267,794 | 1.0001 |
| 2012 | 115,247,366 | 115,258,614 | 1.0001 | 2013 | 135,232,793 | 135,130,720 | 0.9992 |
| 2013 | 135,225,120 | 135,232,793 | 1.0001 | 2014 | 148,028,975 | 148,049,227 | 1.0001 |
| 2014 | 148,064,859 | 148,028,975 | 0.9998 | 2015 | 146,248,253 | 146,348,416 | 1.0007 |
| 2015 | 146,452,216 | 146,248,253 | 0.9986 | 2016 | 166,693,833 | 165,860,349 | 0.9950 |
| 2016 | 165,480,644 | 166,693,833 | 1.0073 | 2017 | 176,718,905 | 177,798,697 | 1.0061 |
| 2017 | 93,396,340 | 176,718,905 | 1.8921 | 2018 | 95,664,944 | 174,630,877 | 1.8254 |
| 2018 |  | 95,938,159 |  | 2019 |  | 92,800,253 |  |

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.

INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| Policy Year Valued | As of 12/31/15 | As of <br> 12/31/16 | Ratio to Prior Year | Policy Year Valued | As of <br> 12/31/16 | As of 12/31/17 | Ratio to Prior Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prior |  |  |  | Prior |  |  |  |
| to 1986 | 237,359,733 | 237,443,712 | 1.0004 | to 1987 | 269,302,925 | 269,903,187 | 1.0022 |
| 1986 | 31,757,298 | 31,611,163 | 0.9954 | 1987 | 41,208,386 | 41,401,082 | 1.0047 |
| 1987 | 40,884,074 | 40,935,843 | 1.0013 | 1988 | 39,109,258 | 39,124,067 | 1.0004 |
| 1988 | 39,127,397 | 39,109,257 | 0.9995 | 1989 | 44,706,894 | 44,798,462 | 1.0020 |
| 1989 | 44,660,506 | 44,706,820 | 1.0010 | 1990 | 47,456,665 | 47,526,459 | 1.0015 |
| 1990 | 47,313,513 | 47,454,867 | 1.0030 | 1991 | 44,033,751 | 43,994,047 | 0.9991 |
| 1991 | 44,142,587 | 44,033,706 | 0.9975 | 1992 | 40,398,826 | 40,433,964 | 1.0009 |
| 1992 | 40,338,730 | 40,398,827 | 1.0015 | 1993 | 45,428,579 | 45,542,971 | 1.0025 |
| 1993 | 45,454,607 | 45,426,899 | 0.9994 | 1994 | 36,932,777 | 37,128,208 | 1.0053 |
| 1994 | 37,042,698 | 36,722,891 | 0.9914 | 1995 | 39,431,989 | 39,091,862 | 0.9914 |
| 1995 | 39,551,106 | 39,431,094 | 0.9970 | 1996 | 50,941,868 | 51,045,990 | 1.0020 |
| 1996 | 50,944,861 | 50,933,662 | 0.9998 | 1997 | 45,994,473 | 46,397,232 | 1.0088 |
| 1997 | 46,055,161 | 45,974,830 | 0.9983 | 1998 | 40,536,631 | 40,596,523 | 1.0015 |
| 1998 | 40,199,387 | 40,532,748 | 1.0083 | 1999 | 48,656,982 | 49,168,211 | 1.0105 |
| 1999 | 48,706,387 | 48,742,873 | 1.0007 | 2000 | 65,083,253 | 65,850,362 | 1.0118 |
| 2000 | 64,917,034 | 65,080,973 | 1.0025 | 2001 | 56,848,930 | 57,111,054 | 1.0046 |
| 2001 | 56,101,522 | 56,843,380 | 1.0132 | 2002 | 59,536,938 | 59,815,388 | 1.0047 |
| 2002 | 59,017,271 | 59,558,966 | 1.0092 | 2003 | 68,508,005 | 69,222,463 | 1.0104 |
| 2003 | 67,863,986 | 68,572,300 | 1.0104 | 2004 | 72,140,008 | 74,099,051 | 1.0272 |
| 2004 | 70,746,076 | 72,138,459 | 1.0197 | 2005 | 74,273,178 | 73,444,649 | 0.9888 |
| 2005 | 75,653,224 | 76,456,283 | 1.0106 | 2006 | 79,253,905 | 79,469,551 | 1.0027 |
| 2006 | 78,326,429 | 79,701,737 | 1.0176 | 2007 | 79,602,082 | 79,854,020 | 1.0032 |
| 2007 | 77,945,332 | 79,622,507 | 1.0215 | 2008 | 75,958,382 | 77,219,396 | 1.0166 |
| 2008 | 73,590,161 | 75,958,382 | 1.0322 | 2009 | 81,693,235 | 83,009,162 | 1.0161 |
| 2009 | 80,028,826 | 81,807,903 | 1.0222 | 2010 | 81,483,811 | 83,041,860 | 1.0191 |
| 2010 | 78,163,407 | 81,499,655 | 1.0427 | 2011 | 74,714,401 | 75,108,087 | 1.0053 |
| 2011 | 72,777,697 | 74,872,820 | 1.0288 | 2012 | 66,872,329 | 67,712,408 | 1.0126 |
| 2012 | 62,770,811 | 67,208,643 | 1.0707 | 2013 | 69,116,380 | 71,922,418 | 1.0406 |
| 2013 | 60,190,658 | 69,349,717 | 1.1522 | 2014 | 52,757,518 | 55,784,128 | 1.0574 |
| 2014 | 43,479,628 | 53,744,448 | 1.2361 | 2015 | 48,469,831 | 58,049,910 | 1.1977 |
| 2015 | 17,449,328 | 49,041,259 | 2.8105 | 2016 | 18,665,442 | 46,489,315 | 2.4907 |
| 2016 |  | 18,852,610 |  | 2017 |  | 18,326,008 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of <br> 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 311,507,648 | 310,639,357 | 0.9972 | to 1989 | 349,812,767 | 349,924,534 | 1.0003 |
| 1988 | 39,124,067 | 39,116,357 | 0.9998 | 1989 | 44,684,092 | 44,704,824 | 1.0005 |
| 1989 | 44,798,462 | 44,684,092 | 0.9974 | 1990 | 47,644,812 | 47,616,279 | 0.9994 |
| 1990 | 47,524,854 | 47,647,935 | 1.0026 | 1991 | 44,028,219 | 44,000,631 | 0.9994 |
| 1991 | 43,992,772 | 44,028,219 | 1.0008 | 1992 | 40,269,913 | 40,267,933 | 1.0000 |
| 1992 | 40,434,021 | 40,270,955 | 0.9960 | 1993 | 45,472,649 | 45,632,654 | 1.0035 |
| 1993 | 45,544,975 | 45,472,961 | 0.9984 | 1994 | 37,357,950 | 37,567,510 | 1.0056 |
| 1994 | 37,128,208 | 37,368,013 | 1.0065 | 1995 | 39,097,307 | 38,995,595 | 0.9974 |
| 1995 | 39,093,024 | 39,108,912 | 1.0004 | 1996 | 50,639,858 | 49,843,800 | 0.9843 |
| 1996 | 51,054,466 | 50,640,718 | 0.9919 | 1997 | 46,562,816 | 46,378,236 | 0.9960 |
| ) 1997 | 46,400,278 | 46,564,885 | 1.0035 | 1998 | 40,625,464 | 40,521,323 | 0.9974 |
| 1998 | 40,598,131 | 40,625,746 | 1.0007 | 1999 | 48,900,253 | 48,783,138 | 0.9976 |
| 1999 | 49,171,173 | 48,952,526 | 0.9956 | 2000 | 64,608,628 | 64,259,799 | 0.9946 |
| 2000 | 65,852,445 | 64,746,217 | 0.9832 | 2001 | 57,061,043 | 56,316,506 | 0.9870 |
| 2001 | 57,112,452 | 57,101,889 | 0.9998 | 2002 | 58,883,135 | 58,695,755 | 0.9968 |
| 2002 | 59,818,633 | 59,137,920 | 0.9886 | 2003 | 69,239,494 | 68,606,833 | 0.9909 |
| 2003 | 69,231,424 | 69,249,605 | 1.0003 | 2004 | 74,885,329 | 74,661,345 | 0.9970 |
| 2004 | 74,101,495 | 74,930,264 | 1.0112 | 2005 | 73,527,341 | 73,658,493 | 1.0018 |
| 2005 | 73,444,752 | 73,535,080 | 1.0012 | 2006 | 79,184,934 | 78,621,173 | 0.9929 |
| 2006 | 79,472,345 | 79,186,848 | 0.9964 | 2007 | 80,005,579 | 79,445,406 | 0.9930 |
| 2007 | 80,136,540 | 80,281,956 | 1.0018 | 2008 | 78,970,638 | 79,948,683 | 1.0124 |
| 2008 | 77,219,396 | 78,979,348 | 1.0228 | 2009 | 87,260,502 | 91,943,261 | 1.0537 |
| 2009 | 83,009,342 | 87,260,502 | 1.0512 | 2010 | 86,948,263 | 90,686,234 | 1.0430 |
| 2010 | 83,044,293 | 86,948,263 | 1.0470 | 2011 | 77,761,761 | 79,979,915 | 1.0285 |
| 2011 | 75,109,807 | 77,761,761 | 1.0353 | 2012 | 70,412,382 | 72,384,902 | 1.0280 |
| 2012 | 67,712,474 | 70,412,382 | 1.0399 | 2013 | 74,373,193 | 78,211,645 | 1.0516 |
| 2013 | 71,922,881 | 74,373,193 | 1.0341 | 2014 | 61,488,584 | 68,236,408 | 1.1097 |
| 2014 | 55,786,282 | 61,488,584 | 1.1022 | 2015 | 64,968,307 | 67,575,800 | 1.0401 |
| 2015 | 58,050,337 | 64,968,307 | 1.1192 | 2016 | 63,962,559 | 74,312,284 | 1.1618 |
| 2016 | 46,489,891 | 63,962,559 | 1.3758 | 2017 | 53,221,575 | 64,705,104 | 1.2158 |
| 2017 | 18,326,216 | 53,221,575 | 2.9041 | 2018 | 22,852,186 | 51,601,417 | 2.2581 |
| 2018 |  | 22,880,694 |  | 2019 |  | 22,623,165 |  |

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-HB373 basis.

POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR
INDEMNITY INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| 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 | 190,829,827 | 190,840,409 | 1.0001 | to 1987 | 215,223,258 | 215,266,277 | 1.0002 |
| 1986 | 24,307,922 | 24,158,648 | 0.9939 | 1987 | 29,967,580 | 30,162,192 | 1.0065 |
| 1987 | 29,918,915 | 29,886,315 | 0.9989 | 1988 | 28,763,957 | 28,747,466 | 0.9994 |
| 1988 | 28,799,708 | 28,763,956 | 0.9988 | 1989 | 31,316,797 | 31,240,118 | 0.9976 |
| 1989 | 31,337,492 | 31,316,797 | 0.9993 | 1990 | 33,412,196 | 33,503,977 | 1.0027 |
| 1990 | 33,456,674 | 33,411,903 | 0.9987 | 1991 | 30,661,795 | 30,569,864 | 0.9970 |
| 1991 | 30,764,975 | 30,661,795 | 0.9966 | 1992 | 26,370,931 | 26,331,966 | 0.9985 |
| 1992 | 26,426,342 | 26,370,931 | 0.9979 | 1993 | 29,972,477 | 29,987,417 | 1.0005 |
| 1993 | 30,002,010 | 29,972,477 | 0.9990 | 1994 | 23,554,271 | 23,606,362 | 1.0022 |
| 1994 | 23,615,750 | 23,477,610 | 0.9942 | 1995 | 24,397,028 | 24,387,134 | 0.9996 |
| 1995 | 24,579,705 | 24,397,028 | 0.9926 | 1996 | 30,430,261 | 30,431,523 | 1.0000 |
| 1996 | 30,409,420 | 30,426,668 | 1.0006 | 1997 | 29,152,197 | 29,128,119 | 0.9992 |
| 1997 | 29,204,576 | 29,148,751 | 0.9981 | 1998 | 25,165,314 | 25,174,957 | 1.0004 |
| 1998 | 25,142,352 | 25,165,314 | 1.0009 | 1999 | 29,756,939 | 29,836,501 | 1.0027 |
| 1999 | 29,658,089 | 29,819,626 | 1.0054 | 2000 | 38,622,753 | 38,563,469 | 0.9985 |
| 2000 | 38,783,324 | 38,622,316 | 0.9958 | 2001 | 34,018,728 | 33,861,368 | 0.9954 |
| 2001 | 34,042,454 | 34,015,657 | 0.9992 | 2002 | 33,804,322 | 33,768,477 | 0.9989 |
| 2002 | 33,836,736 | 33,821,405 | 0.9995 | 2003 | 38,839,971 | 38,791,063 | 0.9987 |
| 2003 | 38,871,092 | 38,871,219 | 1.0000 | 2004 | 39,508,295 | 39,576,443 | 1.0017 |
| 2004 | 39,302,040 | 39,508,193 | 1.0052 | 2005 | 40,036,637 | 40,190,095 | 1.0038 |
| 2005 | 41,530,784 | 41,433,793 | 0.9977 | 2006 | 44,033,524 | 44,163,669 | 1.0030 |
| 2006 | 43,931,690 | 44,294,171 | 1.0083 | 2007 | 42,765,469 | 42,538,186 | 0.9947 |
| 2007 | 42,501,415 | 42,772,948 | 1.0064 | 2008 | 38,552,085 | 38,759,211 | 1.0054 |
| 2008 | 38,421,644 | 38,552,085 | 1.0034 | 2009 | 43,247,085 | 43,970,447 | 1.0167 |
| 2009 | 42,698,487 | 43,316,857 | 1.0145 | 2010 | 38,286,685 | 39,418,941 | 1.0296 |
| 2010 | 37,473,707 | 38,287,619 | 1.0217 | 2011 | 36,871,659 | 37,184,474 | 1.0085 |
| 2011 | 36,069,936 | 36,944,438 | 1.0242 | 2012 | 34,772,157 | 35,731,420 | 1.0276 |
| 2012 | 32,225,900 | 34,985,878 | 1.0856 | 2013 | 36,424,283 | 37,523,267 | 1.0302 |
| 2013 | 31,542,747 | 36,452,541 | 1.1557 | 2014 | 26,237,534 | 28,849,118 | 1.0995 |
| 2014 | 20,963,150 | 26,779,213 | 1.2774 | 2015 | 19,224,680 | 28,076,076 | 1.4604 |
| 2015 | 6,570,700 | 19,428,654 | 2.9569 | 2016 | 7,682,739 | 19,964,398 | 2.5986 |
| 2016 |  | 7,750,242 |  | 2017 |  | 7,175,013 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 245,819,800 | 245,268,696 | 0.9978 | to 1989 | 273,737,917 | 273,761,093 | 1.0001 |
| 1988 | 28,747,466 | 28,737,390 | 0.9996 | 1989 | 31,237,378 | 31,236,843 | 1.0000 |
| 1989 | 31,240,118 | 31,237,378 | 0.9999 | 1990 | 33,539,124 | 33,517,890 | 0.9994 |
| 1990 | 33,502,136 | 33,539,733 | 1.0011 | 1991 | 30,535,809 | 30,504,463 | 0.9990 |
| 1991 | 30,568,558 | 30,535,809 | 0.9989 | 1992 | 26,302,821 | 26,257,081 | 0.9983 |
| 1992 | 26,331,966 | 26,303,076 | 0.9989 | 1993 | 29,879,574 | 29,872,227 | 0.9998 |
| 1993 | 29,987,417 | 29,879,574 | 0.9964 | 1994 | 23,710,276 | 23,765,007 | 1.0023 |
| 1994 | 23,606,362 | 23,714,832 | 1.0046 | 1995 | 24,396,550 | 24,363,904 | 0.9987 |
| 1995 | 24,387,134 | 24,402,243 | 1.0006 | 1996 | 30,174,109 | 30,032,368 | 0.9953 |
| 1996 | 30,434,995 | 30,174,269 | 0.9914 | 1997 | 29,148,756 | 29,221,284 | 1.0025 |
| ) 1997 | 29,130,042 | 29,148,866 | 1.0006 | 1998 | 25,219,384 | 25,214,321 | 0.9998 |
| 1998 | 25,174,957 | 25,219,384 | 1.0018 | 1999 | 29,701,391 | 29,701,389 | 1.0000 |
| 1999 | 29,836,501 | 29,736,681 | 0.9967 | 2000 | 38,496,613 | 38,558,755 | 1.0016 |
| 2000 | 38,563,543 | 38,584,227 | 1.0005 | 2001 | 33,856,259 | 33,789,433 | 0.9980 |
| 2001 | 33,864,339 | 33,874,264 | 1.0003 | 2002 | 33,678,178 | 33,582,678 | 0.9972 |
| 2002 | 33,768,477 | 33,712,042 | 0.9983 | 2003 | 38,797,041 | 38,606,069 | 0.9951 |
| 2003 | 38,794,766 | 38,801,758 | 1.0002 | 2004 | 39,818,328 | 39,903,283 | 1.0021 |
| 2004 | 39,577,052 | 39,838,668 | 1.0066 | 2005 | 40,156,549 | 40,257,042 | 1.0025 |
| 2005 | 40,190,132 | 40,158,182 | 0.9992 | 2006 | 44,019,850 | 44,240,293 | 1.0050 |
| 2006 | 44,166,463 | 44,020,168 | 0.9967 | 2007 | 42,559,295 | 42,652,926 | 1.0022 |
| 2007 | 42,820,133 | 42,834,891 | 1.0003 | 2008 | 39,707,812 | 39,849,686 | 1.0036 |
| 2008 | 38,759,211 | 39,708,319 | 1.0245 | 2009 | 44,898,447 | 45,462,344 | 1.0126 |
| 2009 | 43,970,447 | 44,898,447 | 1.0211 | 2010 | 39,569,653 | 40,122,052 | 1.0140 |
| 2010 | 39,419,372 | 39,569,653 | 1.0038 | 2011 | 37,917,354 | 37,909,305 | 0.9998 |
| 2011 | 37,185,031 | 37,917,354 | 1.0197 | 2012 | 36,126,331 | 36,945,367 | 1.0227 |
| 2012 | 35,731,451 | 36,126,331 | 1.0111 | 2013 | 38,414,622 | 38,966,037 | 1.0144 |
| 2013 | 37,523,397 | 38,414,622 | 1.0238 | 2014 | 30,427,313 | 31,360,276 | 1.0307 |
| 2014 | 28,850,835 | 30,427,313 | 1.0546 | 2015 | 30,746,118 | 32,274,000 | 1.0497 |
| 2015 | 28,076,328 | 30,746,118 | 1.0951 | 2016 | 28,700,759 | 32,525,372 | 1.1333 |
| 2016 | 19,964,669 | 28,700,759 | 1.4376 | 2017 | 20,750,171 | 27,662,892 | 1.3331 |
| 2017 | 7,175,048 | 20,750,171 | 2.8920 | 2018 | 8,610,073 | 20,291,478 | 2.3567 |
| 2018 |  | 8,623,272 |  | 2019 |  | 7,637,836 |  |

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-HB373 basis.


## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

MEDICAL INCURRED LOSSES EXCLUDING BULK AND IBNR RESERVES

| Policy Year Valued | As of 12/31/15 | 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 | 46,529,906 | 46,603,303 | 1.0016 | to 1987 | 54,079,667 | 54,636,910 | 1.0103 |
| 1986 | 7,449,376 | 7,452,515 | 1.0004 | 1987 | 11,240,806 | 11,238,890 | 0.9998 |
| 1987 | 10,965,159 | 11,049,528 | 1.0077 | 1988 | 10,345,301 | 10,376,601 | 1.0030 |
| 1988 | 10,327,689 | 10,345,301 | 1.0017 | 1989 | 13,390,097 | 13,558,344 | 1.0126 |
| 1989 | 13,323,014 | 13,390,023 | 1.0050 | 1990 | 14,044,469 | 14,022,482 | 0.9984 |
| 1990 | 13,856,839 | 14,042,964 | 1.0134 | 1991 | 13,371,956 | 13,424,183 | 1.0039 |
| 1991 | 13,377,612 | 13,371,911 | 0.9996 | 1992 | 14,027,895 | 14,101,998 | 1.0053 |
| 1992 | 13,912,388 | 14,027,896 | 1.0083 | 1993 | 15,456,102 | 15,555,554 | 1.0064 |
| 1993 | 15,452,597 | 15,454,422 | 1.0001 | 1994 | 13,378,506 | 13,521,846 | 1.0107 |
| 1994 | 13,426,948 | 13,245,281 | 0.9865 | 1995 | 15,034,961 | 14,704,728 | 0.9780 |
| 1995 | 14,971,401 | 15,034,066 | 1.0042 | 1996 | 20,511,607 | 20,614,467 | 1.0050 |
| 1996 | 20,535,441 | 20,506,994 | 0.9986 | 1997 | 16,842,276 | 17,269,113 | 1.0253 |
| 1997 | 16,850,585 | 16,826,079 | 0.9985 | 1998 | 15,371,317 | 15,421,566 | 1.0033 |
| 1998 | 15,057,035 | 15,367,434 | 1.0206 | 1999 | 18,900,043 | 19,331,710 | 1.0228 |
| 1999 | 19,048,298 | 18,923,247 | 0.9934 | 2000 | 26,460,500 | 27,286,893 | 1.0312 |
| 2000 | 26,133,710 | 26,458,657 | 1.0124 | 2001 | 22,830,202 | 23,249,686 | 1.0184 |
| 2001 | 22,059,068 | 22,827,723 | 1.0348 | 2002 | 25,732,616 | 26,046,911 | 1.0122 |
| 2002 | 25,180,535 | 25,737,561 | 1.0221 | 2003 | 29,668,034 | 30,431,400 | 1.0257 |
| 2003 | 28,992,894 | 29,701,081 | 1.0244 | 2004 | 32,631,713 | 34,522,608 | 1.0579 |
| 2004 | 31,444,036 | 32,630,266 | 1.0377 | 2005 | 34,236,541 | 33,254,554 | 0.9713 |
| 2005 | 34,122,440 | 35,022,490 | 1.0264 | 2006 | 35,220,381 | 35,305,882 | 1.0024 |
| 2006 | 34,394,739 | 35,407,566 | 1.0294 | 2007 | 36,836,613 | 37,315,834 | 1.0130 |
| 2007 | 35,443,917 | 36,849,559 | 1.0397 | 2008 | 37,406,297 | 38,460,185 | 1.0282 |
| 2008 | 35,168,517 | 37,406,297 | 1.0636 | 2009 | 38,446,150 | 39,038,715 | 1.0154 |
| 2009 | 37,330,339 | 38,491,046 | 1.0311 | 2010 | 43,197,126 | 43,622,919 | 1.0099 |
| 2010 | 40,689,700 | 43,212,036 | 1.0620 | 2011 | 37,842,742 | 37,923,613 | 1.0021 |
| 2011 | 36,707,761 | 37,928,382 | 1.0333 | 2012 | 32,100,172 | 31,980,988 | 0.9963 |
| 2012 | 30,544,911 | 32,222,765 | 1.0549 | 2013 | 32,692,097 | 34,399,151 | 1.0522 |
| 2013 | 28,647,911 | 32,897,176 | 1.1483 | 2014 | 26,519,984 | 26,935,010 | 1.0156 |
| 2014 | 22,516,478 | 26,965,235 | 1.1976 | 2015 | 29,245,151 | 29,973,834 | 1.0249 |
| 2015 | 10,878,628 | 29,612,605 | 2.7221 | 2016 | 10,982,703 | 26,524,917 | 2.4152 |
| 2016 |  | 11,102,368 |  | 2017 |  | 11,150,995 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 65,687,848 | 65,370,661 | 0.9952 | to 1989 | 76,074,850 | 76,163,441 | 1.0012 |
| 1988 | 10,376,601 | 10,378,967 | 1.0002 | 1989 | 13,446,714 | 13,467,981 | 1.0016 |
| 1989 | 13,558,344 | 13,446,714 | 0.9918 | 1990 | 14,105,688 | 14,098,389 | 0.9995 |
| 1990 | 14,022,718 | 14,108,202 | 1.0061 | 1991 | 13,492,410 | 13,496,168 | 1.0003 |
| 1991 | 13,424,214 | 13,492,410 | 1.0051 | 1992 | 13,967,092 | 14,010,852 | 1.0031 |
| 1992 | 14,102,055 | 13,967,879 | 0.9905 | 1993 | 15,593,075 | 15,760,427 | 1.0107 |
| 1993 | 15,557,558 | 15,593,387 | 1.0023 | 1994 | 13,647,674 | 13,802,503 | 1.0113 |
| 1994 | 13,521,846 | 13,653,181 | 1.0097 | 1995 | 14,700,757 | 14,631,691 | 0.9953 |
| 1995 | 14,705,890 | 14,706,669 | 1.0001 | 1996 | 20,465,749 | 19,811,432 | 0.9680 |
| 1996 | 20,619,471 | 20,466,449 | 0.9926 | 1997 | 17,414,060 | 17,156,952 | 0.9852 |
| - 1997 | 17,270,236 | 17,416,019 | 1.0084 | 1998 | 15,406,080 | 15,307,002 | 0.9936 |
| 1998 | 15,423,174 | 15,406,362 | 0.9989 | 1999 | 19,198,862 | 19,081,749 | 0.9939 |
| 1999 | 19,334,672 | 19,215,845 | 0.9939 | 2000 | 26,112,015 | 25,701,044 | 0.9843 |
| 2000 | 27,288,902 | 26,161,990 | 0.9587 | 2001 | 23,204,784 | 22,527,073 | 0.9708 |
| 2001 | 23,248,113 | 23,227,625 | 0.9991 | 2002 | 25,204,957 | 25,113,077 | 0.9964 |
| 2002 | 26,050,156 | 25,425,878 | 0.9760 | 2003 | 30,442,453 | 30,000,764 | 0.9855 |
| 2003 | 30,436,658 | 30,447,847 | 1.0004 | 2004 | 35,067,001 | 34,758,062 | 0.9912 |
| 2004 | 34,524,443 | 35,091,596 | 1.0164 | 2005 | 33,370,792 | 33,401,451 | 1.0009 |
| 2005 | 33,254,620 | 33,376,898 | 1.0037 | 2006 | 35,165,084 | 34,380,880 | 0.9777 |
| 2006 | 35,305,882 | 35,166,680 | 0.9961 | 2007 | 37,446,284 | 36,792,480 | 0.9825 |
| 2007 | 37,316,407 | 37,447,065 | 1.0035 | 2008 | 39,262,826 | 40,098,997 | 1.0213 |
| 2008 | 38,460,185 | 39,271,029 | 1.0211 | 2009 | 42,362,055 | 46,480,917 | 1.0972 |
| 2009 | 39,038,895 | 42,362,055 | 1.0851 | 2010 | 47,378,610 | 50,564,182 | 1.0672 |
| 2010 | 43,624,921 | 47,378,610 | 1.0860 | 2011 | 39,844,407 | 42,070,610 | 1.0559 |
| 2011 | 37,924,776 | 39,844,407 | 1.0506 | 2012 | 34,286,051 | 35,439,535 | 1.0336 |
| 2012 | 31,981,023 | 34,286,051 | 1.0721 | 2013 | 35,958,571 | 39,245,608 | 1.0914 |
| 2013 | 34,399,484 | 35,958,571 | 1.0453 | 2014 | 31,061,271 | 36,876,132 | 1.1872 |
| 2014 | 26,935,447 | 31,061,271 | 1.1532 | 2015 | 34,222,189 | 35,301,800 | 1.0315 |
| 2015 | 29,974,009 | 34,222,189 | 1.1417 | 2016 | 35,261,800 | 41,786,912 | 1.1850 |
| 2016 | 26,525,222 | 35,261,800 | 1.3294 | 2017 | 32,471,404 | 37,042,212 | 1.1408 |
| 2017 | 11,151,168 | 32,471,404 | 2.9119 | 2018 | 14,242,113 | 31,309,939 | 2.1984 |
| 2018 |  | 14,257,422 |  | 2019 |  | 14,985,329 |  |

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-HB373 basis.


## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

INDEMNITY PAID LOSSES

| 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 | 189,634,719 | 189,717,805 | 1.0004 | to 1987 | 213,827,066 | 214,023,012 | 1.0009 |
| 1986 | 23,975,835 | 23,947,072 | 0.9988 | 1987 | 29,553,014 | 29,717,974 | 1.0056 |
| 1987 | 29,597,706 | 29,553,014 | 0.9985 | 1988 | 28,688,050 | 28,681,231 | 0.9998 |
| 1988 | 28,680,050 | 28,688,050 | 1.0003 | 1989 | 31,116,893 | 31,007,703 | 0.9965 |
| 1989 | 31,115,341 | 31,116,893 | 1.0000 | 1990 | 32,614,673 | 32,649,329 | 1.0011 |
| 1990 | 32,575,098 | 32,614,380 | 1.0012 | 1991 | 30,485,603 | 30,517,114 | 1.0010 |
| 1991 | 30,466,135 | 30,485,603 | 1.0006 | 1992 | 26,309,675 | 26,290,729 | 0.9993 |
| 1992 | 26,349,762 | 26,309,675 | 0.9985 | 1993 | 29,549,447 | 29,650,153 | 1.0034 |
| 1993 | 29,517,212 | 29,549,447 | 1.0011 | 1994 | 23,173,927 | 23,198,975 | 1.0011 |
| 1994 | 22,890,172 | 23,097,266 | 1.0090 | 1995 | 24,208,012 | 24,227,378 | 1.0008 |
| 1995 | 24,203,873 | 24,208,012 | 1.0002 | 1996 | 29,791,443 | 29,839,256 | 1.0016 |
| 1996 | 29,701,840 | 29,791,443 | 1.0030 | 1997 | 28,641,626 | 28,782,452 | 1.0049 |
| 1997 | 28,664,930 | 28,641,626 | 0.9992 | 1998 | 24,880,162 | 25,046,205 | 1.0067 |
| 1998 | 24,818,129 | 24,880,162 | 1.0025 | 1999 | 29,566,301 | 29,692,585 | 1.0043 |
| 1999 | 29,314,538 | 29,628,988 | 1.0107 | 2000 | 37,428,727 | 37,873,322 | 1.0119 |
| 2000 | 37,343,708 | 37,428,727 | 1.0023 | 2001 | 32,965,669 | 33,040,483 | 1.0023 |
| 2001 | 32,777,931 | 32,965,669 | 1.0057 | 2002 | 33,544,945 | 33,546,970 | 1.0001 |
| 2002 | 33,519,419 | 33,562,029 | 1.0013 | 2003 | 37,191,467 | 37,520,888 | 1.0089 |
| 2003 | 36,955,942 | 37,225,277 | 1.0073 | 2004 | 38,579,689 | 38,806,919 | 1.0059 |
| 2004 | 38,404,399 | 38,579,689 | 1.0046 | 2005 | 39,179,515 | 39,416,968 | 1.0061 |
| 2005 | 39,457,524 | 40,576,671 | 1.0284 | 2006 | 41,712,218 | 42,325,534 | 1.0147 |
| 2006 | 41,047,665 | 41,976,011 | 1.0226 | 2007 | 39,582,518 | 40,021,993 | 1.0111 |
| 2007 | 38,151,658 | 39,590,327 | 1.0377 | 2008 | 35,970,447 | 36,730,741 | 1.0211 |
| 2008 | 35,298,291 | 35,970,447 | 1.0190 | 2009 | 37,613,251 | 40,284,114 | 1.0710 |
| 2009 | 35,556,416 | 37,683,023 | 1.0598 | 2010 | 34,681,222 | 36,501,418 | 1.0525 |
| 2010 | 32,981,908 | 34,684,372 | 1.0516 | 2011 | 32,768,341 | 34,503,868 | 1.0530 |
| 2011 | 31,155,723 | 32,841,695 | 1.0541 | 2012 | 28,522,194 | 31,262,124 | 1.0961 |
| 2012 | 23,271,764 | 28,715,420 | 1.2339 | 2013 | 25,930,102 | 31,380,316 | 1.2102 |
| 2013 | 18,802,942 | 25,959,141 | 1.3806 | 2014 | 16,214,457 | 22,831,789 | 1.4081 |
| 2014 | 8,455,931 | 16,442,115 | 1.9444 | 2015 | 8,708,720 | 18,707,734 | 2.1482 |
| 2015 | 1,788,691 | 8,805,504 | 4.9229 | 2016 | 1,366,646 | 8,082,004 | 5.9138 |
| 2016 |  | 1,389,968 |  | 2017 |  | 1,774,309 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 244,155,620 | 244,243,229 | 1.0004 | to 1989 | 272,724,848 | 272,760,356 | 1.0001 |
| 1988 | 28,681,231 | 28,680,639 | 1.0000 | 1989 | 30,998,771 | 31,032,967 | 1.0011 |
| 1989 | 31,007,703 | 30,998,771 | 0.9997 | 1990 | 32,695,529 | 32,726,331 | 1.0009 |
| 1990 | 32,647,488 | 32,696,138 | 1.0015 | 1991 | 30,502,380 | 30,488,384 | 0.9995 |
| 1991 | 30,515,808 | 30,502,380 | 0.9996 | 1992 | 26,267,918 | 26,219,626 | 0.9982 |
| 1992 | 26,290,729 | 26,268,173 | 0.9991 | 1993 | 29,714,718 | 29,756,925 | 1.0014 |
| 1993 | 29,650,153 | 29,714,718 | 1.0022 | 1994 | 23,285,968 | 23,333,987 | 1.0021 |
| 1994 | 23,198,975 | 23,290,524 | 1.0039 | 1995 | 24,248,017 | 24,275,476 | 1.0011 |
| 1995 | 24,227,378 | 24,253,710 | 1.0011 | 1996 | 29,867,559 | 29,821,589 | 0.9985 |
| 1996 | 29,839,256 | 29,867,719 | 1.0010 | 1997 | 28,826,417 | 28,917,882 | 1.0032 |
| - 1997 | 28,782,452 | 28,826,527 | 1.0015 | 1998 | 25,071,884 | 25,112,649 | 1.0016 |
| 1998 | 25,046,205 | 25,071,884 | 1.0010 | 1999 | 29,687,328 | 29,687,469 | 1.0000 |
| 1999 | 29,692,585 | 29,722,618 | 1.0010 | 2000 | 37,859,045 | 38,042,474 | 1.0048 |
| 2000 | 37,873,322 | 37,946,659 | 1.0019 | 2001 | 33,077,697 | 33,012,720 | 0.9980 |
| 2001 | 33,040,483 | 33,095,702 | 1.0017 | 2002 | 33,524,854 | 33,456,740 | 0.9980 |
| 2002 | 33,546,970 | 33,558,718 | 1.0004 | 2003 | 37,694,650 | 37,783,234 | 1.0024 |
| 2003 | 37,520,888 | 37,699,367 | 1.0048 | 2004 | 39,133,098 | 39,298,549 | 1.0042 |
| 2004 | 38,806,919 | 39,153,438 | 1.0089 | 2005 | 39,487,055 | 39,551,747 | 1.0016 |
| 2005 | 39,416,968 | 39,488,688 | 1.0018 | 2006 | 42,536,063 | 43,037,341 | 1.0118 |
| 2006 | 42,325,534 | 42,536,381 | 1.0050 | 2007 | 40,921,507 | 41,390,588 | 1.0115 |
| 2007 | 40,021,993 | 40,921,507 | 1.0225 | 2008 | 38,065,269 | 38,595,421 | 1.0139 |
| 2008 | 36,730,741 | 38,065,776 | 1.0363 | 2009 | 41,627,935 | 41,996,098 | 1.0088 |
| 2009 | 40,284,114 | 41,627,935 | 1.0334 | 2010 | 37,702,204 | 38,498,196 | 1.0211 |
| 2010 | 36,501,418 | 37,702,204 | 1.0329 | 2011 | 36,218,736 | 36,951,629 | 1.0202 |
| 2011 | 34,503,868 | 36,218,736 | 1.0497 | 2012 | 32,601,029 | 33,881,021 | 1.0393 |
| 2012 | 31,262,124 | 32,601,029 | 1.0428 | 2013 | 34,247,696 | 35,672,970 | 1.0416 |
| 2013 | 31,380,316 | 34,247,696 | 1.0914 | 2014 | 26,493,593 | 28,091,047 | 1.0603 |
| 2014 | 22,831,789 | 26,493,593 | 1.1604 | 2015 | 24,663,137 | 28,475,986 | 1.1546 |
| 2015 | 18,707,734 | 24,663,137 | 1.3183 | 2016 | 16,194,327 | 23,190,828 | 1.4320 |
| 2016 | 8,082,004 | 16,194,327 | 2.0038 | 2017 | 9,809,149 | 17,878,010 | 1.8226 |
| 2017 | 1,774,309 | 9,809,149 | 5.5284 | 2018 | 1,660,445 | 8,100,242 | 4.8784 |
| 2018 |  | 1,669,404 |  | 2019 |  | 1,891,396 |  |

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-HB373 basis.


## POLICY YEAR DATA ACCUMULATED TO END OF CALENDAR YEAR

MEDICAL PAID LOSSES

| 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 | 44,622,260 | 44,973,568 | 1.0079 | to 1987 | 52,165,237 | 52,482,698 | 1.0061 |
| 1986 | 7,257,401 | 7,269,882 | 1.0017 | 1987 | 10,347,241 | 10,441,192 | 1.0091 |
| 1987 | 10,200,697 | 10,347,241 | 1.0144 | 1988 | 10,266,283 | 10,271,062 | 1.0005 |
| 1988 | 10,251,948 | 10,266,283 | 1.0014 | 1989 | 13,096,681 | 13,275,886 | 1.0137 |
| 1989 | 13,056,736 | 13,096,681 | 1.0031 | 1990 | 12,797,686 | 12,910,165 | 1.0088 |
| 1990 | 12,740,281 | 12,796,358 | 1.0044 | 1991 | 13,176,793 | 13,232,662 | 1.0042 |
| 1991 | 13,137,222 | 13,176,793 | 1.0030 | 1992 | 13,778,696 | 13,809,256 | 1.0022 |
| 1992 | 13,723,672 | 13,778,696 | 1.0040 | 1993 | 14,390,133 | 14,522,907 | 1.0092 |
| 1993 | 14,241,867 | 14,390,133 | 1.0104 | 1994 | 12,734,229 | 12,809,511 | 1.0059 |
| 1994 | 12,486,172 | 12,601,004 | 1.0092 | 1995 | 13,886,651 | 13,941,070 | 1.0039 |
| 1995 | 13,802,888 | 13,886,651 | 1.0061 | 1996 | 17,937,305 | 18,111,886 | 1.0097 |
| 1996 | 17,682,535 | 17,937,305 | 1.0144 | 1997 | 15,503,069 | 15,603,553 | 1.0065 |
| 1997 | 15,221,998 | 15,503,069 | 1.0185 | 1998 | 14,250,595 | 14,548,217 | 1.0209 |
| 1998 | 14,046,899 | 14,250,595 | 1.0145 | 1999 | 17,724,351 | 17,784,582 | 1.0034 |
| 1999 | 17,636,509 | 17,749,006 | 1.0064 | 2000 | 23,688,670 | 23,844,465 | 1.0066 |
| 2000 | 23,486,993 | 23,688,670 | 1.0086 | 2001 | 19,331,427 | 19,617,892 | 1.0148 |
| 2001 | 18,745,930 | 19,331,427 | 1.0312 | 2002 | 23,373,117 | 23,678,184 | 1.0131 |
| 2002 | 23,044,714 | 23,380,445 | 1.0146 | 2003 | 24,736,599 | 25,529,535 | 1.0321 |
| 2003 | 24,249,779 | 24,771,417 | 1.0215 | 2004 | 28,285,322 | 28,780,731 | 1.0175 |
| 2004 | 27,736,164 | 28,285,464 | 1.0198 | 2005 | 28,353,253 | 28,859,689 | 1.0179 |
| 2005 | 27,929,150 | 29,139,203 | 1.0433 | 2006 | 29,453,418 | 30,091,005 | 1.0216 |
| 2006 | 28,447,557 | 29,640,269 | 1.0419 | 2007 | 30,725,569 | 31,941,430 | 1.0396 |
| 2007 | 29,788,039 | 30,739,324 | 1.0319 | 2008 | 30,578,198 | 31,296,851 | 1.0235 |
| 2008 | 29,346,111 | 30,578,198 | 1.0420 | 2009 | 32,638,184 | 34,028,790 | 1.0426 |
| 2009 | 30,742,532 | 32,683,086 | 1.0631 | 2010 | 35,771,044 | 37,231,905 | 1.0408 |
| 2010 | 34,223,740 | 35,787,824 | 1.0457 | 2011 | 31,405,964 | 33,188,935 | 1.0568 |
| 2011 | 30,947,408 | 31,493,505 | 1.0176 | 2012 | 27,042,973 | 28,818,274 | 1.0656 |
| 2012 | 25,024,783 | 27,155,216 | 1.0851 | 2013 | 27,651,527 | 29,684,134 | 1.0735 |
| 2013 | 23,419,192 | 27,844,970 | 1.1890 | 2014 | 20,696,093 | 23,611,970 | 1.1409 |
| 2014 | 14,981,328 | 21,070,076 | 1.4064 | 2015 | 19,327,070 | 25,838,121 | 1.3369 |
| 2015 | 5,129,908 | 19,564,519 | 3.8138 | 2016 | 4,297,125 | 18,199,896 | 4.2354 |
| 2016 |  | 4,336,725 |  | 2017 |  | 4,403,048 |  |
| Policy Year Valued | As of 12/31/17 | As of 12/31/18 | Ratio to Prior Year | Policy Year Valued | As of 12/31/18 | As of 12/31/19 | Ratio to Prior Year |
| Prior |  |  |  | Prior |  |  |  |
| to 1988 | 62,693,105 | 63,016,184 | 1.0052 | to 1989 | 73,485,256 | 73,784,420 | 1.0041 |
| 1988 | 10,271,062 | 10,288,887 | 1.0017 | 1989 | 13,305,830 | 13,424,763 | 1.0089 |
| 1989 | 13,275,886 | 13,305,830 | 1.0023 | 1990 | 12,988,079 | 13,110,636 | 1.0094 |
| 1990 | 12,910,165 | 12,990,593 | 1.0062 | 1991 | 13,307,183 | 13,333,112 | 1.0019 |
| 1991 | 13,232,662 | 13,307,183 | 1.0056 | 1992 | 13,830,394 | 13,881,194 | 1.0037 |
| 1992 | 13,809,256 | 13,831,181 | 1.0016 | 1993 | 14,849,509 | 15,015,744 | 1.0112 |
| 1993 | 14,522,907 | 14,849,821 | 1.0225 | 1994 | 12,878,952 | 12,897,823 | 1.0015 |
| 1994 | 12,809,511 | 12,884,459 | 1.0059 | 1995 | 13,989,179 | 14,086,447 | 1.0070 |
| 1995 | 13,941,070 | 13,995,091 | 1.0039 | 1996 | 18,274,535 | 18,309,188 | 1.0019 |
| 1996 | 18,111,886 | 18,275,235 | 1.0090 | 1997 | 15,839,244 | 16,094,383 | 1.0161 |
| - 1997 | 15,603,553 | 15,841,203 | 1.0152 | 1998 | 14,613,013 | 14,684,831 | 1.0049 |
| 1998 | 14,548,217 | 14,613,295 | 1.0045 | 1999 | 18,024,026 | 18,050,561 | 1.0015 |
| 1999 | 17,784,582 | 18,041,009 | 1.0144 | 2000 | 23,941,716 | 24,205,479 | 1.0110 |
| 2000 | 23,844,413 | 23,991,691 | 1.0062 | 2001 | 19,780,353 | 20,026,916 | 1.0125 |
| 2001 | 19,613,217 | 19,803,194 | 1.0097 | 2002 | 23,808,627 | 23,918,499 | 1.0046 |
| 2002 | 23,678,158 | 24,029,548 | 1.0148 | 2003 | 26,153,591 | 26,634,222 | 1.0184 |
| 2003 | 25,529,535 | 26,158,985 | 1.0247 | 2004 | 29,435,634 | 29,898,096 | 1.0157 |
| 2004 | 28,780,731 | 29,460,229 | 1.0236 | 2005 | 29,156,001 | 29,657,989 | 1.0172 |
| 2005 | 28,859,689 | 29,162,107 | 1.0105 | 2006 | 30,660,984 | 30,867,041 | 1.0067 |
| 2006 | 30,091,005 | 30,662,580 | 1.0190 | 2007 | 32,324,549 | 33,088,859 | 1.0236 |
| 2007 | 31,941,430 | 32,325,328 | 1.0120 | 2008 | 32,258,826 | 33,051,449 | 1.0246 |
| 2008 | 31,296,851 | 32,267,029 | 1.0310 | 2009 | 35,053,377 | 35,757,344 | 1.0201 |
| 2009 | 34,028,790 | 35,053,377 | 1.0301 | 2010 | 38,474,016 | 39,182,391 | 1.0184 |
| 2010 | 37,231,905 | 38,474,016 | 1.0334 | 2011 | 34,008,811 | 34,378,635 | 1.0109 |
| 2011 | 33,188,935 | 34,008,811 | 1.0247 | 2012 | 29,749,407 | 30,628,239 | 1.0295 |
| 2012 | 28,818,274 | 29,749,407 | 1.0323 | 2013 | 31,459,971 | 32,302,350 | 1.0268 |
| 2013 | 29,684,134 | 31,459,971 | 1.0598 | 2014 | 24,837,126 | 25,785,752 | 1.0382 |
| 2014 | 23,611,970 | 24,837,126 | 1.0519 | 2015 | 28,138,946 | 29,229,793 | 1.0388 |
| 2015 | 25,838,121 | 28,138,946 | 1.0890 | 2016 | 24,948,912 | 27,508,910 | 1.1026 |
| 2016 | 18,199,896 | 24,948,912 | 1.3708 | 2017 | 18,191,832 | 24,334,702 | 1.3377 |
| 2017 | 4,403,048 | 18,191,832 | 4.1316 | 2018 | 4,323,038 | 15,508,644 | 3.5874 |
| 2018 |  | 4,324,898 |  | 2019 |  | 4,276,736 |  |

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-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, 2020 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, 2020 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, 2020 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, 2020 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, 2021 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 2017 to 2019 Market Profile Report Data


[^10]
## 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) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Manufacturing and Utilities |  |  |  |  |  |  |  |
| 2016 | 1.0098 | 1.0000 | 1.5350 | 2.0050 | 1.1288 | 3.5081 | 0.2851 |
| 2017 | 1.0135 | 1.0000 | 1.7870 | 2.0050 | 1.0939 | 3.9723 | 0.2517 |
| 2018 | 1.0085 | 1.0000 | 2.4113 | 2.0050 | 1.0609 | 5.1727 | 0.1933 |
| Contracting and Quarrying |  |  |  |  |  |  |  |
| 2016 | 1.0098 | 1.0000 | 1.4871 | 1.9287 | 1.1288 | 3.2693 | 0.3059 |
| 2017 | 1.0135 | 1.0000 | 1.9543 | 1.9287 | 1.0939 | 4.1789 | 0.2393 |
| 2018 | 1.0085 | 1.0000 | 2.4818 | 1.9287 | 1.0609 | 5.1213 | 0.1953 |
| Other Industries |  |  |  |  |  |  |  |
| 2016 | 1.0098 | 1.0000 | 1.5808 | 1.7013 | 1.1288 | 3.0656 | 0.3262 |
| 2017 | 1.0135 | 1.0000 | 1.8334 | 1.7013 | 1.0939 | 3.4581 | 0.2892 |
| 2018 | 1.0085 | 1.0000 | $2.4447$ | $1.7013$ | 1.0609 | 4.4500 | 0.2247 |

** Permissible Loss Ratio = Collectible Premium Ratios Manufacturing $=$

Contracting = All Other =
0.5443
1.0913
1.0498
0.9260

## EXHIBIT XI

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

## Expense Provisions for OIT U.S.L. \& H.W. Classes

| Losses | 54.43 |
| :--- | ---: |
| Loss Adjustment Expense | 14.23 |
| Loss \& Loss Adjustment | 68.66 |
| Premium Discount | 8.59 |
| Acquisition | 7.49 |
| General Expenses | 2.84 |
| Profit and Contingencies | 2.60 |
| Taxes | 2.32 |
| Uncollectible Premium | 2.30 |
| Workers' Compensation Fund | 2.00 |
| Administrative Assessment | 3.20 |

If
$\mathrm{T}=$ Tax multiplier
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:


$$
A=0.0564=0.0588 \quad x \quad \frac{1-0.0434-0.0662}{1-0.0058-0.0662}
$$

Then
$T=\frac{E+L(1+C+A)}{E+L(1+C)} \times \frac{1}{1-B-S}$
$S=\quad$ Delaware Insurance Plan Subsidy $=0.0121$
$T=\frac{0.0434+0.5443(1+0.2614+0.0564)}{0.0434+0.5443(1+0.2614)} \times \frac{1}{1-0.0662-0.0121}=1.1306$

## 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 $=$ | 0.5944 |
| :--- | :--- | :--- |
| Second Adjustment | RDF $=$ | 0.4615 |
| Third Adjustment | RDF $=$ | 0.3581 |

For those companies using retrospective development factors with loss limitations, the following formula may be used.
RDF(LIM) $=(1.0-E L F) \times$ 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 = 0.603
First Adjustment RDF $=\quad(1-0.603) * 0.5944=0.2360$

* The use of retrospective development factors is optional.


[^0]:    * 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.

[^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]:    * Selected

[^10]:    * Excludes classifications and coverages not subject to experience rating.

