

**COAL MINE COMPENSATION RATING BUREAU
OF PENNSYLVANIA**

COMMERCE BUILDING – SUITE 403
300 NORTH SECOND STREET
HARRISBURG, PENNSYLVANIA 17101

CHARLES A. ROMBERGER
EXECUTIVE DIRECTOR

TELEPHONE/FAX
717-238-5020

November 25, 2019

The Honorable Jessica K. Altman
Insurance Commissioner
Pennsylvania Insurance Department
1311 Strawberry Square
Harrisburg, PA 17120

Attention: Michael McKenney, Actuarial Supervisor, Property & Casualty Bureau

RE: Proposal CM-3-2019
Revised Loss Costs for Traumatic, State Occupational Disease
And Federal Occupational Disease
To Be Effective: April 1, 2020

Dear Commissioner Altman:

Enclosed for your review and approval is the annual filing of Loss Costs by the Coal Mine Compensation Rating Bureau of Pennsylvania (“Bureau”). This filing is made in accordance with Article VII of the Pennsylvania Workers’ Compensation Act.

Exhibit I-A-M displays the proposed changes by classification and by coverage. Overall, the proposed change in Manual Loss Costs is -1.3%. By coverage, the proposal requests a change of -1.6% for Traumatic, a change of 7.7% for State Occupational Disease (“SOD”) and a change of -5.9% for Federal Occupational Disease (“FOD”).

The Proposed Traumatic Loss Costs are decreasing overall by \$0.09 from \$5.71 to \$5.62. The overall experience is being driven by the following considerations:

- Indemnity Loss Development Factors changed modestly
 - The largest increase was 0.4% for Accident Year for 2014 and
 - The largest decrease was 4.0% for Accident Year 2018.
- Indemnity Loss Trend Annual Factor decreased from 1.4% to 1.1%. Consequently, Indemnity Loss Trend Factors decreased by 0.8% to 2.0%.
- The uniform HB 1840 Adjustment Factor of 1.0159 was replaced by Adjustment Factors that vary by Accident Year. This adjustment is included with the Indemnity Loss Trend Factors. On a combined basis, the changes to the Indemnity Loss Trend Factors range from -1.5% to -2.1% from newer to older Accident Years.
- Medical Loss Development Factors decreased for all years ranging from -0.3% for Accident Year 2014 to -4.8% for Accident Year 2018.
- Medical Loss Trend Annual Factor increased from 1.0% to 2.1%. Consequently, Medical Loss Trend Factors increased by 3.0% to 7.6%.
- The replacement of Accident Year 2013 experience with Accident Year 2018 experience in the five (5) year Traumatic Loss Cost analysis.

- For the April 1, 2019 filing, the Accident Year 2013 Loss Cost was estimated to be \$4.51.
- For the April 1, 2020 filing, the Accident Year 2018 Loss Cost is estimated to be \$5.54 with both Indemnity and Medical components increasing significantly.

The Proposed SOD Loss Costs are increasing overall by \$0.04 from \$0.52 to \$0.56. The overall experience is being driven by the following considerations.

- For all classes combined, claim frequency changed by 14.6%.
- For all classes combined, claim severity changed by -0.3%.
- Note that the overall change is less than the combined frequency-severity change due to individual class capping at +/-25%.

The Proposed FOD Loss Costs are decreasing overall by \$0.04 from \$0.68 to \$0.64. The overall experience is being driven by the following considerations.

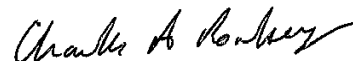
- For all classes combined, Basic claim frequency changed by -10.8%.
- For all classes combined, Excess claim frequency changed by 11.2%.
- For all classes combined, Basic claim severity changed by 0.3%.
- For all classes combined, Excess claim severity changed by 1.1%.

This Proposal consists of this cover letter, the enclosed Actuarial Report with Appendices A and B and Filing Exhibits. The Filing Exhibits were prepared for the Bureau by Mr. Peter A. Bennett who has extensive experience in this regard. This cover letter and Actuarial Report follow the organization that was used in last year's filing. The Filing Exhibits are unchanged from last year's filing, except where noted in the Summary of Significant Changes section of the Actuarial Report.

We ask for your approval of this filing on or before February 1, 2020. An approval in this timeframe facilitates the required notices and advanced issuance of revised employer rate cards, noting the applicable loss costs and rating plan values.

The Bureau and its consultant will be pleased to discuss any issues raised by the Department. Please feel free to contact me if additional information or discussion is necessary.

Sincerely,



Charles A. Romberger
Executive Director

Enclosures:

- 1) Three (3) printed copies of the filing (Cover letter, Actuarial Report and Filing Exhibits)
- 2) One (1) electronic copy of the filing on CD in PDF file format
- 3) One (1) electronic copy of the filing Exhibits on CD in Excel file format

**Actuarial Report
Regarding the CMCRB's April 1, 2020 Loss Cost Filing**

Introduction

I, Charles A. ("Chuck") Romberger, am the Executive Director of the Coal Mine Compensation Rating Bureau of Pennsylvania ("CMCRB"). I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. I offer this report in support of the CMCRB's proposed April 1, 2020 Loss Cost Filing. In this filing, the CMCRB proposes revisions to Loss Costs for Traumatic, State Occupational Disease ("SOD") and Federal Occupational Disease ("FOD") classifications under the CMCRB's jurisdiction to be effective April 1, 2020.

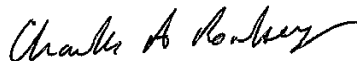
This report and the associated filing exhibits present information that demonstrate the fairness and reasonability of the proposed loss costs and show the CMCRB's continued use of accepted actuarial procedures and application of sound actuarial judgment.

I note that Mr. Peter A. Bennett participated in the preparation of this report and the associated Filing Exhibits. Mr. Bennett has extensive experience in this regard.

The remainder of this report consists of the following sections:

- The Executive Summary provides a discussion about the overall changes in Loss Costs and the sources of those changes contained in this filing by coverage (i.e., Traumatic, SOD and FOD). It also identifies "Other Items" that are typically of interest (e.g., the Employer Assessment Factor).
- The Summary of Significant Changes identifies and briefly discusses the significant changes in methods and assumptions from the CMCRB's prior loss cost filing.
- The Discussion of Filing Exhibits addresses the content of all of the Filing Exhibits and is arranged in Filing Exhibit order.
- The Disclosures section identifies and briefly discusses topics that broadly apply to all areas of this report and that present considerations or limitations related to the use of these findings.
- Appendix A provides a discussion and exhibits in support of the CMCRB's adjustments for House Bill 1846 of 2014 (HB 1846).
- Appendix B provides a discussion and exhibits in support of the CMCRB's adjustments concerning House Bill 1840 (HB 1840 or Act 111 of 2018), the legislative response to the Pennsylvania Supreme Court's decision in Protz v. WCAB.

Sincerely,



Charles A. Romberger, ACAS, MAAA, CPCU, ARM
Executive Director, CMCRB

Executive Summary

This report and the associated filing exhibits provide the CMCRB's proposal for loss costs to be effective on April 1, 2020, which is twelve (12) months from the last approved loss costs. The proposed loss costs are based on the annual review of data by coverage (i.e., Traumatic, SOD, and FOD – Basic and Excess) and by classification for the ten (10) coal mine classifications under the CMCRB's jurisdiction.

For all classifications combined, this filing proposes the following changes in loss costs by coverage and in Total (i.e., all coverages combined). This information can also be found on Exhibit I-A-M, Page 2 (Grand Total section).

	<u>Current Loss Cost</u>	<u>Proposed Loss Cost</u>	<u>Change in Loss Costs</u>
Traumatic	\$ 5.71	\$ 5.62	-1.6%
SOD	0.52	0.56	7.7%
<u>FOD (Basic & Excess)</u>	<u>0.68</u>	<u>0.64</u>	<u>-5.9%</u>
Total	\$6.91	\$6.82	-1.3%

The remainder of this Executive Summary provides a discussion section for each type of coverage and a discussion section for "Other Items".

Traumatic Loss Costs

The Current Traumatic Loss Cost for all classes combined is \$5.71 based on 2018 payroll distribution. The Proposed level is \$5.62 or a change of -1.6%.

The key drivers of the change to Traumatic Loss Costs can be identified by comparing Exhibit V-B Page 1 for the April 1, 2020 filing to the April 1, 2019 filing. These drivers include:

- Indemnity Loss Development Factors changed modestly
 - The largest increase was 0.4% for Accident Year for 2014 and
 - The largest decrease was 4.0% for Accident Year 2018.
- Indemnity Loss Trend Annual Factor decreased from 1.4% to 1.1%. Consequently, Indemnity Loss Trend Factors decreased by 0.8% to 2.0%.
- The uniform HB 1840 Adjustment Factor of 1.0159 was replaced by Adjustment Factors that vary by Accident Year. This adjustment is included with the Indemnity Loss Trend Factors. On a combined basis, the changes to the Indemnity Loss Trend Factors range from -1.5% to -2.1% from newer to older Accident Years.
- Medical Loss Development Factors decreased for all years ranging from -0.3% for Accident Year 2014 to -4.8% for Accident Year 2018.
- Medical Loss Trend Annual Factor increased from 1.0% to 2.1%. Consequently, Medical Loss Trend Factors increased by 3.0% to 7.6%.
- The replacement of Accident Year 2013 experience with Accident Year 2018 experience in the five (5) year Traumatic Loss Cost analysis.
 - For the April 1, 2019 filing, the Accident Year 2013 Loss Cost was estimated to be \$4.51.

- For the April 1, 2020 filing, the Accident Year 2018 Loss Cost is estimated to be \$5.54 with both Indemnity and Medical components increasing significantly.

These drivers generally decrease the Indemnity indications and increase the Medical indications. The Indemnity indication changed by -3.0%, from \$3.70 to \$3.59; while the Medical indication changed by 4.3%, from \$1.85 to \$1.93. Prior to the application of credibility and capping changes at +/- 25% by class, the Total Traumatic indication changed by -0.7%, from \$5.55 to \$5.51. The Total indication may not equal the sum of the parts due to rounding.

Credibility and capping procedures are applied on Exhibit V-A Page 1 to the Indicated Unloaded Loss Costs to produce the Proposed Unloaded Loss Costs which are also displayed on Exhibit II. Exhibit II shows the Proposed Unloaded Loss Costs Percent Change (after Credibility and Capping) for all classes combined is -2.0%. Also, the totals on Exhibit II are the result of using payroll for the most recent accident year as weights while the totals on Exhibit V-B Page 1 are the result of using payroll for the most recent five (5) accident years as weights. This result includes capping the change to the Anthracite Co-Gen class at +25%.

State Occupational Disease (SOD) Loss Costs

The Current State Occupational Disease Loss Cost for all classes combined is \$0.52 based on 2018 payroll distribution. The Proposed level is \$0.56 or a change of 7.7%.

The key drivers of this change can be identified by comparing Exhibit III for the April 1, 2020 filing to the April 1, 2019 filing. These drivers include:

- For all classes combined, claim frequency changed by 14.6%.
 - Claim frequency increased for three of the Major Four classes and decreased for four of the other six classes.
- For all classes combined, claim severity changed by -0.3%.
 - Claim severity increased for six classes and decreased for four classes.
- The Proposed Loss Costs for Anthracite Underground and Bituminous Surface are capped at +25%. Also, the net change in Proposed Loss Costs does not equal the product of the claim frequency change and claim severity change because of the capping at +/- 25%.

Federal Occupational Disease (FOD) – Basic/Excess – Loss Costs

The Current Federal Occupational Disease Basic/Excess Loss Cost for all classes combined is \$0.68 based on 2018 payroll distribution. The Proposed level is \$0.64 or a change of -5.9%.

The Federal component of the filing consists of two parts, the Federal Basic and the Federal Excess as follows:

	<u>Current Loss Cost</u>	<u>Proposed Loss Cost</u>	<u>Change in Loss Costs</u>
Basic	\$ 0.56	\$ 0.51	-8.9%
<u>Excess</u>	<u>0.12</u>	<u>0.13</u>	<u>+8.3%</u>
Total	\$0.68	\$0.64	-5.9%

The Proposed Loss Costs are shown in Column (5) of Exhibit IV-A separately for Basic and Excess and in Total. The Currently Approved Unloaded Loss Costs are shown in Total (i.e., Basic and Excess combined) in Column (2) of Exhibit IV-A. The Total Current Loss Cost is split between Basic and Excess components using the Basic and Excess Loss Costs from Column (5) of Exhibit IV-A from the prior filing as weights.

The key drivers of this change can be identified by comparing Exhibit IV-A for the April 1, 2020 filing to the April 1, 2019 filing. These drivers include:

- For all classes combined, Basic claim frequency changed by -10.8%.
- For all classes combined, Excess claim frequency changed by 11.2%.
- For all classes combined, Basic claim severity changed by 0.3%.
- For all classes combined, Excess claim severity changed by 1.1%.
- The net change in Proposed Loss Costs does not equal the product of the claim frequency change and claim severity change because these three values do not all carry the same number of significant digits.

Other Items

- The Small Business Advocate Assessment Ratio remains at 0.0001. (See Exhibit XI.) This amount is loaded into the CMCRB's Manual Loss Costs.
- The Employer Assessment Factor changes from 1.83% (or 0.0183) to 2.03% (or 0.0203). (See Exhibit XI-B.) This amount is not loaded into the CMCRB's Manual Loss Costs, but is treated as a separate calculation in the determination of policy premium. This amount is the estimated provision for Pennsylvania's Administrative Fund, Subsequent Injury Fund, Supersedeas Fund and Uninsured Employer Guaranty Fund.
- The overall Catastrophe Loss Cost provision changes from \$0.11 to \$0.12. (See Exhibit XII-A.) The provision varies by classification. These amounts are loaded into the CMCRB's Manual Loss Costs.
- The Experience Rating Plan parameters require a change to the Off-Balance Factor from 1.0040 to 1.0003. This factor is not included in the CMCRB's Manual Loss Costs, but is incorporated into the Experience Rating Plan's Rating Formula.
- The Merit Rating Plan Off-Balance Factor remains at 1.0002. (See Exhibit XIV-A, Page 1.) This amount is loaded into the CMCRB's Manual Loss Costs.
- The Safety Committee Credit Off-Balance Factor changes from 1.0158 to 1.0174. (See Exhibit XIV-B.) This amount is loaded into the CMCRB's Manual Loss Costs.

Summary of Significant Changes from Last Year's Filing

Exhibit V-F Summary includes adjustment factors for House Bill 1840 (or Act 111 of 2018) that vary by Accident Year in lieu of the uniform adjustment for House Bill 1840 previously on this exhibit. These factors and their derivation are discussed in the section concerning Exhibit V-F of this report and are provided in Appendix B to this report.

Concerning Exhibit V-J, for the April 1, 2019 Filing, two claims (i.e., 49353 and 49538) for Accident Year 2017 individually exceeded the catastrophe limit (\$1,250,000) and were listed on a single Exhibit V-J page. For the April 1, 2020 Filing, these two claims now individually do not exceed the catastrophe limit, so a page for these claims is not included with the filing. However, four claims for Accident Year 2018 individually exceed the catastrophe limit and are listed on a single Exhibit V-J page. These changes also impact certain pages in the Exhibit V-B series concerning large loss limitations.

On Exhibit VI-D Page 1, the data that is displayed was reduced to 1994 through 2018 to match the data required for the loss development exhibits (i.e., Exhibit VI-B Pages 1 and 2) in lieu of displaying data back to 1983 (or data for 1983 through 2018), allowing for the print to be slightly larger. Note that the Adjustment Factors for Accident Years 1993 and earlier are not needed for this filing.

Exhibit VI-D Pages 2 through 15 were deleted and noted as reserved for future use. The Adjustment Factors for Accident Year 1994 did not change from the prior filing. The Adjustment Factors for Accident Years 1993 and earlier and the Sample Payment Patterns are not needed for this filing. Note that these pages were identical for the filings effective April 1, 2015 through April 1, 2019.

Exhibits XI-A and XI-B were combined into Exhibit XI. The data and calculations previously shown on the two separate Exhibits XI-A and XI-B are now shown on the single page exhibit, Exhibit XI.

Most Filing Exhibits were updated from the CMCRB's prior loss cost filing either by adding the data for the newest available Accident Year and deleting the data for the oldest Accident Year or by just adding the data for the newest available Accident Year.

On all exhibits, a checksum expression is displayed in the bottom right, typically under the label for the Effective Date of the subject filing. The formula that generates these checksums was modified to display only the checksum value. In other words, the term "Checksum" is no longer displayed on selected exhibits. Also, the "footer" fields (i.e., File (name), Run Date (and time), Author (PAB) and Effective Date fields) were revised for formatting consistency across all Exhibit pages. These fields are used for internal tracking purposes and comprise a non-substantive part of the filing.

Discussion of Filing Exhibits

Many of the Filing Exhibits provide various totals and subtotals that are derived using current estimates of Developed Payrolls and/or Miner Years as weights. These totals and subtotals may differ from totals and subtotals shown in prior filings as the weights can and do change.

Exhibit I – Current and Proposed Loss Costs

The I-A-M pages provide comparisons of the currently Approved Manual Loss Costs and the Proposed Manual Loss Costs by classification.

The I-A-UL pages provide comparisons of the currently Approved Unloaded Loss Costs and the Proposed Unloaded Loss Costs in the same format as the I-A-M pages. However, I-A-UL also includes a third page that presents the loss cost limitations by classification and by coverage.

The I-B pages present the Proposed Unloaded Loss Costs after limitations (see the I-A-UL discussion above), the loading of the Catastrophe Loss Costs, the application of the various Off-Balance factors and the Proposed Loaded Loss Costs (or Proposed Manual Loss Costs).

In addition to providing Loss Costs by classification and by coverage, the pages in Exhibit I also provide various totals and subtotals that are derived using the Developed Payrolls for the most recent Accident Year as weights.

Exhibit II – Traumatic Loss Cost Indications

This page presents the currently Approved Unloaded Loss Costs, the Indicated Unloaded Loss Costs and the Proposed Unloaded Loss Costs by classification. Changes from the currently Approved Unloaded Loss Costs to the Indicated Unloaded Loss Costs are capped or limited to +/- 25% to derive the Proposed Unloaded Loss Costs by classification.

This page also displays various totals and subtotals that are derived using the Developed Payrolls for the most recent Accident Year as weights.

Exhibit III – State Occupational Disease Loss Cost Indications

This page presents the currently Approved Unloaded Loss Costs, the Indicated Loss Costs (the Indicated Loss Costs are the products of the Indicated Average Frequencies and the Indicated Average Severities) and the Proposed Loss Costs by classification. The Proposed Loss Costs equal the Indicated Loss Costs except where changes are limited to +/-25%.

This page also displays various totals and subtotals that are derived using the Developed Payrolls for the most recent Accident Year as weights.

Exhibit IV – Federal Occupational Disease Loss Cost Indications

- A. This page presents the currently Approved Unloaded Loss Costs, the Indicated Loss Costs (the Indicated Loss Costs are the sums of the products of the Indicated Average Frequencies and the Indicated Average Severities for FOD Basic and FOD Excess) and the Proposed Loss Costs (i.e., Loss Costs w/ Limitation 25%) by classification. The Proposed Loss Costs equal the Indicated Loss Costs except where changes are limited to +/-25%.

This page also displays various totals and subtotals that are derived using the Developed Payrolls for the most recent Accident Year as weights.

- B. Page 1 displays the derivation of the FOD Basic Claim Frequencies. This process begins with the Indicated Claim Frequencies on a Miner Year basis developed in Exhibit IV-B Page 3. The Indicated Claim Frequencies are credibility weighted with the currently Approved FOD Basic Claim Frequencies trended (although the trend is 0%) to the current valuation level developed in Exhibit IV-B Page 4. After the application of credibility, the Credibility Weighted Indicated FOD Basic Claim Frequencies are converted to a Developed Payroll basis because the CMCRB publishes Loss Costs on a Payroll basis.

The Total of the Expected Awarded Claims for All Classes is assigned as the full credibility standard. The credibility factor for each classification is obtained as the ratio of the Expected Awarded Claims of a given class to the full credibility standard raised to the $\frac{1}{2}$ power.

Page 2 displays the derivation of the FOD Excess Claim Frequencies. The Indicated Claim Frequencies are developed in Exhibit IV-B Page 5. The currently Approved FOD Excess Claim Frequencies are developed in Exhibit IV-B Page 6. Otherwise, this page works like Page 1.

Page 3 displays the derivation of the FOD Basic Claim Frequencies on a Miner Year Basis. This process involves weighting the Modeled Indications from Exhibit VIII-F with the Experience Indications from Exhibit VIII-B-2. The weights are 25% for the Modeled Indications and 75% for the Experience Indications.

Page 4 displays the conversions of the Approved FOD Basic Claim Frequencies from the prior filing that are on a Payroll basis to a Miner Year basis.

Page 5 displays the derivation of the FOD Excess Claim Frequencies on a Miner Year Basis. This process involves weighting the Modeled Indications from Exhibit VII-L with the Experience Indications from Exhibit VII-B-2. The weights are 25% for the Modeled Indications and 75% for the Experience Indications.

Page 6 displays the conversions of the Approved FOD Excess Claim Frequencies from the prior filing that are on a Payroll basis to a Miner Year basis.

These pages provide various totals and subtotals that are derived using Developed

Payrolls and/or Estimated Miner Years as weights as indicated.

Exhibit V – Traumatic Loss Information

This section of the filing produces the Proposed Traumatic Unloaded Loss Costs by classification.

- A. Page 1 displays the derivation of the Proposed Traumatic Unloaded Loss Costs by classification. This process begins with the Indicated Traumatic Loss Costs developed in Exhibit V-B. The Indicated Traumatic Unloaded Loss Costs are credibility weighted with the currently Approved Traumatic Unloaded Loss Costs trended to the current valuation level. After the application of credibility, the Indicated Traumatic Unloaded Loss Costs are further limited to changes of +/-25% to produce the Proposed Traumatic Unloaded Loss Costs.

In addition to providing Traumatic Loss Costs by classification, this page also provides various totals and subtotals that are derived using the Developed Payroll shown in the column with these totals and subtotals as weights.

The credibility procedure assigns full credibility (i.e., 100% credibility or 1.00) to three (3) of the Four Major Classifications (i.e., Underground Bituminous, Surface Anthracite and Surface Bituminous). For the six (6) minor classifications, the credibility factor for each classification is obtained as the ratio of the Five Year Expected Losses of a given class to Five Year Expected Losses for Surface Bituminous raised to the $\frac{1}{2}$ power. For the April 1, 2020 Filing, Bituminous Prep Plants also received full credibility given the level of Five Year Expected Losses for this class now exceeding the Five Year Expected Losses for Surface Bituminous.

The complement of the credibility is assigned to the currently Approved Traumatic Unloaded Loss Cost adjusted or trended to the current valuation level. The adjustment or on-level factor is the weighted average of the Indemnity and Medical Trends contained in this filing, weighted by the five (5) year Indemnity and Medical Ultimate Losses from Exhibit V-B, Page 1.

Page 2 shows the derivation of the Indicated Traumatic Unloaded Loss Cost for the Underground Anthracite classification. This value is derived by a different process since this classification has virtually no experience for the five (5) most recent Accident Years. This is the same procedure that was used in last year's filing.

- B. These pages show the derivation of the Indicated Traumatic Unloaded Loss Costs by Classification. This process begins with the Reported Losses separately shown for Indemnity and Medical for the five (5) most recent Accident Years. It applies Loss Development and Trend Factors to adjust Reported Losses to Ultimate Losses. Finally, it compares Ultimate Losses to Developed Payroll to produce indicated Loss Costs by Accident Year and in Total. (Page 1 shows the Total for All Classifications Combined. Pages 2, 6, and 14 show subtotals for the noted classification groupings.)

The inclusion of claims in excess of \$1,250,000 has been limited on these pages. For this filing, Pages 3b and 9b display the calculations related to this limitation.

- C. These pages show the derivation of the Selected Age-to-Age Loss Development Factors separately for Traumatic Indemnity and Medical Incurred Losses. The Selected Factors are based on the Derived Development Factors which are developed on Pages V-D-2 and V-E-2 for Indemnity and Medical respectively. The Selected Age-to-Age Factors are Accumulated in Column 8 to produce Selected Age-to-Ultimate Loss Development Factors. The Age-to-Ultimate Factors include a “tail” provision for loss development beyond 20th report level.

For Indemnity Incurred Losses, the Age-to-Ultimate Factors changed as follows for:

- 1:2 (1st report to ultimate) -4.0%,
- 2:3 (2nd report to ultimate) -1.7%,
- 3:4 (3rd report to ultimate) -0.8%,
- 4:5 (4th report to ultimate) 0.3%,
- 5:6 (5th report to ultimate) 0.4% and
- 6th report to ultimate and beyond in the range of 0.0% to 0.4%.

For Medical Incurred Losses, the Age-to-Ultimate Factors changed as follows for:

- 1:2 (1st report to ultimate) -4.8%,
- 2:3 (2nd report to ultimate) -2.0%,
- 3:4 (3rd report to ultimate) -0.4%,
- 4:5 (4th report to ultimate) -0.3%,
- 5:6 (5th report to ultimate) -0.3% and
- 6th report to ultimate and beyond in the range of -0.2% to 0.5%.

- D. These pages show the development of the Derived Traumatic Indemnity Loss Development Age-to-Age factors and include the development of the Tail Factor.

Page 1 is the same as VI-A-4. The Age-to-Age factors from this page are used on V-D-2. For additional information, please refer to the discussion for VI-A-4.

Page 2 shows the (Actual) Age-to-Age Factors and the Derived (or Modeled) Age-to-Age Factors for Traumatic Indemnity Incurred Losses. Examination of the Age-to-Age factors suggested that the factors from the first four (4) periods should be accepted without adjustment and that the factors for the remaining periods should be replaced with modeled or derived factors. The same determination was made for last year’s filing.

The CMCRB decided that a linear model was reasonable and found to produce acceptable results. Similar to the model fitting approach in last year’s filing, several assumptions were used to produce the model.

- The model needed to have a slight downward slope and to accept that loss development beyond some point in time was going to be zero (i.e., that loss development factors beyond some point would be 1.0000).
- The model needed to produce factors such that the upward accumulation of the derived factors would equal the upward accumulation of the actual factors from the experience period (i.e., period 5 through 19). The accumulation of these fifteen (15) factors is 15.02030, producing an average of 1.00135.
- The model would be linear and have the form $y(t) = x - at$.
- The model needed to have a value equal to the average of the experience data at the midpoint of the period that produced the data. Expressed algebraically, the midpoint of the period is 12 and the average of the experience period is 1.00135, so $y(12) = 1.00135$.
- Development beyond 10 years after the end of the experience period would not be expected. Again, expressed algebraically, the period associated with this assumption is 29 and the value of the function is 1.0001, so $y(29) = 1.0001$. (Beyond period 29, all factors are assumed to be 1.0000.)
- These conditions result in the following system of equations:
$$y(12) = 1.00135 = x - (a)(12) \text{ and}$$
$$y(29) = 1.0001 = x - (a)(29).$$
- The solution for this system of equations was found to be:
$$a = 0.0000737 \text{ and}$$
$$x = 1.002238.$$
- Given these values, $y(5)$ is determined to be $1.0019 = 1.002238 - (0.0000737)(5)$. (Note that rounding can have a slight impact on the calculations.) This value is entered on Line 5 of Column (5). The following numbers in this column are generated by subtracting 0.0000737.
- The Modeled Factors from periods 20 through 29 in Column (10) are accumulated upward in Column (11) to produce the CMCRB tail factor. The CMCRB tail factor is then averaged with the PCRB tail factor to produce the Selected tail factor.

Page 3 provides the Age-to-Age Indemnity Incurred Loss Development Factors from the most recent PCRB filing. The Tail Factor (or “20 to Ult” Factor) from this page is used on V-D-2. The PCRB Age-to-Age Factors are compared to the CMCRB Age-to-Age Factors on V-C-1.

- E. These pages show the development of the Derived Traumatic Medical Loss Development Age-to-Age factors and include the development of the Tail Factor.

Page 1 is the same as VI-B-4. The Age-to-Age factors from this page are used on V-E-2. For additional information, please refer to the discussion for VI-B-4.

Page 2 shows the (Actual) Age-to-Age Factors and the Derived (or Modeled) Age-to-Age Factors for Traumatic Medical Incurred Losses. Examination of the Age-to-Age factors

suggested that the factors from the first two (2) periods should be accepted without adjustment and that the factors for the remaining periods should be replaced with modeled or derived factors. The same determination was made for last year's filing.

To begin, the CMCRB's Age-to-Age Factors were averaged with the PCRB's Age-to-Age Factors for the periods 10 to 19 to produce Adjusted Age-to-Age Factors. The CMCRB's Age-to-Age Factors were used for periods 3 through 9.

Next, the CMCRB decided that a model of the form $y(t) = (x)(a^{t-3})$ was reasonable and found to produce acceptable results. Similar to the model fitting approach in last year's filing, several assumptions were made to derive the fitted model.

- The geometric mean of the product of the Adjusted Age-to-Age Factors from periods 3 through 19 was calculated and found to be 1.0044793. (There are 17 factors from $t=3$ to $t=19$ so the geometric mean is $(0.9966 \times 1.0133 \times \dots \times 1.0095)^{(1/17)}$).
- The length of the development period beyond the end of the experience period was chosen to be 19 years. Development is not expected at the 39th report level and beyond. Development factors beyond 38th report are assumed to be 1.0000. The development factor for period 38 is assumed to be 1.0001.
- The model needed to produce factors such that the upward accumulation of the derived factors would equal the upward accumulation of the actual factors from period 3 through 19. This accumulation is 1.0789.
- The model needed to have a value equal to the geometric average of the experience data at the midpoint of the period that produced the data. Since the data that is being used runs from $t=3$ to $t=19$ the midpoint is at $t=11$. Thus, $y(11) = 1.0044793$.
- These conditions result in the following system of equations:

$$y(11) = 1.0044793 = (x)(a^8) \text{ and}$$

$$y(38) = 1.0001 = (x)(a^{35}).$$

- The solution for this system of equations was found to be:
 $a = 0.999838$ and
 $x = 1.00578$.
- At this point, the value 1.00578 (displayed as 1.0058) is entered on Line 3 (for Period 3) of Column 6. The Factor for Period 4 is obtained as (1.00578) times (0.999838). The factor 'a' is applied to each of the succeeding Factors until Period 38 is reached. The system is very sensitive to the precision of the parameters. If the initial choices are abbreviated, the goals may not be met (e.g., the accumulated value may not be 1.0789 and/or the last point may not be 1.0001).
- The Modeled Factors from periods 20 through 38 in Column (9) are accumulated upward in Column (10) to produce the CMCRB (derived) tail factor. The CMCRB tail factor is then averaged with the PCRB tail factor to produce the Selected tail factor.

Page 3 provides the Age-to-Age Medical Incurred Loss Development Factors from the most recent PCRB filing. The Tail Factor (or "20 to Ult" Factor) from this page is used on V-E-2. The PCRB Age-to-Age Factors are compared to the CMCRB Age-to-Age Factors on V-C-2.

- F. This page shows the selected Traumatic Annual Trend Factors separately for Indemnity and Medical losses that are derived from Exhibit V-K. Since the Annual Trend Factors are applied separately to the five (5) most recent Accident Years, the page also shows the Trend Period for each of those five (5) years and the Trend Factor for each Accident Year.

In addition to traditional trend factors and calculations, this page also allows for adjustments related to other changes. For this filing, other changes include HB 1846 of 2014 and HB 1840 (or Act 111 of 2018).

Concerning HB 1846, the CMCRB applied a uniform savings of 1.32% or a factor of 0.9868 to all Accident Years with the December 16, 2015 revision to the April 1, 2016 Filing. For the April 1, 2017 through April 1, 2019 Filings, the CMCRB proposed adjustment factors that varied by Accident Year and maintains that approach for the April 1, 2020 Filing. These factors and their derivation are provided in Appendix A to this report.

Concerning HB 1840, the CMCRB applied a uniform additional charge of 1.59% or a factor of 1.0159 for all Accident Years for the April 1, 2019 Filing. For the April 1, 2020 Filing, the CMCRB proposes adjustment factors that vary by Accident Year. These factors and their derivation are provided in Appendix B to this report.

- G. This page is reserved for future.
- H. Page 1 provides a summary of the Traumatic Indemnity Losses. Page 2 provides a summary of the Traumatic Medical Losses. The data on these pages support calculations on the Exhibit V-I pages.
- I. Exhibit V-I is comprised of six (6) pages. Each page is used to estimate one of the trend parameters that are considered as follows:
- Page 1 – Traumatic Indemnity Loss Severity Trend
 - Page 2 – Traumatic Medical and Medical Only Loss Severity Trend
 - Page 3 – Traumatic Medical Only Loss Severity Trend
 - Page 4 – Traumatic Indemnity Claim Frequency Trend
 - Page 5 – Traumatic Indemnity Claim Frequency Trend Net of Wage Trend
 - Page 6 – Traumatic Medical excluding Medical Only Loss Severity Trend

Each of these six (6) pages is provided for three (3) different scenarios as follows:

- Summary – these pages show the data under consideration for each parameter, the result for each parameter from Exhibit V-K which averages the 12 estimates that are considered, a graph of the data indicated and an algebraic expression of the line of best fit.
- Estimates 01-06 – these pages show the data under consideration for each parameter and the following six (6) estimates:

- Estimates 01 & 02 are based on the ten (10) most recent Accident Years.
- Estimates 03 & 04 are based on the nine (9) most recent Accident Years.
- Estimates 05 & 06 are based on the eight (8) most recent Accident Years.
- Estimates 07-12 – these pages show the data under consideration for each parameter and the following six (6) estimates:
 - Estimates 07 & 08 are based on the nine (9) most recent Accident Years before the most recent Accident Year.
 - Estimates 09 & 10 are based on the eight (8) most recent Accident Years before the most recent Accident Year.
 - Estimates 11 & 12 are based on the seven (7) most recent Accident Years before the most recent Accident Year.

The twelve (12) estimates utilize a geometric average, a regression analysis, a 3-year moving average and the various experience periods listed above. These estimates also utilize data with certain extreme values limited as noted on each page.

- J. On these pages, individual Traumatic claims that exceed \$1,250,000 after loss development are proportioned based on reported medical and indemnity. The CMCRB believes that limiting these claims helps to stabilize the trend indications.

Exhibit V-J included in the current filing shows data for four large claims for Accident Year 2018 that individually exceed the catastrophe limit. Note that the claims previously reported for Accident Year 2017 do not exceed the threshold (\$1,250,000) at this evaluation. While the Reported Incurred amounts for these claims did not change significantly, the Loss Development Factors for claims at second report level are significantly lower than the Loss Development Factors for claims at first report level, resulting in the lower valuation for this filing.

- K. Exhibit V-K summarizes the twelve (12) estimates of each trend parameter under consideration from the various pages of Exhibit V-I. This exhibit also displays the selected Claim Frequency, Indemnity Severity and Medical Severity Trend Factors. Additionally, on this exhibit, changes to the Composite Trend Factors are capped at +/- 3.0 percentage points from the factors used in prior filing, when applicable.

In prior filings, the CMCRB generally selected trend estimates using averages of some or all of the Estimates 1-12, citing the estimates that were included and the rationale associated with these decisions. For example, for the April 1, 2018 Filing, the CMCRB selected trend estimates using the Average of Estimates 1-4 and 7-10, noting that the estimates that began with Accident Year 2009 involved exceptional variability (especially for Indemnity Severity).

For the April 1, 2019 Filing, the CMCRB departed from this approach, noting that the prior approach did not provide reasonable results. For the April 1, 2020 Filing, the CMCRB maintains the same concern and offers the following expanded discussion concerning the Traumatic trend factor selections displayed on Exhibit V-K.

The CMCRB notes that our database is very small and inherently volatile especially with respect to Traumatic loss trend estimation techniques. Oftentimes, the selection of the years that are used to begin or end a loss trend estimation technique significantly changes the trend estimate that is produced. While this is not a new observation per se, the data in the subject filing continue to seem very sensitive to these considerations.

In calculating and selecting trend assumptions, the CMCRB considers several basic assumptions or observations that include, but are not limited to, the following:

- Claim Frequency Trend – The CMCRB notes that a modest negative claim frequency trend has existed in Pennsylvania for over 20 years and that this is evident in the CMCRB's data and in the PCRB's data. The CMCRB also understands that this phenomenon exists in W.C. data outside of Pennsylvania, but that this phenomenon might not be as consistent outside of Pennsylvania.
- Indemnity Severity Trend – The CMCRB believes that Indemnity Severity Trend is most influenced by wage inflation. However, other conditions or circumstances also influence Indemnity Claim Severity that are more difficult to quantify (e.g., mix of injury severities under consideration).
- Medical Severity Trend – The CMCRB believes that Medical Severity Trend is most influenced by medical cost and utilization inflation. However, like Indemnity Claim Severity, Medical Claim Severity is also influenced by other conditions or circumstances that are more difficult to quantify (e.g., mix of injury severities under consideration).
- Indemnity and Medical Severity Trend relationship – The CMCRB generally expects medical cost and utilization inflation to exceed wage inflation and that Indemnity Severity Trends will usually be slightly lower than Medical Severity Trends.
- Although the CMCRB believes that the theories behind the assumptions listed above are sound and generally well accepted, the CMCRB also believes that actual data should be relied upon to the extent that it is reliable and reasonable.

The CMCRB prepares a variety of trend estimates based on a review of metrics from actual data for the ten most recent Accident Years. The selected trend assumptions are then applied to the most recent five Accident Years. The new Accident Year is least affected by the selected trend assumptions, while the oldest Accident Year is most affected. See Exhibit V-F for the calculations that underlie this statement.

Essentially, each of the five most recent Accident Years produces an estimate of the Loss Costs (or the Claim Frequencies or Claim Severities) that are under consideration. Consequently the CMCRB expects the results for the five most recent Accident Years to be randomly scattered around a horizontal straight line. Of course, with a limited database, actual results can and do vary from this expectation.

Traumatic Trend Factor Selections

- The CMCRB selected a Claim Frequency Trend of -2.75%. This selection results in a 5-year weighted average trended Claim Frequency of 9.0 which is lower than

all five of the most recent years. It also produces a fairly good fit of the data for the last nine years.

- The CMCRB selected an Indemnity Severity Trend of 4.0%. This selection results in a 5-year weighted average trended claim severity of \$69,199 which is higher than all five of the most recent years. However, this result seems reasonable when compared to the 3-year weighted average trended claim severity of \$70,166 and 9-year weighted average trended claim severity of \$67,865. Note that claim severities remain considerably higher for 2015 through 2018 than earlier years.
- The CMCRB selected a Medical Severity Trend of 5.0%. This selection results in a 5-year weighted average trended claim severity of \$12,768 which is lower than the two most recent year and higher than the other prior years. This result seems reasonable compared to the 3-year weighted average actual claim severity of \$12,749. However, claim severities remain considerably higher for 2016 through 2018 than earlier years.

Observations about Loss Ratio Trends (or Composite Trends)

- Although the CMCRB prefers to separately review Claim Frequency and Claim Severity Trend estimates, the CMCRB notes that the Claim Frequency Trend times the Claim Severity Trend is equivalent to the Loss Ratio Trend.
- Therefore, the CMCRB's implied Indemnity Loss Ratio Trend is the product of 0.9725 (i.e., the selected -2.75% Claim Frequency Trend) and 1.040 (i.e., the selected 4.0% Indemnity Severity Trend) which equals 1.011 (or 1.1%).
- Similarly, the CMCRB's implied Medical Loss Ratio Trend is the product of 0.9725 (i.e., the selected -2.75% Claim Frequency Trend) and 1.050 (i.e., the selected 5.0% Medical Severity Trend) which equals 1.021 (or 2.1%).

Exhibit VI – Traumatic Loss Development

The CMCRB notes that Act 44 of 1993 and Act 57 of 1996 significantly affected Traumatic Indemnity and Medical benefit levels and claim settlement practices (and consequently Traumatic Loss Development data reported to the CMCRB). The CMCRB calculates and applies adjustments to address these effects to its reported loss development data in the various pages of Exhibit VI and briefly discusses the more significant aspects of its work below.

- A. Page 1 displays Reported Traumatic Indemnity Incurred Losses by Accident Year and by Report Level, Act 57 Indemnity Law Adjustment Factors and Reported Traumatic Indemnity Incurred Losses adjusted to Act 57 Law Level.

Page 2 displays Reported Traumatic Indemnity Incurred Losses adjusted to Act 57 Law Level, Claim Settlement Level Additives and Reported Traumatic Indemnity Incurred Losses adjusted to Act 57 Law Level and Claim Settlement Level.

Page 3 displays Reported Traumatic Indemnity Incurred Losses by Accident Year and by Report Level, the Sum of Act 57 Indemnity Law Adjustment Factors and Claim Settlement Level Additives and Reported Traumatic Indemnity Incurred Losses adjusted to Act 57 Law Level and Claim Settlement Level.

Page 4 displays Reported Traumatic Indemnity Incurred Losses adjusted to Act 57 Law Level and Claim Settlement Level by Accident Year and by Report Level. It also shows the report-to-report Development factors, as well as the averaging and selection of report-to-report factors (i.e., the Average of Middle Four).

Pages 5a, 5b and 5c display the summary and derivation of the Traumatic Indemnity Claim Settlement Adjustment Factors.

When calculating loss development factors, the primary premise is that the loss development factors must be in direct relationship with the losses being developed. The CMCRB uses data for the five (5) most recent Accident Years when calculating indicated Traumatic Loss Costs by classification (see Exhibit V-B) and notes that this data (or these five (5) years) are all on a post Act 57 Law and Claim Settlement level. Since the historical Loss Development data is not all consistently on this same level, the adjustments identified above are used to restate the historical Loss Development data to a post Act 57 Law and Claim Settlement level. In this way, both the losses to be developed from the five (5) most recent Accident Years and the loss development factors are on the same level or basis.

The CMCRB notes that Act 57 reduced Indemnity benefits in various ways. The more significant provisions of Act 57 involved changes to the AMA Guidelines, Social Security Offsets, Pension Offsets and Wage Level Offsets. The changes to Indemnity benefits are addressed by the Act 57 Indemnity Law Adjustment factors.

The CMCRB also notes that Act 57 permitted and recommended the settlement of Traumatic claims. The changes in claim settlement practices are addressed by the Claim Settlement Level Additives (or adjustments).

The CMCRB observes that both sets of adjustments seem to be well known and accepted. Furthermore, these adjustments become less relevant each year as more data is reported directly on a post Act 57 basis.

During 2017, the Pennsylvania Supreme Court made a decision in *Protz v. WCAB* that invalidated a portion of the Act 57 revisions. Subsequently, the Pennsylvania Legislature passed legislation that Governor Wolf signed on October 24, 2018, (Act 111 of 2018) to generally reinstate the provisions invalidated by this decision. The previously mentioned law and claim settlement adjustments used in the Exhibit VI series do not address the effect of this decision or this legislation. Refer to Exhibit V-F, the discussion concerning Exhibit V-F and Appendix B to this report for additional information concerning the treatment of the *Protz* Decision and Act 111 of 2018.

- B. Page 1 displays Reported Traumatic Medical Incurred Losses by Accident Year and by Report Level, Act 44 Medical Law Adjustment Factors and Reported Traumatic Medical Incurred Losses adjusted to Act 44 Law Level.

Page 2 displays Act 44 Medical Law Adjustment Factors, Claim Settlement Adjustment Additions and the Sum of these adjustments.

Page 3 displays Reported Traumatic Medical Incurred Losses by Accident Year and by Report Level, the Sum of Act 44 Medical Law Adjustment Factors and Claim Settlement Adjustment Additions and Reported Traumatic Medical Incurred Losses adjusted to Act 44 Law and Claim Settlement Levels.

Page 4 displays Reported Traumatic Medical Incurred Losses adjusted to Act 44 Law and Claim Settlement Levels by Accident Year and by Report Level. It also shows the report-to-report Development factors, as well as the averaging and selection of report-to-report factors (i.e., the Average of Middle Four).

Page 5 provides the derivation of the Medical Claim Settlement Adjustment Factors which are used on Page 2.

When calculating loss development factors, the primary premise is that the loss development factors must be in direct relationship with the losses being developed. The CMCRB uses data for the five (5) most recent Accident Years when calculating indicated Traumatic Loss Costs by classification (see Exhibit V-B) and notes that this data (or these five (5) years) are all on a post Act 44 Law and Claim Settlement level. Since the historical Loss Development data is not all consistently on this same level, the adjustments described above are used to restate the historical Loss Development data to a post Act 44 Law and Claim Settlement level. In this way, both the losses to be developed from the five (5) most recent Accident Years and the loss development factors are on the same level or basis.

Similar to a comment under the Indemnity section above, the CMCRB observes that both sets of adjustments seem to be well known and accepted. Furthermore, these adjustments become less relevant each year as more data is reported directly on a post Act 44 basis.

During 2014, the Pennsylvania legislature passed House Bill 1846. The previously mentioned law and claim settlement adjustments used in the Exhibit VI series do not address the effect of this legislation. Refer to Exhibit V-F, the discussion concerning Exhibit V-F and Appendix A to this report for additional information concerning the treatment of HB 1846 of 2014.

- C. Page 1 displays Reported Traumatic Indemnity Incurred Claims by Accident Year and by Report Level. It also shows the report-to-report Claim Count Development factors, the averaging and selection of report-to-report factors, the Cumulative Claim Count Development factors and the estimated Ultimate Claim Counts for each Accident Year.

Page 2 displays Reported Traumatic Medical Only Incurred Claims by Accident Year and by Report Level. Otherwise, the format follows the format of Page 1.

Page 3 displays Reported Traumatic Medical Only Incurred Losses by Accident Year and by Report Level. The format is similar to Pages 1 and 2, except that only ten (10) report levels are displayed.

- D. Page 1 presents the Summary of Adjustments to Traumatic Medical Loss Development Factors related to Act 44. Pages 2 through 15 are reserved for future use.
- E. This page presents the Traumatic Indemnity and Medical Paid Loss information by Accident Year and Report Level arranged in traditional loss development format. The CMCRB has only collected Paid Loss information for the period displayed.

Exhibit VII – SOD and FOD Excess Severity and Frequency

- A. These five (5) pages show the Average SOD and FOD Excess Severities prior to adjustments for Act 57, adjustments for Act 57 and after adjustments for Act 57. One page is provided for each of the Four Major Classes and for the Other Classes combined.

These pages display severity values (i.e., Average Amounts and/or Totals) that are summaries of the details found in Exhibit VII-E, Exhibit IX-A and Exhibit VII-G. These pages average the Base Scenario with the All Permanent Partial Scenario using weights of 100% and 0% respectively, since no claims have been reported as Permanent Partial.

Sections “a” (After AMA Guidelines), “b” (Social Security Offset/Onset) and “c” (Pension Offset/Onset) are addressed in the discussion for Exhibit IX-A. (See Exhibit IX-A for a discussion about these amounts.)

Section “d” (Combined Social Security and Pension Offsets/Onsets) recognizes the condition that the full amount of the pension is available as an Offset to the SOD benefit with the constraint that the SOD benefit minus the Social Security and Private Pension Offsets must not be less than zero.

Section “e” (Wage Level Decrease/Increase) is no longer used.

Section “f” (Combined Social Security, Pension and Wage Level) presents percentages that are equivalent to the percentages in Section “d” since Section “e” is no longer used.

Section “g” (Combined Dollar Effect) summarizes the effect in dollars of the various Offsets and Onsets calculated on these pages.

- B-1. Exhibit VII-B-1-A displays the derivation of the SOD Claim Frequencies by Classification on a Developed Payroll basis. This process begins with the Indicated Claim Frequencies on a Miner Year basis developed in Exhibit VII-B-2. The Indicated Claim Frequencies are credibility weighted with the currently Approved SOD Claim

Frequencies trended (although the trend is 0%) to the current valuation level developed in Exhibit VII-B-1-B. After the application of credibility, the Credibility Weighted Indicated SOD Claim Frequencies are converted to a Developed Payroll basis because the CMCRB publishes Loss Costs on a Payroll basis.

The Total of the Expected Awarded Claims for All Classes is assigned as the full credibility standard. The credibility factor for each classification is obtained as the ratio of the Expected Awarded Claims of a given class to the full credibility standard raised to the $\frac{1}{2}$ power.

Exhibit VII-B-1-B displays the conversions of the Approved SOD Claim Frequencies from the prior filing that are on a Payroll basis to a Miner Year basis.

Both of these pages provide various totals and subtotals that are derived using Developed Payrolls or Estimated Miner Years as weights as indicated in the Source notes. The totals and subtotals may differ from prior filings as the weights can and do change.

- B-2. The objective of these pages is to compare estimates of the Expected Ultimate Awarded Claims to a suitable exposure base. These pages display data on the number of SOD Claims that have been Reported, Awarded or Denied, or that are Pending by Classification and with Subtotals and a Grand Total. Additionally, the IBNR Claim estimates from Exhibit VII-C are also displayed. IBNR and Pending claims are multiplied by an Award Ratio, since all reported claims do not result in payment awards.

For the exposure base, Developed Payrolls are converted to Estimated Miner Years. Subsequently, Claim Frequencies are calculated on a Miner Year (per 100 Miner Years) basis which began with the filing for April 1, 2011.

Converting Developed Payrolls to Estimated Miner Years, the (Wage) Adjustment Factors are needed since our data shows that workers in certain Bituminous Classes (i.e., Underground and Prep Plant) were paid at a higher rate than workers in other classes. (See Exhibit X-G for this analysis.) The use of a single factor for all classes would overestimate the number of Miner Years in the cited classes and underestimate the number of Miner Years in other classes had a single factor been used to adjust the SAWW in the conversion process.

Given the limited number of Denied Claims in this data, each Class was given the Award Ratio based on the Grand Total data.

The totals and subtotals that are displayed are additions of the Classes listed and may slightly differ from the results derived using the formula in the Source notes.

Federal Excess Frequencies are also calculated on these pages as the products of the State Frequencies times a Federal Excess Award Ratio of 40%. This ratio has been used since the April 1, 2004 filing (and possibly earlier) and remains comparable to the ratio of FOD Excess Awarded and Pending Claims to SOD Awarded and Pending Claims.

- C. Pages 1 through 4 (i.e., Exhibit VII-C-1 through VII-C-4) display SOD Reported Claims for the Four (4) Major Classifications. Page 5 (i.e., Exhibit VII-C-5) displays SOD Reported Claims for the six (6) Other Classifications combined. Page 6 (i.e., Exhibit VII-C-6) shows SOD Reported Claims for All Classifications combined.

These pages show the procedure used to calculate Incurred But Not Reported (IBNR) Claims. Incremental Changes in Reported Claims are calculated and then converted to a percentage of Developed Payroll (in \$Millions). The actual experience is averaged and then smoothed by ordering the actual data from largest to smallest.

For the six (6) Other Classifications, the All Classifications estimates were used to arrive at the base IBNR. Pages 7 and 8 (i.e., Exhibit VII-C-7 and VII-C-8) show the IBNR calculations for the Other Classifications. Adjustment Factors were used for each of the Other Classifications to lower the expected probability of having a SOD claim since the Other Classifications have produced fewer SOD claims and lower SOD claim frequencies than the All Classifications experience with one exception. The Adjustment Factor for Anthracite Prep Plant was maintained at unity (i.e., no adjustment) because this Class has produced more claims and higher claim frequencies than the rest of the Other Classifications.

- D. Omitted – Reserved for Future Use

- E. This exhibit consists of six (6) subsections (i.e., a, b, c, d, e and f). Each subsection consists of five (5) pages (one page for each of the Four Major Classes and one page for the Other Classes combined). The subsections show the following severities or severity adjustments:

- a – SOD – Before Act 57
- b – SOD – Social Security Offset
- c – SOD – Private Pension Offset
- d – Federal Excess OD – Before Offsets
- e – Federal Excess OD – After Social Security Offset
- f – Federal Excess OD – After Social Security and Private Pension Offsets

These pages display the individual claim detail from Exhibit IX-A by status (i.e., Awarded-Permanent, Awarded-Commuted/Compromised, and Pending). Since Pending claims could be resolved by Commutation or Compromise, the probability of Commutation/Compromise is assigned to the Pending claims based on the mix of Commuted/Compromised claims in the Awarded claims. The severity for the expected Commuted/Compromised claims within the Pending claims is then adjusted by the difference between the Average Awarded Commuted/Compromised Severity and the Average Awarded Permanent Severity. This adjustment results in a lower SOD cost and a higher FOD Excess cost.

- F. Omitted – Reserved for Future Use

- G. Page 1 displays the Smoothed Average Weekly Wages for the Four Major Classes from Exhibit VII-H and the process to convert these Wages to a post-Act 57 level, where needed. The post-Act 57 Wages are used in the Occupational Disease Severity Model.

The top of Page 2 shows the calculation of the Act 57 Wage Level Offset or the Wage Level decrease associated with Act 57. The Wage Level Changes included in Act 57 are expected to reduce State benefit levels and consequently increase Federal Excess benefit levels. The wage distribution is from the 120 State OD claims provided by CMCRB for the CM-1-1998 filing, with judgmental trending to estimate the distribution of wages among miners during the projected effective period of the loss costs. The average benefit levels before and after the changes were developed by PCRb.

The bottom of Page 2 shows the development of the 12.5% Pension Offset factor. This adjustment is made because not all miners are eligible for a private pension and not all private pension payments are subject to offset.

- H. These pages show the development of the Projected Average SOD Wage Level for each of the Four Major Classes. For each class, an average ratio of the Reported (or Actual) SOD Average Wage to the Statewide Average Weekly Wage is calculated. The product of the ratio for each class and the projected Statewide Average Weekly Wage results in a Projected Average SOD Wage Level for each class. The Wage History for 1990 through 2018 (the most recent year that data is available) is then smoothed for use in the indexation process in Exhibit VII-G.
- I. Omitted – Reserved for Future Use
- J. Page 1 shows the historical Social Security Cost of Living Adjustments (COLA), the 3-year, 5-year, 10-year and All-year averages of these amounts and the Selected Annual Change. Page 2 shows the projection of the Monthly Wage Amounts Bend Points and the Annual Social Security Wage Base used to calculate the Primary Insurance Amount (PIA) or Social Security benefit. These amounts are projected to one (1) year past the proposed effective date, which is the average accident date of the proposed loss costs. Page 3 provides examples as to how the bend points and maximum are used.
- K. Omitted – Reserved for Future Use.
- L. These pages model changes to Claiming activity (i.e., Claim Awarding and Reopening) for FOD Excess Claims that are related to Federal Black Lung Regulation revisions that were issued on January 19, 2001. Generally, the reasoning for these calculations and assumptions follows the reasoning for Exhibit VIII-F, which is presented later in the commentary for Exhibit VIII-F. The differences in the calculations and assumptions between Exhibit VII-L and Exhibit VIII-F are discussed as follows.

Exhibit VII-L uses data for the most recent twenty (20) years whereas Exhibit VIII-F only uses data for the most recent ten (10) years. Since the CMCRB believes that

different assumptions should apply to the pre-2001 years and the post-2000 year, the different or additional assumptions and calculations on these pages include the following:

- Pending Awarded Ratios – the Award Ratio of 30% applies to all years.
- Denied Reopened Ratios
 - The Reopened Ratio of 5% applies to the post-2000 years.
 - A Reopened Ratio of 15% applies to the pre-2001 years.
- Denied Awarded
 - The Award Ratio of 100% applies to the post-2000 years.
 - An Award Ratio of 20% applies to the pre-2001 years.
- IBNR Award Ratios – the IBNR Award Ratios that are shown on each page are the ratios of the Ultimate Awarded Claims (Col. 8) and the Reported Claims (Col. 1) from the Grand Total data on page 13 for the pre-2001 years and post-2000 years respectively.
- All of these assumptions have been maintained since the April 1, 2009 filing.

The IBNR amounts in Column 10 are 40% of the SOD IBNR Amounts from Exhibit VII-C. The reasoning for and history of this assumption was provided under Exhibit VII-B-2 above.

Exhibit VIII – FOD Basic Severity and Frequency

A. This page provides a summary of the individual claim details that are shown in Exhibit IX-B for the Federal Basic Severities separately for each of the Four Major Classes, the Four Major Classes Combined, the Other Classes Combined and All Classes Combined.

B-1. Omitted – Reserved for Future Use.

B-2. The objective of these pages is to compare estimates of the Expected Ultimate Awarded Claims to a suitable exposure base. These pages display data on the number of FOD Basic Claims that have been Reported, Awarded or Denied, or that are Pending by Classification and with Subtotals and a Grand Total. Additionally, the IBNR Claim estimates from Exhibit VIII-C are also displayed. IBNR and Pending claims are multiplied by an Award Ratio, since all reported claims do not result in payment awards.

For the exposure base, Developed Payrolls are converted to Estimated Miner Years. Subsequently, Claim Frequencies are calculated on a Miner Year (per 100 Miner Years) basis which began with the filing for April 1, 2011.

Converting Developed Payrolls to Estimated Miner Years, the (Wage) Adjustment Factors are needed since our data shows that workers in certain Bituminous Classes (i.e., Underground and Prep Plant) were paid at a higher rate than workers in other classes. (See Exhibit X-G for this analysis.) The use of a single factor for all classes would overestimate the number of Miner Years in the cited classes and underestimate the number of Miner Years in other classes had a single factor been used to adjust the SAWW in the conversion process.

Each of the Four Major Classes is given its own Award Ratio, except that the data for Anthracite Underground is now incomplete for this purpose. Anthracite Underground was given an Award Ratio of 0.200, based on the actual Award Ratio for this class for the April 1, 2017 Filing. The Other Classes were given the Award Ratio based on the Grand Total data.

The totals and subtotals that are displayed are additions of the Classes listed and may slightly differ from the results derived using the formula in the Source notes.

- C. Pages 1 through 4 (i.e., Exhibit VIII-C-1 through VIII-C-4) display FOD Basic Reported Claims for the Four (4) Major Classifications. Page 5 (i.e., Exhibit VIII-C-5) displays FOD Basic Reported Claims for the six (6) Other Classifications combined. Page 6 (i.e., Exhibit VIII-C-6) shows FOD Basic Reported Claims for All Classifications combined. (FOD Excess Reported Claims are addressed in Exhibits VII-B-2 and VII-L.)

These pages show the procedure used to calculate Incurred But Not Reported (IBNR) Claims. Incremental Changes in Reported Claims are calculated and then converted to a percentage of Developed Payroll (in \$Millions). The actual experience is averaged and then smoothed by ordering the actual data from largest to smallest.

For the six (6) Other Classifications, the All Classifications estimates were used to arrive at the base IBNR. Pages 7 and 8 (i.e., Exhibit VIII-C-7 and VIII-C-8) show the IBNR calculations for the Other Classifications. Adjustment Factors were used for each of the Other Classifications to lower the expected probability of having a FOD Basic claim since the Other Classifications have produced fewer FOD Basic claims and lower FOD Basic claim frequencies than the All Classifications experience. The adjustment factors were not changed this year.

- D. This page displays the Table of the Monthly Federal Black Lung Benefits from 1981 to the present. It also shows the changes in benefits from year to year and the selected change rates that were used to project FOD losses to the average accident date anticipated for the proposed filing.
- E. Omitted – Reserved for Future Use.
- F. These pages model changes to Claiming activity (i.e., Claim Awarding and Reopening) for Federal Basic OD Claims that are related to Federal Black Lung Regulation revisions that were issued on January 19, 2001. These revisions changed the procedures and criteria for obtaining Federal Black Lung Benefits resulting in the natural expectation that the frequency of Federal Black Lung claims would increase. Some of the regulatory changes involved limiting evidence and time to contest, broadening the definition of Black Lung disease, weakening the criteria for determining disability, offering new claim status (as opposed to subsequent and reopened status) to claims, and changing attorney and witness fees.

These changes were expected to increase claim frequencies in the post-2000 years to a greater level than had been previously observed and to increase the claim frequencies in the pre-2001 years as well. Most parties agreed that frequencies, severities and costs generally would increase under these revisions. Even the U.S. Department of Labor conceded that costs would rise between 15% and 60%.

For the post-2000 years, the CMCRB believes that Pending claims will be awarded at a higher rate than previously observed, so Pending claims are assumed to have an Award Ratio of 30%. Similarly, the CMCRB also believes that some Denied claims will be re-opened and awarded under the more liberal standards of proof, so 5% of Denied claims are assumed to be Reopened with a subsequent Award Ratio of 100%. These assumptions were first included in the April 1, 2009 filing. The derivation and history of these parameters has been discussed in prior filings, so a brief discussion is provided below.

For the years 1989 to 1999 as of August 2000, the following claim statuses were noted: 122 Awarded, 121 Pending, 447 Denied and 690 Reported.

The claim statuses for 121 Pending claims were updated as of August 2007. The following updated claim statuses were noted: 22 Awarded, 21 Pending, 76 Denied and 2 “Other”.

This data implies an Award Ratio of 22.45% which is equal to (22) divided by (22+76). This ratio serves as an estimate of the percentage of Pending claims that will be ultimately Awarded.

The claim statuses for the 447 Denied claims were also updated as of August 2007. The following updated claim statuses were noted: 6 Awarded, 12 Pending and 429 Denied.

This data implies an Award Ratio for Denied Claims of about 2% which is equal to (8.7) divided by (447). The numerator of 8.7 is equal to (6) plus (12) x (22.45%). This ratio serves as an estimate of the percentage of Denied claims that will be ultimately Awarded.

The IBNR Award Ratio that is shown on each page is the ratio of the Total Ultimate Awarded Claims (Col. 8) and the Total Reported Claims (Col. 1) from the Grand Total data on page 13.

Exhibit IX – Individual Claim Detail for SOD and FOD Claim Severities

- A. These pages display the Individual Claim Detail for State and FOD Excess claim severities separately for the Four Major Classes and for the Other Classes combined. The Individual Claim Details come from the CMCRB’s Occupational Disease Severity Model (“Model”). Benefit amounts are accumulated over the lifetime of the miner (and spouse, if applicable) with mortality factors included in the calculation. For SOD and FOD

Excess, this Model evaluates claims both on a Permanent Total basis and on a Permanent Partial basis.

To estimate the value of each claim, each claim is assumed to occur during the midpoint of the proposed filing period. This assumption requires that the historical wage amount recorded for each claim be adjusted to the midpoint of the proposed filing period. Details of these adjustments are presented in Exhibit VII-H.

These pages first display claim values (or projected benefits) for a “Base” scenario (i.e., before the impact of Act 57) for SOD (including Medical) and FOD Excess. These values are associated with the Awarded and Pending claims reported to the CMCRB for exposure years 1990 through 2018. For the Base Scenario, all claims are calculated with lifetime SOD Indemnity (Benefit) payments (i.e., Permanent Total basis) except for the Commuted or Compromised claims.

These pages also display claim values for an “All Permanent Partial” scenario. Values for the All Permanent Partial scenario are calculated because the implementation of American Medical Association (AMA) Guidelines to evaluate the percentage of disability was expected to reduce the portion of claims evaluated as Permanent Total. For this scenario, all claims other than Commuted, Compromised, or Widow Only were calculated with only 630 weeks of SOD Indemnity (Benefit) payments.

The 630-week duration was calculated as follows:

The AMA Guidelines do not apply prior to the expiration of an initial 104-week benefit period. With timely filing for review, timely occurrence of the hearing and timely issuance of a decision, a floor of 604 weeks exists ($104 + 500$). The actual period will be longer than this 604-week floor. It is estimated that the anticipated average benefit period for claims reviewed under the AMA Guidelines will exceed the floor by one-half of a year, or 26 weeks. Therefore, the All Permanent Partial Scenario was based upon 630 weeks ($104 + 26 + 500$).

These pages display Social Security Offsets/Onsets. These Offsets/Onsets are based on the Social Security Formulas – Historic Primary Insurance Amounts (PIA) and Projections in Exhibit VII-J. The decrease (or Offset) to SOD benefits is 50% of the miner’s Social Security retirement benefit, limited to the amount of the SOD benefit. This adjustment results in a decrease to SOD Indemnity benefits and an increase to FOD Excess Indemnity benefits.

These pages also display Pension Offsets/Onsets. These Offsets/Onsets are based on the Pension Offset percentage calculated in Exhibit VII-G Page 2. The full amount of the pension is available as an Offset to the SOD benefit, with the constraint that the SOD benefit minus the Social Security and Private Pension Offsets must not be less than zero. This adjustment results in a decrease to SOD Indemnity benefits and an increase to FOD Excess Indemnity benefits.

Four (4) provisions in Act 57 of 1996 were expected to reduce SOD benefits (and Traumatic benefits). These provisions involved the:

1. AMA Guidelines
2. Social Security Offsets/Onsets
3. Pension Offsets/Onsets and
4. Wage Level Offsets/Onsets.

Consequently, the CMCRB has annually submitted estimates for SOD Loss Costs that reflect the anticipated savings from these provisions. Correspondingly, but not in the same proportions, the CMCRB has submitted estimates for FOD Excess Loss Costs that reflect the anticipated additional costs from these provisions that would be shifted to Federal secondary claims since the cross-over point for Federal benefits would occur quicker or earlier than under the old law.

This filing continues the process of phasing out some of the SOD Offsets and some of the FOD Excess Onsets.

- AMA Guidelines – While the CMCRB continues to calculate both a Permanent Total (or Base) scenario and an All Permanent Partial scenario, the Base scenario now receives 100% of the weight in the averaging of these two values. The weight given to the All Permanent Partial scenario has been reduced to zero since no such claims have emerged.
 - Social Security and Pension Offsets/Onsets – The CMCRB continues to use the original assumptions for these provisions due to the absence of actual claim data in this regard.
 - Wage Level Offsets/Onsets – The CMCRB annually updates the offset/onset amount in Exhibit VII-G Page 1. The SOD Offset percentage decreased from 1.2290% to 1.1866%.
- B. These pages display the Individual Claim Detail for Federal Basic OD claim severities separately for the Four Major Classes and for the Other Classes. The Individual Claim Details come from the CMCRB's Occupational Disease Severity Model ("Model"). Benefit amounts are accumulated over the lifetime of the miner (and spouse, if applicable) with mortality factors included in the calculation.

These pages (Exhibit IX-A and IX-B) provide a source for the claim severity figures in Exhibits VII and VIII. No changes, except updates, were made in any of the formula used to run the Model. For example, the input parameters used to calculate the Medical Severities on these pages were updated to reflect inflation considerations.

Exhibit X – Payrolls – Developments and Adjustments

- A. Developed and Adjusted Payrolls are displayed by year, by coverage and by classification. Payrolls occasionally differ by coverage for the reasons addressed in

Exhibit X-C. Page 1 provides Traumatic Payrolls; Page 2 provides SOD Payrolls; and Page 3 provides FOD Payrolls.

- B. Developed Traumatic Payrolls are extended at current loss cost level to calculate on-level Loss Cost Premium by year for eleven (11) years and by classification on Page 1. Rating values from the CMCRB's latest loss cost filing are shown on Pages 2 and 3.
- C. Developed Traumatic Payrolls are first adjusted to obtain Developed SOD Payroll by showing the amount of Anthracite Underground payroll that is assigned to the Bituminous Underground classification related to the UAE decision on Pages 4 and 5. Otherwise, Developed Traumatic Payrolls are equal to Developed SOD Payrolls.

Then, Developed SOD Payrolls are adjusted to obtain Developed FOD Payroll on Pages 1 through 3. The Federal Exempt Reported Payroll is the Traumatic Payroll for insureds that purchase State Act coverage (Traumatic and SOD), but that select to self-insure for FOD coverage. Also, Developed SOD Payrolls are further adjusted to obtain Developed FOD Payrolls for Executive Officers, Sole proprietors and Partners of Partnerships that elected not to purchase State Act coverage. These individuals can elect not to purchase State Act coverage, but cannot elect not to purchase FOD coverage.

- D. Reported Payrolls by classification are projected to Developed Payrolls using the Development Factors calculated in Exhibit X-E. Developed Payrolls are the CMCRB's estimated ultimate or final payroll level for each Accident Year.
- E. Payroll Development Factors are calculated first from report-to-report level and then from report-to-ultimate level.
- F. SOD and FOD Claim Frequencies from the CMCRB's latest loss cost filing are shown.
- G. Reported Average Weekly Wages for Coal Classes are indexed to the Statewide Average Weekly Wage (SAWW). These indexes are used in the calculation of SOD and FOD Claim Frequencies.

Exhibit XI – Special Assessments

In Section A, the fiscal year budget for the Office of Small Business Advocate is compared to the insurance carrier paid losses to produce the Small Business Advocate Assessment Factor or Ratio. This amount is loaded into the CMCRB's Manual Loss Costs.

In Section B, the fiscal year budgets for the listed Funds are compared to the Employer Assessment Premium Base to produce the Employer Assessment Factor. This amount is not loaded into the CMCRB's Manual Loss Costs, but is treated as a separate calculation in the determination of policy premium. This amount is the estimated provision for Pennsylvania's Administrative Fund, Subsequent Injury Fund, Supersedeas Fund and Uninsured Employer Guaranty Fund.

Exhibit XII – Catastrophe Provision

The CMCRB caps or limits losses for individual Traumatic claims at \$1,250,000 in the Traumatic Loss Cost Indications by classification in Exhibit V-B which uses data for the five (5) most recent Accident Years. In this exhibit, the CMCRB calculates provisions for these large losses using data for the twenty (20) most recent Accident Years. The CMCRB expresses these considerations as loss costs which provide for potential future catastrophic loss events. These amounts, which vary by classification, are loaded into the CMCRB's Manual Loss Costs.

- A. The overall catastrophe provision (or Loss Costs) is distributed among the ten (10) Traumatic classifications based on the Developed Payrolls for the most recent Accident Year and the noted Hazard Weights.
- B. The Number of Excess Claims and Excess Loss Dollars in excess of \$1,250,000 are summarized by Accident Year. The current Accident Year Developed Payroll is compared to the Average Catastrophe Excess Loss over the twenty (20) most recent Accident Years to develop the Catastrophe Loss Cost.
- C. Information for the individual Traumatic losses that exceed the \$1,250,000 threshold is shown including the trend factor used to bring losses to the current loss level. Beginning with the April 1, 2018 filing, all losses in the twenty (20) most recent Accident Years are reported on a Post-Act 44 basis and do not require an Act 44 adjustment. The Statewide Average Weekly Wage Index is used as the Trend factor and is applied to both Indemnity and Medical Losses. The use of this index seems appropriate since Indemnity losses are a direct function of wages and Act 44 restricts changes in Medical costs to the change in the Statewide Average Weekly Wage.
- D. Trend Factors (or factors that are used to bring historical Indemnity and Medical losses to current loss level) for Indemnity and Medical losses are calculated based on the Statewide Average Weekly Wage (SAWW) that is published for Pennsylvania. The CMCRB projects the SAWW to the average accident date associated with the requested effective date for this filing based on the review of the yearly changes that are shown.
- E. The Number of Excess Claims and Excess Loss Dollars in excess of \$1,250,000 are summarized by classification (or Class Code).

Exhibit XIII – Traumatic Experience Rating Plan

The CMCRB proposes to maintain the major features of the Traumatic Experience Rating Plan and to update the associated plan parameters. The major features are:

- The primary limiting value for basic ratable losses remains at \$50,000 per occurrence.
- The secondary limiting value for excess ratable losses remains at \$150,000 per occurrence.
- The eligibility requirement of at least \$300,000 in modified Traumatic payroll during the three (3) year experience is maintained.

- The shape of the Credibility Table is also unchanged.
- A. Page 1 shows the derivation of the Expected Loss Costs (or Values) based on the Unloaded Loss Costs and the Split of Total Losses by Layer. The proposed total limits loss costs were unloaded for loss-based assessments, the Small Business Advocate, Merit Rating Off-Balance, Safety Committee Off-Balance, Catastrophe Loading, loss development and trend to calculate the expected losses by layer. These unloaded, de-trended, undeveloped loss costs were then divided into layers based on the six-year average of actual losses by layer at the same maturity (report) level.

Page 2 shows the calculations for the weighted loss development and loss trend factors. These factors are used on page 1.

Page 3 shows the basic and ratable excess credibility amounts by size of risk (i.e., modified 3-year payroll) based on the proposed overall Unloaded Loss Cost. The primary layer table tracks the shape of the PCR table converted from expected losses to Payroll using the proposed overall Unloaded Loss Cost underlying this filing. The table for the excess ratable layer was also updated based on the proposed overall Unloaded Loss Cost underlying this filing.

- B. These pages provide comparisons of the current Experience Mods (as calculated and released by the CMCRB with last year's filing) to the proposed Experience Mods, by file number. In total, there are few new experience-rated accounts. Some accounts which were experience rated last year were not eligible this year. The Experience Rating Plan's Off-Balance factor was calculated to be 1.0003. Each indicated mod was adjusted by this off-balance factor so that the Plan is revenue neutral.
- C. The CMCRB caps indicated Experience Mod increases and decreases at 0.35. This page shows files that are affected by this capping.

Additionally, the CMCRB plans to continue the capping of Experience Mods for small accounts (which is part of the currently approved Experience Rating Plan) as follows:

Less than \$499,999 in payroll	max mod 1.20
\$500,000 to \$749,999 in payroll	max mod 1.30
\$750,000 to \$999,999 in payroll	max mod 1.40

Exhibit XIV – Merit Rating and Safety Committee Credit Off-Balance Calculations

- A. Page 1 shows the calculation of the Merit Rating Plan Off-Balance Factor, which is equal to the ratio of proposed Unloaded Loss Cost Premium to the proposed Unloaded Loss Cost Premium after Merit Rating Credits and Surcharges. Page 2 shows Developed Payroll for the most recent Accident Year in total and separately for Experience Rated, Merit Rated and Manual Rates risks. For Merit Rated risks, the Payroll is also shown separately for Merit Credit and Merit Surcharged risks.

- B. This page shows the calculation of the Safety Committee Credit Off-Balance Factor. This factor is equal to the ratio of proposed Unloaded Loss Cost Premium to proposed Unloaded Loss Cost Premium after Safety Committee credits.

Disclosures

The CMCRB offers the following disclosures (i.e., potential constraints or limitations) concerning the conclusions in this report specifically related to potential risk and/or uncertainty. The Proposed Loss Costs do not include any provision for the risk and/or uncertainty that may be inherent in these reserve estimates or in these loss cost projections. While the CMCRB understands that the applicable Statements of Principles promulgated by the Casualty Actuarial Society advocate for a provision for uncertainty, the CMCRB believes that its approach is acceptable and reasonable, because individual carriers can decide whether or not to include a provision for uncertainty in the determination of their loss cost multipliers.

Although this report complies with applicable Actuarial Standards of Practice and Statements of Principles, users of this report should be aware that the projections in this report involve estimates that are inherently uncertain. This uncertainty stems from a dependence of the amount of future claims payments on facts and circumstances that are unknown at this time. Some of these unknown facts and circumstances may involve, but may not necessarily be limited to, the following:

- Changes in claim reserving practices or settlement practices,
- Changes in the legal, regulatory, economic or social environments,
- Statistical variation from the projected expected values – especially given the fairly modest size of the CMCRB’s database and
- Future emergence of new classes of losses or types of losses that are not sufficiently represented in the historical database.

The CMCRB believes that one potential source of instability in Traumatic Claim Frequencies (and possibly Severities) that deserves specific mention involves an actual or perceived change in the coal mining work force demographics. The CMCRB has heard reports from member companies that a shift in the Pennsylvania coal mining work force began during 2016 and has continued into 2019 where older, more experienced miners are being replaced by younger, less experienced miners. The CMCRB has also read reports (e.g., see MSHA’s News Release posted June 6, 2017) about this same shift and the potential impact on losses related to it. While the CMCRB does not have access to data to corroborate this change or estimate its effect, the CMCRB understands that MSHA’s opinion is that less experienced miners – both at a mine and at a specific occupation – suffer injuries at a higher rate than more experienced miners. The CMCRB has not directly or indirectly taken this reported demographic shift or its effect into consideration in the subject filing. However, the CMCRB believes that this phenomenon potentially adds to the uncertainty associated with the subject filing, especially concerning the lack of information that is available to predict when the demographic shift will stop or achieve a new demographic equilibrium.

The CMCRB believes that another potential source of instability involves the influx of new and large entities into the CMCRB's database. On Exhibit X-A, the influx of these new entities is associated with the significant changes in payroll between 2013 and 2018:

- Traumatic and SOD payroll increased by about \$123 million or 41% from 2013 to 2014. However, FOD payroll increased by about \$28 million or 10% from 2013 to 2014.
- Traumatic and SOD payroll decreased by about \$74 million or 17% from 2014 to 2015. FOD payroll decreased by about \$60 million or 19% from 2014 to 2015.
- Traumatic and SOD payroll decreased by about \$96 million or 27% from 2015 to 2016. FOD payroll decreased by about \$44 million or 17% from 2015 to 2016.
- The entities that produced the large Traumatic and SOD increases from 2013 to 2014 remained self-insured for FOD exposures through the first half of 2016, but began insuring their FOD exposures at that time.
- For 2017, Traumatic and SOD payroll increased by about \$35 million or 14%. FOD payroll increased by about \$68 million or 31%. However, for 2017, Traumatic and SOD payroll is once again almost the same as FOD payroll.
- For 2018, payrolls increased by 5-6% with Traumatic and SOD again almost the same as FOD.

Additionally, the CMCRB believes that the conclusions in this report are consistent with the combined experience of all carriers in the CMCRB's database. However, the CMCRB acknowledges that the experience of the CMCRB's individual members companies may be different (or may be perceived to be different) from the aggregate experience of the CMCRB's total membership.

Please direct any questions concerning this report to:

Charles A. ("Chuck") Romberger, ACAS, MAAA, CPCU, ARM
Attn: Executive Director – Coal Mine Compensation Rating Bureau of Pennsylvania
300 North Second Street – Suite 403
Harrisburg, PA 17101
Phone / Fax: 717-238-5020
Email: cromberger.cmcrb@verizon.net

Actuarial Report – Appendix A
Consideration of House Bill 1846 of 2014 (HB 1846)
Regarding the CMCRB’s April 1, 2020 Loss Cost Filing

The CMCRB collects workers compensation medical loss information that is aggregated at the claim level. This information does not include medical bill line item detail. Consequently, the CMCRB maintains its prior assertion that the evaluation of HB 1846 that was prepared by the Pennsylvania Compensation Rating Bureau (“PCRB”) is the best analysis of this law that is available to the CMCRB at this time.

For the April 1, 2016 Loss Cost Filing, the CMCRB used the savings approximation of 1.32% (or a factor of 0.9868) that was promulgated by the PCRB in Exhibit 34 to PCRB Proposal C-366 – April 1, 2016. The CMCRB uniformly applied this factor to each of the five Accident Years used in the Traumatic Loss Cost indications (i.e., 2010 – 2014). The PCRB’s exhibit is available online at <http://www.pcrb.com/pcrb/filings/c366/Exhibit%2034.pdf>.

The CMCRB notes that this savings approximation consists of two components:

- 1) A medical savings adjustment factor of approximately 0.9908 and
- 2) An annual medical severity trend deflection factor of approximately 0.9881.

For the April 1, 2017, April 1, 2018, and April 1, 2019 Loss Cost Filings, the CMCRB utilized these two components to derive unique adjustment factors for each of the five Accident Years used in those filings to prepare Traumatic Loss Cost indications. For the April 1, 2020 Loss Cost Filing, the CMCRB proposes a similar approach and provides this appendix to describe this process and the attached exhibits in support of these calculations.

Appendix A-1 identifies the components of the data set that the PCRB utilized to calculate the medical savings adjustment factor of approximately 0.9908. The PCRB identifies this data set as the “2013 Dataset”. Based on PCRB’s description, the 2013 Dataset seems to be a reasonably close approximation of Calendar Year 2013 Paid Losses. So, this medical savings adjustment factor represents the factor that would be applied to *actual* Calendar Year 2013 Paid Losses on a pre-HB 1846 basis to produce *expected* Calendar Year 2013 Paid Losses on a post-HB 1846 basis.

Appendix A-2 shows the application of the annual medical severity trend deflection adjustment to the medical savings adjustment factor. The annual medical severity trend deflection factor is applied on a calendar year basis. This triangle represents the factors that would be applied to the actual Accident Year Incremental Paid Losses on a pre-HB 1846 basis to produce expected Accident Year Incremental Paid Losses on a post-HB 1846 basis. The CMCRB used the following estimations in these calculations:

- 1) Effective date – Since HB 1846 became effective December 26, 2014, the CMCRB adopts January 1, 2015 as the estimated effective date to ease the estimation process.
- 2) Transition – While HB 1846 was effective December 26, 2014 (estimated as January 1, 2015), the CMCRB believes that a one-year transition to benefits on a post-HB 1846

basis is reasonable. Consequently, the CMCRB selects the factor for Calendar Year 2015 Paid Losses judgmentally as the average of the Calendar Year 2014 factor and unity.

- 3) Post-transition – The CMCRB believes that Calendar Year 2016 Paid Losses and Calendar Year 2017 Paid and Outstanding Losses are fully on a post-law basis and selects unity as the adjustment factor to these losses.

Appendix A-3 displays the derivation of the CMCRB's Paid Loss Distribution. The CMCRB notes that the Selected Distribution is very close to the Actual Distribution through 8th report level. Beyond 8th report level, the CMCRB notes that it favored accelerating the distribution for simplicity in subsequent calculations. This distribution is necessary to prepare Accident Year Incremental Paid and Outstanding Losses.

Appendix A-4 distributes the Selected Paid Loss Distribution into an Accident Year loss development triangle. The Outstanding Loss Distribution is also displayed.

- Row 1 represents the portion of ultimate losses that are expected to be paid for each Accident Year based on current report levels.
- Row 2 shows the portion of ultimate losses that are expected to be outstanding for each Accident Year based on current report levels.
- Row 3 shows the sum of Rows 1 and 2 which sums to unity or 100% for each Accident Year.

Appendix A-5 shows the derivation of the Accident Year specific adjustment factors for HB 1846. The triangle on this page is the cell-by-cell product of the HB 1846 Medical Savings Adjustment Factors with Medical Trend Deflection Adjustment (A-2) and the Estimated Incremental Paid Losses (A-4). In other words, this triangle represents the Incremental Paid Losses on a post-HB 1846 basis.

- Row 1 represents the portion of ultimate losses that are expected to be paid for each Accident Year based on current report levels after Paid Losses are adjusted to reflect HB 1846 savings.
- Row 2 shows the portion of ultimate losses that are expected to be outstanding for each Accident Year based on current report levels.
- Row 3 shows the HB 1846 savings factor to be applied to outstanding losses.
- Row 4 reflects outstanding losses adjusted to reflect HB 1846 savings.
- Row 5 displays the factor to adjust Ultimate Accident Year losses to reflect HB 1846 savings. This row is also re-displayed in the column to the right.

Attachments

- 1) Appendix A-1 through Appendix A-5

Components of the "2013 Dataset" with Medical Savings Adjustment Factor

	Accident Year													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1st									0.9908					
2nd								0.9908						
3rd							0.9908							
4th						0.9908								
5th					0.9908									
6th				0.9908										
7th			0.9908											
8th		0.9908												
9th	0.9908													
10th														

The PCRB estimated HB 1846 cost savings from Medical Data Call records with dates of service during CY 2013 with payments made through the 1st Q of CY 2014 and referred to these records as the 2013 Dataset. These boxes represent a reasonably close approximation of the data components of the 2013 Dataset filled with the savings estimate of 0.92% or a factor of 0.9908.

Source: PCRB Proposal C-366 - April 1, 2016 Loss Cost Filing - Exhibit 34
<http://www.pcrb.com/pcrb/filings/c366/Exhibit%2034.pdf>

Medical Savings Adjustment Factor with Medical Trend Deflection Adjustment

Report Level	Accident Year													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1st	1.0000	1.0000	1.0000	1.0000	0.9984	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000
2nd	1.0000	1.0000	1.0000	0.9984	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000	
3rd	1.0000	1.0000	0.9984	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000		
4th	1.0000	0.9984	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000			
5th	0.9984	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000				
6th	0.9965	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000					
7th	0.9946	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000						
8th	0.9927	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000							
9th	0.9908	0.9889	0.9945	1.0000	1.0000	1.0000								
10th	0.9889	0.9945	1.0000	1.0000	1.0000									

The PCRB also estimated that the effects of HB 1846 would reduce the growth rate of medical costs at an annual rate of 0.19% or a factor of 0.9981.

CY 2013	Annual	CY	2005-8	1.0000	-5	1.0000 = 0.9908 times (0.9981 ^ -5). Capped at unity.
(Base)	Change	CY	2009	0.9984	-4	0.9984 = 0.9908 times (0.9981 ^ -4)
Adj.	in Adj.	CY	2010	0.9965	-3	0.9965 = 0.9908 times (0.9981 ^ -3)
0.9908	0.9981	CY	2011	0.9946	-2	0.9946 = 0.9908 times (0.9981 ^ -2)
		CY	2012	0.9927	-1	0.9927 = 0.9908 times (0.9981 ^ -1)
		CY	2013	0.9908	0	0.9908 = 0.9908 times (0.9981 ^ 0)
		CY	2014	0.9889	1	0.9889 = 0.9908 times (0.9981 ^ 1)
		CY	2015	0.9945	*	
		CY	2016	1.0000	**	
		CY	2017	1.0000	**	
		CY	2018	1.0000	**	
		Outstanding at:	2018	1.0000	**	

- * The Adjustment for Calendar Year 2015 Paid Losses was judgmentally selected to be the average of the last data point and unity to transition to benefits on a post-HB 1846 basis.
- ** The Adjustments for Calendar Years 2016, 2017 and 2018 Paid Losses and Outstanding Losses were selected to be unity since data is expected to be reported on a post-HB 1846 basis because HB 1846 became effective in December 2014.

Source: PCRB Proposal C-366 - April 1, 2016 Loss Cost Filing - Exhibit 34
<http://www.pcrb.com/pcrb/filings/c366/Exhibit%2034.pdf>

Derivation of Traumatic Medical Incremental Paid Loss Distribution

Traumatic Medical Reported Paid Losses as of 04-30-2019 from Exhibit VI-E:

<u>Report</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
1	1,934,714	2,751,976	3,211,934	3,607,221	2,405,205	3,932,999	2,543,986	2,330,259	3,485,615	3,818,681
2	2,474,907	3,388,757	4,428,864	4,556,072	3,576,391	5,142,203	3,295,697	3,381,307	4,550,558	
3	2,729,947	3,681,854	4,791,312	4,910,148	3,732,065	5,725,513	3,579,670	3,601,813		
4	2,838,307	4,050,370	4,980,927	5,036,044	3,783,913	5,806,872	3,711,776			
5	2,888,987	4,182,550	5,232,645	5,071,629	3,837,635	5,825,434				
6	2,911,117	4,258,152	5,334,986	5,142,197	3,895,586					
7	2,933,165	4,295,252	5,480,157	5,165,531						
8	2,960,275	4,307,948	5,547,144							
9	2,993,791	4,313,892								
10	3,030,936									

Traumatic Medical Reported Incurred Losses as of 04-30-2018 from Exhibit VI-B-4:

3,137,264	4,314,642	6,232,068	5,458,952	4,082,497	5,883,352	3,824,391	4,190,581	5,882,211	5,562,604
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Traumatic Medical Incurred Loss Development Factors from Exhibit V-C-2:

1.0831	1.0883	1.0937	1.0993	1.1051	1.1111	1.1173	1.1238	1.1076	1.1792
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Ultimate Traumatic Medical Losses = Medical Incurred Losses times Medical Incurred Loss Development Factors:

3,397,971	4,695,625	6,816,013	6,001,026	4,511,567	6,536,992	4,272,992	4,709,375	6,515,137	6,559,423
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Percent Paid = Traumatic Medical Reported Paid Losses divided by Ultimate Traumatic Medical Losses:

<u>Report</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>Average</u>	<u>Ex Hi/Lo</u>	<u>Selected Incremental</u>	<u>Selected Cumulative</u>
1	56.94%	58.61%	47.12%	60.11%	53.31%	60.17%	59.54%	49.48%	53.50%	58.22%	55.70%	56.21%	56.00%	56.00%
2	72.83%	72.17%	64.98%	75.92%	79.27%	78.66%	77.13%	71.80%	69.85%		73.62%	74.05%	18.00%	74.00%
3	80.34%	78.41%	70.29%	81.82%	82.72%	87.59%	83.77%	76.48%			80.18%	80.59%	6.50%	80.50%
4	83.53%	86.26%	73.08%	83.92%	83.87%	88.83%	86.87%				83.77%	84.89%	3.50%	84.00%
5	85.02%	89.07%	76.77%	84.51%	85.06%	89.11%					84.92%	85.92%	1.00%	85.00%
6	85.67%	90.68%	78.27%	85.69%	86.35%						85.33%	85.90%	0.50%	85.50%
7	86.32%	91.47%	80.40%	86.08%							86.07%	86.20%	0.50%	86.00%
8	87.12%	91.74%	81.38%								86.75%	87.12%	1.00%	87.00%
9	88.11%	91.87%									89.99%	89.99%	2.00%	89.00%
10	89.20%										89.20%	89.20%	11.00%	100.00%

Notes: The selected distribution is a very close approximation to the actual distribution through 8th report level.
The importance of the selected distribution diminishes beyond 8th report and was accelerated for simplicity.

Incremental Paid and Outstanding Medical Losses per Report Level

	Accident Year											Selected	Cumulative	Outstanding
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Incremental Paid Losses	Paid Losses	Losses
Report Level														
1st	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	0.5600	56.00%	56.00%	44.00%
2nd	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800		18.00%	74.00%	26.00%
3rd	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650			6.50%	80.50%	19.50%
4th	0.0350	0.0350	0.0350	0.0350	0.0350	0.0350	0.0350	0.0350				3.50%	84.00%	16.00%
5th	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100					1.00%	85.00%	15.00%
6th	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050						0.50%	85.50%	14.50%
7th	0.0050	0.0050	0.0050	0.0050	0.0050							0.50%	86.00%	14.00%
8th	0.0100	0.0100	0.0100	0.0100								1.00%	87.00%	13.00%
9th	0.0200	0.0200	0.0200									2.00%	89.00%	11.00%
10th	0.1100	0.1100										11.00%	100.00%	0.00%
1)	1.0000	1.0000	0.8900	0.8700	0.8600	0.8550	0.8500	0.8400	0.8050	0.7400	0.5600			
2)	0.0000	0.0000	0.1100	0.1300	0.1400	0.1450	0.1500	0.1600	0.1950	0.2600	0.4400			
3)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			

Notes:

- 1) The anticipated Cumulative Paid Losses which equal the sums of the columns above.
- 2) The remaining anticipated Outstanding Losses for each Accident Year.
- 3) The sum of rows 1 and 2.

Combination - Incremental Paid Losses & Adjustment/Deflection Factors

	Accident Year											Selected	Cumulative	Outstanding
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Incremental Paid Losses	Paid Losses	Losses
Report Level	1st	0.5600	0.5591	0.5580	0.5570	0.5559	0.5548	0.5538	0.5569	0.5600	0.5600	56.00%	56.00%	44.00%
	2nd	0.1797	0.1794	0.1790	0.1787	0.1783	0.1780	0.1790	0.1800	0.1800	0.1800	18.00%	74.00%	26.00%
	3rd	0.0648	0.0646	0.0645	0.0644	0.0643	0.0646	0.0650	0.0650	0.0650		6.50%	80.50%	19.50%
	4th	0.0348	0.0347	0.0347	0.0346	0.0348	0.0350	0.0350	0.0350			3.50%	84.00%	16.00%
	5th	0.0099	0.0099	0.0099	0.0099	0.0100	0.0100	0.0100				1.00%	85.00%	15.00%
	6th	0.0050	0.0049	0.0050	0.0050	0.0050	0.0050					0.50%	85.50%	14.50%
	7th	0.0049	0.0050	0.0050	0.0050	0.0050						0.50%	86.00%	14.00%
	8th	0.0099	0.0100	0.0100	0.0100							1.00%	87.00%	13.00%
	9th	0.0200	0.0200	0.0200								2.00%	89.00%	11.00%
	10th	0.1100	0.1100									11.00%	100.00%	0.00%
	1)	0.9991	0.9977	0.8861	0.8646	0.8533	0.8475	0.8428	0.8369	0.8050	0.7400		Accident	HB 1846
	2)	0.0000	0.0000	0.1100	0.1300	0.1400	0.1450	0.1500	0.1600	0.1950	0.2600		<u>Year</u>	<u>Adj. Factor</u>
	3)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		2008	0.9991
	4)	0.0000	0.0000	0.1100	0.1300	0.1400	0.1450	0.1500	0.1600	0.1950	0.2600		2009	0.9977
	5)	0.9991	0.9977	0.9961	0.9946	0.9933	0.9925	0.9928	0.9969	1.0000	1.0000		2010	0.9961
													2011	0.9946
													2012	0.9933
													2013	0.9925
													2014	0.9928
													2015	0.9969
													2016	1.0000
													2017	1.0000
													2018	1.0000

Notes:

- 1) The anticipated Cumulative Adjusted/Deflected Paid Losses which equal the sums of the columns above.
- 2) The remaining anticipated Outstanding Losses for each Accident Year.
- 3) The selected Adjustment factor for Calendar Year 2018 Outstanding Losses.
- 4) The product of rows 2 and 3.
- 5) The sum of rows 1 and 4.

The triangle above is the cell-by-cell product of the following two triangles:

Medical Savings Adjustment Factor with Medical Trend Deflection Adjustment (Appendix A-2)

Incremental Paid and Outstanding Medical Losses per Report Level (Appendix A-4)

Actuarial Report – Appendix B
Consideration of Protz v. WCAB (Derry Area School District) and
House Bill 1840 (HB 1840 or Act 111 of 2018)
Regarding the CMCRB's April 1, 2020 Loss Cost Filing

The Pennsylvania Supreme Court issued a decision in Protz v. WCAB (Derry Area School District) (the Protz Decision) dated June 20, 2017. In the Protz Decision, the Court ruled that Section 306(a.2) of the Pennsylvania Workers' Compensation Act (the Act) was an unconstitutional delegation of legislative authority. The CMCRB understands that this ruling meant that Section 306(a.2) had to be stricken and that impairment rating evaluations were removed from the Act. The CMCRB notes that this ruling eliminated a cost containment provision that was enacted in the Pennsylvania Workers' Compensation system over 20 years ago.

The CMCRB included a provision (a load to Traumatic Indemnity Losses of 13.37% or 1.1337) in its April 1, 2018 Loss Cost Filing in response to the Protz Decision. Because of data limitations and constraints, this provision was based on PCRFB Filing C-369, dated August 15, 2017.

Subsequent to the CMCRB proposing and implementing its April 1, 2018 Loss Cost Filing, the Pennsylvania Legislature passed HB 1840 that was signed by Governor Wolf on October 24, 2018. The CMCRB understands that this legislation re-established impairment rating evaluations in the Act, amending the impairment threshold from 50% to 35%, and that this legislation also increased the burial benefit in the Act from \$3,000 to \$7,000. More generally, the CMCRB understands that HB 1840 intends to stabilize the PA W.C. system by fixing the portion of the Act that was struck down in the Protz decision while making the other changes described above.

The CMCRB notes that the PCRFB prepared estimations concerning the provisions of HB 1840 and that these estimations were included in the PCRFB's Filing C-373 proposed to be effective January 1, 2019. As it did with the Protz Decision, the CMCRB adopts the PCRFB's estimations concerning both of these provisions in HB 1840:

- 1) Re-establishment of Impairment Rating Evaluations and Revision to Impairment Threshold from 50% to 35%: The PCRFB estimated the impact on Indemnity Benefits (or Indemnity Losses) to be an increase of 1.56% or 1.0156 to move from the pre-Protz Level (i.e., Impairment Rating Threshold of 50%) to the post-HB 1840 Level (i.e., Impairment Rating Threshold of 35%).
- 2) Increase to Burial Benefit: The PCRFB estimated the impact on Indemnity Benefits to be an increase of 0.032% or 1.00032 concerning this benefit increase.

Overall, the CMCRB adopts an HB 1840 adjustment factor of 1.59% or 1.0159 to reflect all of the estimable changes in HB 1840. This HB 1840 adjustment factor of 1.0159 is the product of the two component parts listed above or 1.0156 times 1.0003.

For the April 1, 2019 Loss Cost Filing, the CMCRB uniformly applied the HB 1840 adjustment factor of 1.0159 to Traumatic Indemnity Losses for each of the five accident years (i.e., 2013 through 2017) included in the Traumatic Loss Cost indications. The CMCRB did not find any claims that were included in the data with the April 1, 2019 Loss Cost Filing that appeared to be affected by the Protz Decision. In other words, the CMCRB believed that all of the Traumatic loss data included with the April 1, 2019 Loss Cost Filing continued to be reported on a pre-Protz Decision level.

Application to current data (i.e., to Traumatic Indemnity Losses)

To begin, the CMCRB believes that the PCRB's HB 1840 adjustment factor of 1.0159 continues to be the best available estimate of the anticipated increase in Traumatic Indemnity Losses from a pre-HB 1840 level to a post-HB 1840 level (or more precisely a pre-Protz Decision level to a post-HB 1840 level).

The CMCRB proposes an approach to adjust for this law change that is similar to the approach used for HB 1846 of 2014 and provided in Appendix A. This appendix describes this process and the attached exhibits support these calculations.

Appendix B-1 shows the derivation of the HB 1840 adjustment factor to Indemnity Paid Losses for the 10 most recent Accident Years and Report Levels. For Calendar Years before 2018, the adjustment factor is 1.0159. For Calendar Year 2018, the adjustment factor is 1.0129, derived from the weights shown on this appendix. The CMCRB assumed that Paid Losses would immediately reflect the new law level.

Appendix B-2 shows the derivation of the HB 1840 adjustment factor to Indemnity Outstanding Losses for Calendar Year 2018. The CMCRB assumed that 50% of Outstanding Losses for Calendar Year 2018 reflected the new law level since Calendar Year 2018 reports were to be valued as of April 30, 2019.

Appendix B-3 displays the derivation of the CMCRB's Indemnity Paid Loss Distribution. The CMCRB notes that the Selected Distribution is very close to the Actual Distribution through 9th report level. Beyond 9th report level, the CMCRB notes that it favored accelerating the distribution for simplicity in subsequent calculations. This distribution is necessary to prepare Accident Year Incremental Paid and Outstanding Losses.

Appendix B-4 distributes the Selected Paid Loss Distribution into an Accident Year loss development triangle. The Outstanding Loss Distribution is also displayed.

- Row 1 represents the portion of ultimate losses that are expected to be paid for each Accident Year based on current report levels.
- Row 2 shows the portion of ultimate losses that are expected to be outstanding for each Accident Year based on current report levels.
- Row 3 shows the sum of Rows 1 and 2 which sums to unity or 100% for each Accident Year.

Appendix B-5 shows the derivation of the Accident Year specific adjustment factors for HB 1840. The triangle on this page is the cell-by-cell product of the HB 1840 Adjustment Factors (B-1) and the Estimated Incremental Paid Losses (B-4). In other words, this triangle represents the Incremental Paid Losses on a post-HB 1840 basis.

- Row 1 represents the portion of ultimate losses that are expected to be paid for each Accident Year based on current report levels after Paid Losses are adjusted to reflect HB 1840 savings.
- Row 2 shows the portion of ultimate losses that are expected to be outstanding for each Accident Year based on current report levels.
- Row 3 shows the HB 1840 savings factor to be applied to outstanding losses.
- Row 4 reflects outstanding losses adjusted to reflect HB 1840 savings.
- Row 5 displays the factor to adjust Ultimate Accident Year losses to reflect HB 1840 savings. This row is also re-displayed in the column to the right.

The CMCRB notes that it did not find any claims that were included in the data with the April 1, 2020 Loss Cost Filing that appeared to be affected by the Protz Decision or HB 1840 with the exception of the Funeral Benefits reported on two claims. However, the CMCRB believes that these exceptions are within the HB 1840 adjustment factor assumptions used in this appendix.

Application by Type of Coverage

The CMCRB files Loss Costs for three “types” of coverages:

1. Traumatic – Pennsylvania Workers’ Compensation Act coverage,
2. State Occupational Disease (SOD) – Pennsylvania Occupational Disease Act coverage and
3. Federal Occupational Disease (FOD) – Federal Mine Safety and Health Act coverage.

The CMCRB generally understands that the settlement of SOD claims has not relied upon the Impairment Rating Evaluation (IRE) process and that adjustments for the Protz Decision or HB 1840 for SOD coverage are not necessary. Similarly, the CMCRB knows that the settlement of FOD claims does not rely upon provisions in the Pennsylvania Workers’ Compensation Act and that adjustments for the Protz Decision or HB 1840 for FOD coverage are not necessary.

The CMCRB also understands that the settlement of Traumatic claims has relied upon the IRE process and that adjustments for the Protz Decision and subsequently HB 1840 for Traumatic coverage are necessary. Consequently, the CMCRB’s proposal includes the application of the adjustment factors from Appendix B-5 for Traumatic Indemnity coverage only.

While HB 1840 is expected to directly impact Indemnity Benefits and Losses, this legislation is not expected to directly impact Medical Benefits and Losses. However, as with any significant law change, the CMCRB notes the potential for changes in claiming activity and behavior. These changes have the potential to increase Medical Benefits and Losses going forward, but the CMCRB is not aware of a reliable means to estimate this potential increase at this time. Consequently, the CMCRB adopts a HB 1840 adjustment factor of 1.0000 or 0.0% to be applied to all Traumatic Medical Losses. The CMCRB notes that the PCRB’s Filing C-373 proposed the same approach to Medical Losses.

Retrospective

The CMCRB notes that the above mentioned estimates were prepared exclusively on a prospective basis. The CMCRB analysis and estimates do not include any provisions for the potential for retroactive changes in cost for claims that are currently open or for claims that were previously closed to reopen.

Uncertainty

The CMCRB notes that actuarial estimates in general involve some degree of uncertainty. The CMCRB believes that this is especially true of the estimates and adjustments mentioned above, since these estimations needed to be prepared before a reliable amount of actual experience under HB 1840 was available.

Attachments

- 1) Appendix B-1 through Appendix B-5

Impact of House Bill 1840 on Indemnity Paid Losses

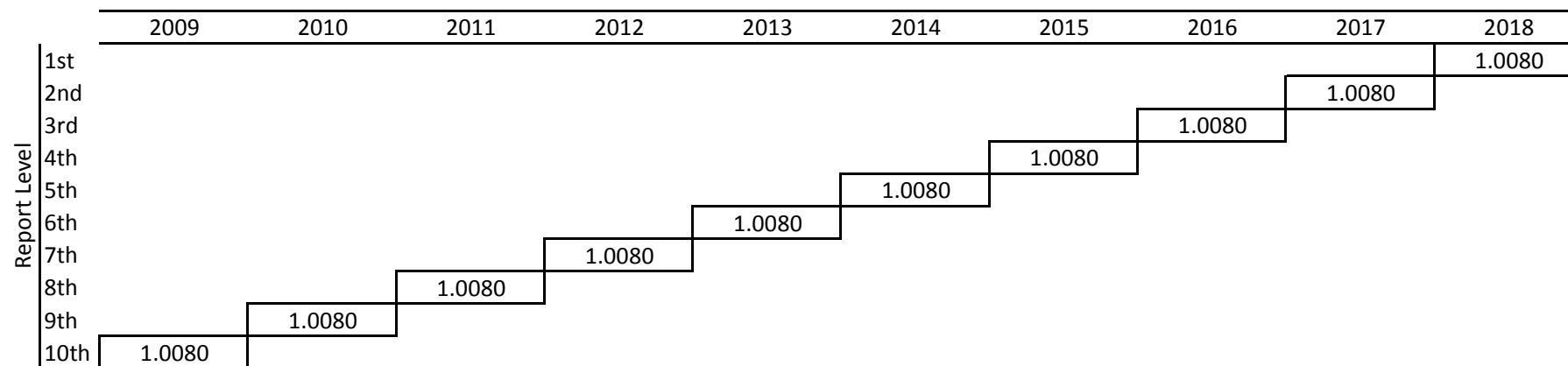
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1st	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0129
2nd	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0129	
3rd	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0129		
4th	1.0159	1.0159	1.0159	1.0159	1.0159	1.0159	1.0129			
5th	1.0159	1.0159	1.0159	1.0159	1.0159	1.0129				
6th	1.0159	1.0159	1.0159	1.0159	1.0129					
7th	1.0159	1.0159	1.0159	1.0129						
8th	1.0159	1.0159	1.0129							
9th	1.0159	1.0129								
10th	1.0129									

The CMCRB assumes that Paid Losses will immediately reflect the new law level. The weights below were judgmentally selected with consideration given to the date that House Bill 1840 of 2018 was signed by Governor Wolf of October 24, 2018.

HB 1840 Indemnity Paid Loss Adjustment Factors:

	Combined	Adjustment	Weight	Adjustment	Weight
HB 1840 Adjustment Factor for Calendar Years prior to 2018	1.0159	1.0159	100.0%	1.0000	0.0%
HB 1840 Adjustment Factor for Calendar Year 2018	1.0129	1.0159	81.4%	1.0000	18.6%
HB 1840 Adjustment Factor for Calendar Years after 2018	1.0000	1.0159	0.0%	1.0000	100.0%

Impact of House Bill 1840 on Indemnity Outstanding Losses



The CMCRB assumes that 50% of Outstanding Case Reserve Losses fully reflected the new law level at first report.

HB 1840 Indemnity Outstanding Loss Adjustment Factors:

HB 1840 Adjustment Factor for Calendar Years prior to 2018
 HB 1840 Adjustment Factor for Calendar Year 2018
 HB 1840 Adjustment Factor for Calendar Years after 2018

Combined	Adjustment	Weight	Adjustment	Weight
1.0159	1.0159	100.0%	1.0000	0.0%
1.0080	1.0159	50.0%	1.0000	50.0%
1.0000	1.0000	0.0%	1.0000	100.0%

Derivation of Traumatic Indemnity Incremental Paid Loss Distribution

Traumatic Indemnity Reported Paid Losses as of 04-30-2019 from Exhibit VI-E:

Report	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	1,490,981	1,524,765	1,786,240	2,050,254	1,899,710	4,015,185	2,666,351	2,517,576	2,656,641	2,186,695
2	2,864,778	3,435,863	3,977,654	5,436,521	4,482,404	7,405,014	6,101,619	5,232,352	5,222,275	
3	4,380,163	4,339,688	6,103,091	7,383,427	6,081,014	10,801,053	7,572,770	6,951,711		
4	4,536,641	6,078,298	7,555,055	8,102,574	6,502,458	11,716,598	9,243,177			
5	4,912,891	6,374,543	7,923,836	8,850,340	6,652,885	12,157,797				
6	5,041,132	6,690,310	8,262,491	9,105,598	7,003,338					
7	5,082,350	7,001,167	8,313,908	9,298,463						
8	5,123,568	7,146,676	8,347,645							
9	5,164,786	7,433,505								
10	5,206,003									

Traumatic Indemnity Reported Incurred Losses as of 04-30-2019 from Exhibit VI-A-4:

5,295,724	7,433,505	8,518,112	9,796,893	7,652,267	12,255,326	11,602,180	8,661,045	8,255,335	5,566,332
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Traumatic Indemnity Incurred Loss Development Factors from Exhibit V-C-1:

1.0155	1.0171	1.0188	1.0205	1.0223	1.0242	1.0509	1.0947	1.2728	2.0500
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Ultimate Traumatic Indemnity Losses = Indemnity Incurred Losses times Indemnity Incurred Loss Development Factors:

5,377,808	7,560,618	8,678,253	9,997,729	7,822,913	12,551,905	12,192,731	9,481,246	10,507,390	11,410,981
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Percent Paid = Traumatic Indemnity Reported Paid Losses divided by Ultimate Traumatic Indemnity Losses:

Report	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average	Ex Hi/Lo	Selected Incremental	Selected Cumulative
1	27.72%	20.17%	20.58%	20.51%	24.28%	31.99%	21.87%	26.55%	25.28%	19.16%	23.81%	23.37%	24.00%	24.00%
2	53.27%	45.44%	45.83%	54.38%	57.30%	59.00%	50.04%	55.19%	49.70%		52.24%	52.24%	28.00%	52.00%
3	81.45%	57.40%	70.33%	73.85%	77.73%	86.05%	62.11%	73.32%			72.78%	73.13%	21.00%	73.00%
4	84.36%	80.39%	87.06%	81.04%	83.12%	93.35%	75.81%				83.59%	83.19%	10.00%	83.00%
5	91.35%	84.31%	91.31%	88.52%	85.04%	96.86%					89.57%	89.06%	6.00%	89.00%
6	93.74%	88.49%	95.21%	91.08%	89.52%						91.61%	91.45%	3.00%	92.00%
7	94.51%	92.60%	95.80%	93.01%							93.98%	93.76%	2.00%	94.00%
8	95.27%	94.53%	96.19%								95.33%	95.27%	1.00%	95.00%
9	96.04%	98.32%									97.18%	97.18%	2.00%	97.00%
10	96.81%										96.81%	96.81%	3.00%	100.00%

Notes: The selected distribution is a very close approximation to the actual distribution through 9th report level.
The importance of the selected distribution diminishes beyond 9th report and was accelerated for simplicity.

Incremental Paid and Outstanding Indemnity Losses per Report Level

											Selected			
											Incremental	Cumulative	Outstanding	
											Paid Losses	Paid Losses	Losses	
Report Level		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
	1st	0.2400	0.2400	0.2400	0.2400	0.2400	0.2400	0.2400	0.2400	0.2400	0.2400	24.00%	24.00%	76.00%
	2nd	0.2800	0.2800	0.2800	0.2800	0.2800	0.2800	0.2800	0.2800	0.2800	0.2800	28.00%	52.00%	48.00%
	3rd	0.2100	0.2100	0.2100	0.2100	0.2100	0.2100	0.2100	0.2100			21.00%	73.00%	27.00%
	4th	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000				10.00%	83.00%	17.00%
	5th	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600					6.00%	89.00%	11.00%
	6th	0.0300	0.0300	0.0300	0.0300	0.0300						3.00%	92.00%	8.00%
	7th	0.0200	0.0200	0.0200	0.0200							2.00%	94.00%	6.00%
	8th	0.0100	0.0100	0.0100								1.00%	95.00%	5.00%
	9th	0.0200	0.0200									2.00%	97.00%	3.00%
10th	0.0300										3.00%	100.00%	0.00%	
1)	1.0000	0.9700	0.9500	0.9400	0.9200	0.8900	0.8300	0.7300	0.5200	0.2400				
2)	0.0000	0.0300	0.0500	0.0600	0.0800	0.1100	0.1700	0.2700	0.4800	0.7600				
3)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				

Notes:

- 1) The anticipated Cumulative Paid Losses which equal the sums of the columns above.
- 2) The remaining anticipated Outstanding Losses for each Accident Year.
- 3) The sum of rows 1 and 2.

Combination - Incremental Paid Losses times Adjustment Factors

											Selected			
											Incremental	Cumulative	Outstanding	
											Paid Losses	Paid Losses	Losses	
Report Level	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018				
	1st	0.2438	0.2438	0.2438	0.2438	0.2438	0.2438	0.2438	0.2438	0.2438	0.2431	24.00%	24.00%	76.00%
	2nd	0.2845	0.2845	0.2845	0.2845	0.2845	0.2845	0.2845	0.2845	0.2836		28.00%	52.00%	48.00%
	3rd	0.2133	0.2133	0.2133	0.2133	0.2133	0.2133	0.2133	0.2127			21.00%	73.00%	27.00%
	4th	0.1016	0.1016	0.1016	0.1016	0.1016	0.1016	0.1013				10.00%	83.00%	17.00%
	5th	0.0610	0.0610	0.0610	0.0610	0.0610	0.0608					6.00%	89.00%	11.00%
	6th	0.0305	0.0305	0.0305	0.0305	0.0304						3.00%	92.00%	8.00%
	7th	0.0203	0.0203	0.0203	0.0203							2.00%	94.00%	6.00%
	8th	0.0102	0.0102	0.0101								1.00%	95.00%	5.00%
	9th	0.0203	0.0203									2.00%	97.00%	3.00%
10th	0.0304										3.00%	100.00%	0.00%	
1)	1.0158	0.9854	0.9651	0.9549	0.9345	0.9040	0.8429	0.7410	0.5274	0.2431		Accident	Adjustment	
2)	0.0000	0.0300	0.0500	0.0600	0.0800	0.1100	0.1700	0.2700	0.4800	0.7600		<u>Year</u>	<u>Factor</u>	
3)	1.0080	1.0080	1.0080	1.0080	1.0080	1.0080	1.0080	1.0080	1.0080	1.0080		2009	1.0158	
4)	0.0000	0.0302	0.0504	0.0605	0.0806	0.1109	0.1714	0.2721	0.4838	0.7660		2010	1.0156	
5)	1.0158	1.0156	1.0155	1.0154	1.0151	1.0149	1.0143	1.0131	1.0112	1.0091		2011	1.0155	
												2012	1.0154	
												2013	1.0151	
												2014	1.0149	
												2015	1.0143	
												2016	1.0131	
												2017	1.0112	
												2018	1.0091	
Notes:														
1) The anticipated Cumulative Adjusted Paid Losses which equal the sums of the columns above.														
2) The remaining anticipated Outstanding Losses for each Accident Year.														
3) The selected Adjustment factor for Calendar Year 2018 Outstanding Losses.														
4) The product of rows 2 and 3.														
5) The sum of rows 1 and 4.														

Notes:

- 1) The anticipated Cumulative Adjusted Paid Losses which equal the sums of the columns above.
- 2) The remaining anticipated Outstanding Losses for each Accident Year.
- 3) The selected Adjustment factor for Calendar Year 2018 Outstanding Losses.
- 4) The product of rows 2 and 3.
- 5) The sum of rows 1 and 4.

The triangle above is the cell-by-cell product of the following two triangles:

Impact of House Bill 1840 on Indemnity Paid Losses (Appendix B-1)

Incremental Paid and Outstanding Indemnity Losses per Report Level (Appendix B-4)

**Coal Mine Compensation Rating Bureau
Current and Proposed Loss Costs
Manual Including Loadings**

	2018 Developed Payroll	(1) Approved Loss Cost Manual	(2) Proposed Loss Cost Manual	(3) Percent Change
Underground Anthracite:				
Traumatic (1010)	\$183,346	\$21.59	\$20.67	-4.3%
State O.D. (1011)	183,346	10.30	12.88	25.0%
*Federal Basic/Ex (0160)	183,346	10.02	9.06	-9.6%
Total	xx	41.91	42.61	1.7%
Underground Bituminous:				
Traumatic (1001)	\$179,699,685	\$6.87	\$6.96	1.3%
State O.D. (1002)	179,699,685	0.50	0.58	16.0%
*Federal Basic/Ex (0158)	179,746,573	0.58	0.59	1.7%
Total	xx	7.95	8.13	2.3%
Surface Anthracite:				
Traumatic (1012)	\$19,677,526	\$10.28	\$8.01	-22.1%
State O.D. (1016)	19,677,526	1.36	1.06	-22.1%
*Federal Basic/Ex (0153)	18,332,737	2.13	1.72	-19.2%
Total	xx	13.77	10.79	-21.6%
Surface Bituminous:				
Traumatic (1014)	\$35,266,431	\$2.09	\$1.85	-11.5%
State O.D. (1013)	35,266,431	0.20	0.25	25.0%
*Federal Basic/Ex (0156)	36,110,426	0.89	0.82	-7.9%
Total	xx	3.18	2.92	-8.2%
Four Standard Classifications:				
Traumatic	\$234,826,988	\$6.45	\$6.29	-2.5%
State O.D.	234,826,988	0.53	0.58	9.4%
*Federal Basic/Ex	234,373,082	0.76	0.72	-5.3%
Total	xx	7.74	7.59	-1.9%

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A
Column (1) Loss Costs (Approved 4/1/2019) - Exhibit X-B-2
Column (2) Proposed - Exhibit I-B, pages 1 and 2
Column (3) Traumatic Column (2) / Column (1)
OD Exhibit III and IV-A

**Coal Mine Compensation Rating Bureau
Current and Proposed Loss Costs
Manual Including Loadings**

		(1) Approved Loss Cost Manual	(2) Proposed Loss Cost Manual	(3) Percent Change
	2018 Developed Payroll			
Coke:				
Traumatic (1469)	\$4,456,795	\$3.57	\$3.83	7.3%
State O.D. (1017)	4,456,795	0.08	0.09	12.5%
<u>*Federal Basic/Ex (0154)</u>	<u>4,456,795</u>	<u>0.10</u>	<u>0.10</u>	<u>0.0%</u>
Total	xx	3.75	4.02	7.2%
Auger:				
Traumatic (1015)	\$560,126	\$11.21	\$9.00	-19.7%
State O.D. (1019)	560,126	0.18	0.18	0.0%
<u>*Federal Basic/Ex (0157)</u>	<u>560,126</u>	<u>0.43</u>	<u>0.44</u>	<u>2.3%</u>
Total	xx	11.82	9.62	-18.6%
Co-Gen Anthracite:				
Traumatic (1021)	\$11,591,488	\$4.86	\$6.09	25.3%
State O.D. (1022)	11,591,488	0.27	0.24	-11.1%
<u>*Federal Basic/Ex (0181)</u>	<u>10,018,416</u>	<u>0.38</u>	<u>0.37</u>	<u>-2.6%</u>
Total	xx	5.51	6.70	21.6%
Co-Gen Bituminous:				
Traumatic (1023)	\$11,996,610	\$1.37	\$1.37	0.0%
State O.D. (1024)	11,996,610	0.25	0.24	-4.0%
<u>*Federal Basic/Ex (0182)</u>	<u>11,996,610</u>	<u>0.31</u>	<u>0.29</u>	<u>-6.5%</u>
Total	xx	1.93	1.90	-1.6%
Prep Plant Anthracite:				
Traumatic (1025)	\$9,643,085	\$4.53	\$4.24	-6.4%
State O.D. (1026)	9,643,085	2.47	2.57	4.0%
<u>*Federal Basic/Ex (0183)</u>	<u>6,888,320</u>	<u>0.90</u>	<u>0.88</u>	<u>-2.2%</u>
Total	xx	7.90	7.69	-2.7%
Prep Plant Bituminous:				
Traumatic (1027)	\$32,053,553	\$2.81	\$2.74	-2.5%
State O.D. (1028)	32,053,553	0.13	0.16	23.1%
<u>*Federal Basic/Ex (0184)</u>	<u>32,053,553</u>	<u>0.33</u>	<u>0.31</u>	<u>-6.1%</u>
Total	xx	3.27	3.21	-1.8%
Other Classifications:				
Traumatic	\$70,301,657	\$3.25	\$3.38	4.0%
State O.D.	70,301,657	0.49	0.51	4.1%
<u>*Federal Basic/Ex</u>	<u>65,973,820</u>	<u>0.38</u>	<u>0.36</u>	<u>-5.3%</u>
Total	xx	4.12	4.25	3.2%
Grand Total:				
Traumatic	\$305,128,645	\$5.71	\$5.62	-1.6%
State O.D.	305,128,645	0.52	0.56	7.7%
<u>*Federal Basic/Ex</u>	<u>300,346,902</u>	<u>0.68</u>	<u>0.64</u>	<u>-5.9%</u>
Total	xx	6.91	6.82	-1.3%

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A
Column (1) Loss Costs (Approved 4/1/2019) - Exhibit X-B-2
Column (2) Proposed - Exhibit I-B, pages 1 and 2
Column (3) Traumatic Column (2) / Column (1)
OD Exhibit III and IV-A

Coal Mine Compensation Rating Bureau
Current and Proposed Loss Costs
Unloaded Manual

	2018 Developed Payroll	(1) Approved Unloaded Manual	(2) Indicated Unloaded Manual	(3) Proposed Unloaded Manual	(4) Percent Change
Underground Anthracite:					
Traumatic (1010)	\$183,346	\$21.08	\$20.12	\$20.12	-4.6%
State O.D. (1011)	183,346	10.30	15.62	12.88	25.0%
*Federal Basic/Ex (0160)	183,346	10.02	9.06	9.06	-9.6%
Total	xx	41.40	44.80	42.06	1.6%
Underground Bituminous:					
Traumatic (1001)	\$179,699,685	\$6.59	\$6.65	\$6.65	0.9%
State O.D. (1002)	179,699,685	0.50	0.58	0.58	16.0%
*Federal Basic/Ex (0158)	179,746,573	0.58	0.59	0.59	1.7%
Total	xx	7.67	7.82	7.82	2.0%
Surface Anthracite:					
Traumatic (1012)	\$19,677,526	\$10.10	\$7.84	\$7.84	-22.4%
State O.D. (1016)	19,677,526	1.36	1.06	1.06	-22.1%
*Federal Basic/Ex (0153)	18,332,737	2.13	1.72	1.72	-19.2%
Total	xx	13.59	10.62	10.62	-21.9%
Surface Bituminous:					
Traumatic (1014)	\$35,266,431	\$2.04	\$1.79	\$1.79	-12.3%
State O.D. (1013)	35,266,431	0.20	0.30	0.25	25.0%
*Federal Basic/Ex (0156)	36,110,426	0.89	0.82	0.82	-7.9%
Total	xx	3.13	2.91	2.86	-8.6%
Four Standard Classifications:					
Traumatic	\$234,826,988	\$6.21	\$6.03	\$6.03	-2.9%
State O.D.	234,826,988	0.53	0.59	0.58	9.4%
*Federal Basic/Ex	234,373,082	0.76	0.72	0.72	-5.3%
Total	xx	7.50	7.34	7.33	-2.3%

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A

Column (1) Exhibit X-B Page 2

Column (2) Indicated Loss Cost - Exh. II, col(3) (Traumatic); Exh. III, col(5) (State O.D.); Exh. IV-A, col(5) (Federal O.D. After Adm/Law)

Column (3) Proposed Loss Cost - Exh. II, col(4) (Traumatic); Exh. III, col(8) (State O.D.); Exh. IV-A, col(7) (Federal O.D. After Adm/Law)

Column (4) Exhibit II, III or IV-A

**Coal Mine Compensation Rating Bureau
Current and Proposed Loss Costs
Unloaded Manual**

	2018 Developed Payroll	(1) Approved Unloaded Manual	(2) Indicated Unloaded Manual	(3) Proposed Unloaded Manual	(4) Percent Change
Coke:					
Traumatic (1469)	\$4,456,795	\$3.49	\$3.73	\$3.73	6.9%
State O.D. (1017)	4,456,795	0.08	0.09	0.09	12.5%
*Federal Basic/Ex (0154)	4,456,795	0.10	0.10	0.10	0.0%
Total	xx	3.67	3.92	3.92	6.8%
Auger:					
Traumatic (1015)	\$560,126	\$10.96	\$8.76	\$8.76	-20.1%
State O.D. (1019)	560,126	0.18	0.18	0.18	0.0%
*Federal Basic/Ex (0157)	560,126	0.43	0.44	0.44	2.3%
Total	xx	11.57	9.38	9.38	-18.9%
Co-Gen Anthracite:					
Traumatic (1021)	\$11,591,488	\$4.76	\$7.56	\$5.95	25.0%
State O.D. (1022)	11,591,488	0.27	0.24	0.24	-11.1%
*Federal Basic/Ex (0181)	10,018,416	0.38	0.37	0.37	-2.6%
Total	xx	5.41	8.17	6.56	21.3%
Co-Gen Bituminous:					
Traumatic (1023)	\$11,996,610	\$1.33	\$1.32	\$1.32	-0.8%
State O.D. (1024)	11,996,610	0.25	0.24	0.24	-4.0%
*Federal Basic/Ex (0182)	11,996,610	0.31	0.29	0.29	-6.5%
Total	xx	1.89	1.85	1.85	-2.1%
Prep Plant Anthracite:					
Traumatic (1025)	\$9,643,085	\$4.44	\$4.14	\$4.14	-6.8%
State O.D. (1026)	9,643,085	2.47	2.57	2.57	4.0%
*Federal Basic/Ex (0183)	6,888,320	0.90	0.88	0.88	-2.2%
Total	xx	7.81	7.59	7.59	-2.8%
Prep Plant Bituminous:					
Traumatic (1027)	\$32,053,553	\$2.75	\$2.66	\$2.66	-3.3%
State O.D. (1028)	32,053,553	0.13	0.16	0.16	23.1%
*Federal Basic/Ex (0184)	32,053,553	0.33	0.31	0.31	-6.1%
Total	xx	3.21	3.13	3.13	-2.5%
Other Classifications:					
Traumatic	\$70,301,657	\$3.18	\$3.56	\$3.29	3.5%
State O.D.	70,301,657	0.49	0.51	0.51	4.1%
*Federal Basic/Ex	65,973,820	0.38	0.36	0.36	-5.3%
Total	xx	4.05	4.43	4.16	2.7%
Grand Total:					
Traumatic	\$305,128,645	\$5.51	\$5.46	\$5.40	-2.0%
State O.D.	305,128,645	0.52	0.57	0.56	7.7%
*Federal Basic/Ex	300,346,902	0.68	0.64	0.64	-5.9%
Total	xx	6.71	6.67	6.60	-1.6%

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A

Column (1) Exhibit X-B Page 2

Column (2) Indicated Loss Cost - Exh. II, col(3) (Traumatic); Exh. III, col(5) (State O.D.); Exh. IV-A, col(5) (Federal O.D. After Adm/Law)

Column (3) Proposed Loss Cost - Exh. II, col(4) (Traumatic); Exh. III, col(8) (State O.D.); Exh. IV-A, col(7) (Federal O.D. After Adm/Law)

Column (4) Exhibit II, III or IV-A

**Coal Mine Compensation Rating Bureau
Current and Proposed Loss Costs
Unloaded Manual**

Calculation of Proposed Unloaded Loss Costs

Underground Anthracite

Traumatic (1010)		Indicated Loss Cost.
State O.D. (1011)		Indicated unloaded loss cost limited to 25.0%(Exhibit III).
*Federal O.D. (0160)	Basic/Ex	Indicated Loss Cost.

Underground Bituminous

Traumatic (1001)		Indicated Loss Cost.
State O.D. (1002)		Indicated Loss Cost.
*Federal O.D. (0158)	Basic/Ex	Indicated Loss Cost.

Surface Anthracite

Traumatic (1012)		Indicated Loss Cost.
State O.D. (1016)		Indicated Loss Cost.
*Federal O.D. (0153)	Basic/Ex	Indicated Loss Cost.

Surface Bituminous

Traumatic (1014)		Indicated Loss Cost.
State O.D. (1013)		Indicated unloaded loss cost limited to 25.0%(Exhibit III).
*Federal O.D. (0156)	Basic/Ex	Indicated Loss Cost.

Coke

Traumatic (1469)		Indicated Loss Cost.
State O.D. (1017)		Indicated Loss Cost.
*Federal O.D. (0154)	Basic/Ex	Indicated Loss Cost.

Auger

Traumatic (1015)		Indicated Loss Cost.
State O.D. (1019)		Indicated Loss Cost.
*Federal O.D. (0157)	Basic/Ex	Indicated Loss Cost.

Co-Gen Anthracite

Traumatic (1021)		Indicated unloaded loss cost limited to 25.0%(Exhibit II).
State O.D. (1022)		Indicated Loss Cost.
*Federal O.D. (0181)	Basic/Ex	Indicated Loss Cost.

Co-Gen Bituminous

Traumatic (1023)		Indicated Loss Cost.
State O.D. (1024)		Indicated Loss Cost.
*Federal O.D. (0182)	Basic/Ex	Indicated Loss Cost.

Prep Plant Anthracite

Traumatic (1025)		Indicated Loss Cost.
State O.D. (1026)		Indicated Loss Cost.
*Federal O.D. (0183)	Basic/Ex	Indicated Loss Cost.

Prep Plant Bituminous

Traumatic (1027)		Indicated Loss Cost.
State O.D. (1028)		Indicated Loss Cost.
*Federal O.D. (0184)	Basic/Ex	Indicated Loss Cost.

*Federal Basic and Excess are after the Federal Administrative / Law Change

**Coal Mine Compensation Rating Bureau
Manual Loss Cost Loaded (after Capping)
For Catastrophe, Off-Balances, and Assessment
Proposed to Become Effective 4-1-2020**

	2018 Developed Payroll	(1) Proposed Loss Cost Before Loading	(2) Catastrophe Loss Cost	(3) Loss Cost Including Catastrophe	(4) Loss Cost Including Off-Balance ^(a)	(5) Loss Cost Inc. Off-Balance ^(a) & Assessment ^(b)
Underground Anthracite:						
Traumatic (1010)	\$183,346	\$20.12	\$0.19	\$20.31	\$20.67	\$20.67
State O.D. (1011)	183,346	12.88				12.88
<u>*Federal Basic/Ex (0160)</u>	<u>183,346</u>	<u>9.06</u>				<u>9.06</u>
Total	xx	42.06				42.61
Underground Bituminous:						
Traumatic (1001)	\$179,699,685	\$6.65	\$0.19	\$6.84	\$6.96	\$6.96
State O.D. (1002)	179,699,685	0.58				0.58
<u>*Federal Basic/Ex (0158)</u>	<u>179,746,573</u>	<u>0.59</u>				<u>0.59</u>
Total	xx	7.82				8.13
Surface Anthracite:						
Traumatic (1012)	\$19,677,526	\$7.84	\$0.03	\$7.87	\$8.01	\$8.01
State O.D. (1016)	19,677,526	1.06				1.06
<u>*Federal Basic/Ex (0153)</u>	<u>18,332,737</u>	<u>1.72</u>				<u>1.72</u>
Total	xx	10.62				10.79
Surface Bituminous:						
Traumatic (1014)	\$35,266,431	\$1.79	\$0.03	\$1.82	\$1.85	\$1.85
State O.D. (1013)	35,266,431	0.25				0.25
<u>*Federal Basic/Ex (0156)</u>	<u>36,110,426</u>	<u>0.82</u>				<u>0.82</u>
Total	xx	2.86				2.92
Four Standard Classifications:						
Traumatic	\$234,826,988	\$6.03	\$0.15	\$6.18	\$6.29	\$6.29
State O.D.	234,826,988	0.58				0.58
<u>*Federal Basic/Ex</u>	<u>234,373,082</u>	<u>0.72</u>				<u>0.72</u>
Total	xx	7.33				7.59

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A

Column (1) Proposed Loss Cost Before Loading - Exhibit II for Traumatic, Exhibit III for State OD, and Exhibit IV for Federal OD.

Column (2) Catastrophe - Exhibit XII-A

Column (3) (1)+(2)

Columns (4)(a) & (5)(a) Off-balances applied to Traumatic only

Exhibit XIV-A	Experience Rating	1.0000
Exhibit XIV-B	Merit Rating	1.0002
	<u>Safety Rating</u>	<u>1.0174</u>
	Combined	1.0176

(5)(b) Loss-based Assessment factor in present rates
applied to Traumatic & State OD loss costs =1.0001

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Run Date: November 05, 2019 - 09:37:45 AM

PAB
Effective Date - April 01, 2020
1,408,056,510.885200

**Coal Mine Compensation Rating Bureau
Manual Loss Cost Loaded (after Capping)
For Catastrophe, Off-Balances, and Assessment
Proposed to Become Effective 4-1-2020**

	2018 Developed Payroll	(1) Proposed Loss Cost Before Loading	(2) Catastrophe Loss Cost	(3) Loss Cost Including Catastrophe	(4) Loss Cost Including Off-Balance ^(a)	(5) Loss Cost Inc. Off-Balance ^(a) & Assessment ^(b)
Coke:						
Traumatic (1469)	\$4,456,795	\$3.73	\$0.03	\$3.76	\$3.83	\$3.83
State O.D. (1017)	4,456,795	0.09				0.09
*Federal Basic/Ex (0154)	<u>4,456,795</u>	<u>0.10</u>				<u>0.10</u>
Total	xx	3.92				4.02
Auger:						
Traumatic (1015)	\$560,126	\$8.76	\$0.08	\$8.84	\$9.00	\$9.00
State O.D. (1019)	560,126	0.18				0.18
*Federal Basic/Ex (0157)	<u>560,126</u>	<u>0.44</u>				<u>0.44</u>
Total	xx	9.38				9.62
Co-Gen Anthracite:						
Traumatic (1021)	\$11,591,488	\$5.95	\$0.03	\$5.98	\$6.09	\$6.09
State O.D. (1022)	11,591,488	0.24				0.24
*Federal Basic/Ex (0181)	<u>10,018,416</u>	<u>0.37</u>				<u>0.37</u>
Total	xx	6.56				6.70
Co-Gen Bituminous:						
Traumatic (1023)	\$11,996,610	\$1.32	\$0.03	\$1.35	\$1.37	\$1.37
State O.D. (1024)	11,996,610	0.24				0.24
*Federal Basic/Ex (0182)	<u>11,996,610</u>	<u>0.29</u>				<u>0.29</u>
Total	xx	1.85				1.90
Prep Plant Anthracite:						
Traumatic (1025)	\$9,643,085	\$4.14	\$0.03	\$4.17	\$4.24	\$4.24
State O.D. (1026)	9,643,085	2.57				2.57
*Federal Basic/Ex (0183)	<u>6,888,320</u>	<u>0.88</u>				<u>0.88</u>
Total	xx	7.59				7.69
Prep Plant Bituminous:						
Traumatic (1027)	\$32,053,553	\$2.66	\$0.03	\$2.69	\$2.74	\$2.74
State O.D. (1028)	32,053,553	0.16				0.16
*Federal Basic/Ex (0184)	<u>32,053,553</u>	<u>0.31</u>				<u>0.31</u>
Total	xx	3.13				3.21
Other Classifications:						
Traumatic	\$70,301,657	\$3.29	\$0.03	\$3.32	\$3.38	\$3.38
State O.D.	70,301,657	0.51				0.51
*Federal Basic/Ex	<u>65,973,820</u>	<u>0.36</u>				<u>0.36</u>
Total	xx	4.16				4.25
Grand Total:						
Traumatic	\$305,128,645	\$5.40	\$0.12	\$5.52	\$5.62	\$5.62
State O.D.	305,128,645	0.56				0.56
*Federal Basic/Ex	<u>300,346,902</u>	<u>0.64</u>				<u>0.64</u>
Total	xx	6.60				6.82

*Federal Basic and Excess are after the Federal Administrative / Law Change

Sources: Payroll from Exhibit X-A
Column (1) Proposed Loss Cost Before Loading - Exhibit II for Traumatic, Exhibit III for State OD, and Exhibit IV for Federal OD.
Column (2) Catastrophe - Exhibit XII-A
Column (3) (1)+(2)
Columns (4)(a) & (5)(a) Off-balances applied to Traumatic only

Experience Rating	1.0000
Merit Rating	1.0002
Safety Rating	1.0174
Combined	1.0176

(5)(b) Loss-based Assessment factor in present rates
applied to Traumatic & State OD loss costs = 1.0001

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Run Date: November 05, 2019 - 09:37:45 AM

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Effective Date - April 01, 2020
1,323,760,729.115200

**COAL MINE COMPENSATION RATING BUREAU
TRAUMATIC LOSS COST INDICATIONS
Proposed Unloaded Loss Costs**

Exhibit II

			(1)	(2)	(3)	(4)	(5)
<u>Classification</u>		<u>Code</u>	2018 Developed Payroll	Approved Unloaded Loss Cost (Eff 4/01/2019)	Indicated Unloaded Loss Cost	Proposed Unloaded Loss Cost	Percent Change
Underground:	Anthracite	1010	183,346	21.08	20.12	20.12	-4.6%
	Bituminous	1001	179,699,685	6.59	6.65	6.65	0.9%
Surface:	Anthracite	1012	19,677,526	10.10	7.84	7.84	-22.4%
	Bituminous	1014	35,266,431	<u>2.04</u>	<u>1.79</u>	<u>1.79</u>	<u>-12.3%</u>
Four Standard Classes			234,826,988	6.21	6.03	6.03	-2.9%
Other Classes	Coke	1469	4,456,795	3.49	3.73	3.73	6.9%
	Auger	1015	560,126	10.96	8.76	8.76	-20.1%
Co-Gen:	Anthracite	1021	11,591,488	4.76	7.56	5.95	25.0%
	Bituminous	1023	11,996,610	1.33	1.32	1.32	-0.8%
Prep Plants:	Anthracite	1025	9,643,085	4.44	4.14	4.14	-6.8%
	Bituminous	1027	32,053,553	<u>2.75</u>	<u>2.66</u>	<u>2.66</u>	<u>-3.3%</u>
Other Classes			70,301,657	3.18	3.56	3.29	3.5%
All Classes Combined			305,128,645	5.51	5.46	5.40	-2.0%

Sources: Column (1) Exhibit X-A
Column (2) Exhibit X-B, Page 2
Column (3) Exhibit V-A-1
Column (4) Exhibit V-A-1
Column (5) Exhibit V-A-1

**COAL MINE COMPENSATION RATING BUREAU
STATE OCCUPATIONAL DISEASE LOSS COST**

Exhibit III

<u>Classification</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>2018 Developed Payroll</u>	<u>Approved Unloaded Loss Cost</u>	<u>Average Freq. per \$1 mill.</u>	<u>Indicated Average Severity</u>	<u>Loss Cost (Rate)</u>	<u>Indicated Change</u>	<u>Proposed Change</u>	<u>Proposed Loss Cost</u>
Underground								
1011 Anthracite	\$183,346	\$10.30	0.221003	\$706,889	\$15.62	51.7%	25.0%	\$12.88
1002 Bituminous	\$179,699,685	\$0.50	0.021121	\$272,295	0.58	16.0%	16.0%	0.58
Surface								
1016 Anthracite	\$19,677,526	\$1.36	0.020980	\$506,061	1.06	-22.1%	-22.1%	1.06
1013 Bituminous	\$35,266,431	<u>0.20</u>	0.008080	\$370,363	<u>0.30</u>	<u>50.0%</u>	<u>25.0%</u>	<u>0.25</u>
Four Standard Classes	\$234,826,988	\$0.53			\$0.59	11.3%	9.4%	\$0.58
1017 Coke	\$4,456,795	0.08	0.002394	370,363	0.09	12.5%	12.5%	0.09
1019 Auger	\$560,126	0.18	0.004930	370,363	0.18	0.0%	0.0%	0.18
Co-Gen								
1022 Anthracite	\$11,591,488	0.27	0.004818	506,061	0.24	-11.1%	-11.1%	0.24
1024 Bituminous	\$11,996,610	0.25	0.006505	370,363	0.24	-4.0%	-4.0%	0.24
Prep Plant								
1026 Anthracite	\$9,643,085	2.47	0.050856	506,061	2.57	4.0%	4.0%	2.57
1028 Bituminous	\$32,053,553	<u>0.13</u>	0.004220	370,363	<u>0.16</u>	<u>23.1%</u>	<u>23.1%</u>	<u>0.16</u>
Other Classes	\$70,301,657	\$0.49			\$0.51	4.1%	4.1%	\$0.51
All Classes Combined	\$305,128,645	\$0.52			\$0.57	9.6%	7.7%	\$0.56

Sources: Column (1): Exhibit X-A
Column (2): Exhibit X-B Page 2
Column (3): Exhibit VII-B-1, Column (10)
Column (4): Four Standard Classes - Exhibit VII-A, pages 1 through 4
Coke, Auger, Prep Plant Bituminous and Co-Gen Bituminous = Surface Bituminous
Prep Plant Anthracite, Co-Gen Anthracite = Surface Anthracite
Column (5): [Column (3) times Column (4)] divided by 10,000.
Column (6): [Column (5) divided by Column (2)] minus 1.0
Column (7): Column (6) limited to +/- 25%.
Column (8): Column (2) times [1.000+Column(7)] and rounded.

**COAL MINE COMPENSATION RATING BUREAU
FEDERAL OCCUPATIONAL DISEASE LOSS COST INDICATION**

Exhibit IV-A

		(1)	(2)	(3)	(4) Indicated	(5)	(6)	(7)	(8)
<u>Classification</u>		2018 Developed Payroll	Approved Unloaded Loss Cost	Average Freq. per \$1 mill.	Average Severity	Loss Cost (Rate)	Indicated Change	Loss Cost w/ Limitation 25%	% Change w/Limitation 25%
Underground									
Anthracite:	Basic			0.180561	440,988	7.96			
	Excess			0.084073	130,273	1.10			
	Total	\$183,346	\$10.02			9.06	-9.6%	\$ 9.06	-9.6%
Bituminous:	Basic			0.010163	396,751	0.40			
	Excess			0.007882	244,018	0.19			
	Total	\$179,746,573	\$0.58			0.59	1.7%	\$ 0.59	1.7%
Surface									
Anthracite:	Basic			0.044670	369,748	1.65			
	Excess			0.009622	68,321	0.07			
	Total	\$18,332,737	\$2.13			1.72	-19.2%	\$ 1.72	-19.2%
Bituminous:	Basic			0.020709	365,075	0.76			
	Excess			0.002673	211,101	0.06			
	Total	\$36,110,426	\$0.89			0.82	-7.9%	\$ 0.82	-7.9%
Four Standard Classes	Basic					0.56			
	Excess					0.16			
	Total	\$234,373,082	\$0.76			0.72	-5.3%	\$ 0.72	-5.3%
Coke	Basic			0.002159	365,075	0.08			
	Excess			0.000951	211,101	0.02			
	Total	\$4,456,795	\$0.10			0.10	0.0%	\$ 0.10	0.0%
Auger	Basic			0.010951	365,075	0.40			
	Excess			0.002033	211,101	0.04			
	Total	\$560,126	\$0.43			0.44	2.3%	\$ 0.44	2.3%
Co-Gen	Basic			0.009657	369,748	0.36			
	Excess			0.001789	68,321	0.01			
	Total	\$10,018,416	\$0.38			0.37	-2.6%	\$ 0.37	-2.6%
Prep Plants	Basic			0.006685	365,075	0.24			
	Excess			0.002237	211,101	0.05			
	Total	\$11,996,610	\$0.31			0.29	-6.5%	\$ 0.29	-6.5%
Anthracite:	Basic			0.019669	369,748	0.73			
	Excess			0.021225	68,321	0.15			
	Total	\$6,888,320	\$0.90			0.88	-2.2%	\$ 0.88	-2.2%
Bituminous:	Basic			0.007594	365,075	0.28			
	Excess			0.001535	211,101	0.03			
	Total	\$32,053,553	\$0.33			0.31	-6.1%	\$ 0.31	-6.1%
Other Classes	Basic					0.32			
	Excess					0.04			
	Total	\$65,973,820	\$0.38			0.36	-5.3%	\$ 0.36	-5.3%
All Classes Combined	Basic					0.51			
	Excess					0.13			
	Total	\$300,346,902	\$0.68			0.64	-5.9%	\$ 0.64	-5.9%

Sources: Column (1): Exhibit X-A
Column (2): X-B Page 2
Column (3): Exhibit IV-B page 1 col. (10) (Basic) and Exhibit IV-B page 2 col. (10) (Excess)
Column (4): Four Standard Classes - Exhibit VIII-A (Basic) and Exhibit VII-A, Pages 1 through 4 (Federal Excess).
Coke, Auger, Prep Plant Bituminous and Co-Gen Bituminous = Surface Bituminous
Prep Plant Anthracite, Co-Gen Anthracite = Surface Anthracite
Column (5): [Column (3) times Column (4)] divided by 10,000.
Column (6): [Column (5) divided by Column (2)] minus 1.0
Column (7): Column (2) x [1+Column (8)]
Column (8): Column (6) Limited to +-25%

COAL MINE COMPENSATION RATING BUREAU
Federal Basic Occupational Disease Classification Frequency

Exhibit IV-B
Page 1

			(1)	(2)	(3)	(4)	(5) (6) Credibility		(7)	(8)	(9)	(10)
			Estimated Miner Years 2009-2018	Claim Frequency Per 100 Miner Years			Expected Awarded	Factor	Claim Frequency Indicated w/ Credibility	Change in Indication After Cred.	Payroll 2009-2018	Frequency Per \$1M Payroll
Classification	Class Code			Approved (Eff 4/1/2019)	Trended to 4/1/2020	Indicated (Eff 4/1/2020)						
Underground:	Anthracite	0160	131.5	0.973063	0.973063	0.422594	1.280	0.167	0.881135	-9.4%	6,417,168	0.180561
	Bituminous	0158	19,725.3	0.075272	0.075272	0.076005	14.848	0.568	0.075688	0.6%	1,469,087,699	0.010163
Surface:	Anthracite	0153	3,738.5	0.299052	0.299052	0.157810	11.180	0.493	0.229420	-23.3%	192,005,033	0.044670
	Bituminous	0156	11,229.8	0.116415	0.116415	0.093055	13.073	0.533	0.103964	-10.7%	563,760,252	0.020709
Four Standard Classifications			34,825.1	0.115952	0.115952	0.091594	40.381		0.104351		2,231,270,152	0.016287
	Coke	0154	920.8	0.011154	0.011154	0.008257	0.103	0.047	0.011018	-1.2%	47,001,059	0.002159
	Auger	0157	155.5	0.053144	0.053144	0.102609	0.083	0.042	0.055222	3.9%	7,841,451	0.010951
Co-Gen:	Anthracite	0181	1,700.4	0.053926	0.053926	0.022293	0.917	0.141	0.049466	-8.3%	87,097,986	0.009657
	Bituminous	0182	2,001.1	0.036446	0.036446	0.021167	0.729	0.126	0.034521	-5.3%	103,333,762	0.006685
Prep Plants:	Anthracite	0183	1,231.1	0.111138	0.111138	0.051593	1.368	0.173	0.100837	-9.3%	63,114,936	0.019669
	Bituminous	0184	3,868.0	0.061850	0.061850	0.037085	2.392	0.228	0.056204	-9.1%	286,272,579	0.007594
Other Classes			9,876.9	0.056619	0.056619	0.031466	5.592		0.051986		594,661,773	0.008634
Total			44,702.0	0.102842	0.102842	0.078308	45.973		0.092781		2,825,931,925	0.014677

Source: (1) Exhibit VIII-B-2
(2) Exhibit IV-B-4
(3) = (2) trended to 4/1/2020 @ 0.0%
(4) Exhibit IV-B-3
(5) = (1) x (3) / 100
(6) = [(5) / 45.973]^(0.5)
(7) = (4)*(6)+((3)*(1-(6)))
(8) = (7)/(2)-1
(9) Exhibit X-A-3
(10) = (7) X (1) / [(9) * 10,000]

Columns (2),(3),(4) & (7) totals and subtotals are weighted with 10 year estimated miner years.

COAL MINE COMPENSATION RATING BUREAU
Federal Excess Occupational Disease Classification Frequency

Exhibit IV-B
Page 2

			(1)	(2)	(3)	(4)	(5) (6) Credibility		(7)	(8)	(9)	(10)
			Estimated Miner Years 2009-2018	Claim Frequency Per 100 Miner Years		Indicated (Eff 4/1/2020)	Expected Awarded Claims	Factor	Frequency Indicated w/ Credibility	Change in Indication After Cred.	Payroll 2009-2018	Frequency Per \$1M Payroll
Classification		Class Code		Approved (Eff 4/1/2019)	Trended to 4/1/2020							
Underground:	Anthracite	0160	131.5	0.370632	0.370632	0.595864	0.487	0.176	0.410273	10.7%	6,417,168	0.084073
	Bituminous	0158	19,725.3	0.048619	0.048619	0.061494	9.590	0.783	0.058700	20.7%	1,469,087,699	0.007882
Surface:	Anthracite	0153	3,738.5	0.058241	0.058241	0.034585	2.177	0.373	0.049417	-15.2%	192,005,033	0.009622
	Bituminous	0156	11,229.8	0.010781	0.010781	0.020267	1.211	0.278	0.013418	24.5%	563,760,252	0.002673
Four Standard Classifications			34,825.1	0.038667	0.038667	0.047329	13.465		0.044429		2,231,270,152	0.006934
	Coke	0154	920.8	0.004955	0.004955	0.003118	0.046	0.054	0.004856	-2.0%	47,001,059	0.000951
	Auger	0157	155.5	0.010488	0.010488	0.003142	0.016	0.032	0.010253	-2.2%	7,841,451	0.002033
Co-Gen:	Anthracite	0181	1,700.4	0.009803	0.009803	0.003613	0.167	0.103	0.009165	-6.5%	87,097,986	0.001789
	Bituminous	0182	2,001.1	0.012702	0.012702	0.003648	0.254	0.127	0.011552	-9.1%	103,333,762	0.002237
Prep Plants:	Anthracite	0183	1,231.1	0.104887	0.104887	0.118563	1.291	0.287	0.108812	3.7%	63,114,936	0.021225
	Bituminous	0184	3,868.0	0.010739	0.010739	0.014535	0.415	0.163	0.011358	5.8%	286,272,579	0.001535
Other Classes			9,876.9	0.022167	0.022167	0.022172	2.189		0.022543		594,661,773	0.003744
Total			44,702.0	0.035021	0.035021	0.041770	15.654		0.039593		2,825,931,925	0.006263

Source: (1) Exhibit VIII-B-2
(2) Exhibit IV-B-6
(3) = (2) trended to 4/1/2020 @ 0.0%
(4) Exhibit IV-B-5
(5) = (1) x (3) / 100
(6) = [(5) / 15.654]^(0.5)
(7) = (4)*(6)+((3)*(1-(6)))
(8) = (7)/(2)-1
(9) Exhibit X-A-3
(10) = (7) X (1) / [(9) * 10,000]

Columns (2),(3),(4) & (7) totals and subtotals are weighted with 10 year estimated miner years.

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Run Date: 09/27/19 10:22

PAB
Effective Date - April 01, 2020
Checksum:8,477,973,856.032830

Coal Mine Compensation Rating Bureau

Federal Basic Occupational Disease Classification Frequency

			(1)	(2)	(3)	(4)	(5)	(6)
			Estimated Miner Years 2018	Approved Frequency Equivalent Per 100 Miner Years 4/1/2019	Modeled Indication	Experience Indication	Weighted Average of Cols. (3) & (4)	Percent Change
Underground:	Anthracite	0160	3.2	0.973063	0.373104	0.439090	0.422594	-56.57%
	Bituminous	0158	2,177.1	0.075272	0.180382	0.041213	0.076005	0.97%
Surface:	Anthracite	0153	320.9	0.299052	0.159165	0.157358	0.157810	-47.23%
	Bituminous	0156	<u>632.0</u>	<u>0.116415</u>	<u>0.099646</u>	<u>0.090858</u>	<u>0.093055</u>	-20.07%
Four Standard Classifications			3,133.2	0.107407	0.162120	0.063529	0.088177	-17.90%
	Coke	0154	78.0	0.011154	0.013012	0.006672	0.008257	-25.97%
	Auger	0157	9.8	0.053144	0.249393	0.053681	0.102609	93.08%
Co-Gen:	Anthracite	0181	175.3	0.053926	0.039124	0.016682	0.022293	-58.66%
	Bituminous	0182	210.0	0.036446	0.034629	0.016680	0.021167	-41.92%
Prep Plants:	Anthracite	0183	120.6	0.111138	0.090898	0.038491	0.051593	-53.58%
	Bituminous	0184	<u>388.2</u>	<u>0.061850</u>	<u>0.065991</u>	<u>0.027450</u>	<u>0.037085</u>	-40.04%
Other Classes			981.9	0.056942	0.055168	0.023192	0.031186	-45.23%
Total			4,115.1	0.095366	0.136600	0.053904	0.074578	-21.80%

Source: (1) Exhibit VIII-B-2
 (2) Exhibit IV-B-4
 (3) Exhibit VIII-F
 (4) Exhibit VIII-B-2
 (5) = (0.25)*Col.(3)+ (0.75)*Col.(4)
 (6) = (5)/(2) -1

Totals and subtotals are weighted by Miner Years.

COAL MINE COMPENSATION RATING BUREAU
Federal Basic Occupational Disease Classification Frequency

Exhibit IV-B
Page 4

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Approved Claim Freq. 4/1/2019	Payroll 2008-2017	Estimated Awarded Claims 2008-2017 (1) x (2)	Estimated Miner Years 2009-2018	Estimated Miner Years 2018	Adjustment Factor	Average Weekly Wage 2008	Payroll 2008	Estimated Miner Years 2008-2017	Approved Frequency Equivalent Per 100 Miner Years
Classification		Class Code										
Underground:	Anthracite	0160	0.204365	8,370,535	1.710644	131.5	3.2	1.072	807	2,136,713	175.8	0.973063
	Bituminous	0158	0.010342	1,390,695,103	14.382569	19,725.3	2,177.1	1.549	807	101,353,977	19,107.4	0.075272
Surface:	Anthracite	0153	0.059501	189,892,527	11.298795	3,738.5	320.9	1.072	807	16,220,231	3,778.2	0.299052
	Bituminous	0156	0.023691	602,251,057	14.267930	11,229.8	632.0	1.072	807	74,601,231	12,256.1	0.116415
Four Standard Classifications				2,191,209,222		34,825.1	3,133.2			194,312,152	35,318	
	Coke	0154	0.002260	52,305,410	0.118210	920.8	78.0	1.072	807	9,761,146	1,059.8	0.011154
	Auger	0157	0.010935	9,788,083	0.107033	155.5	9.8	1.072	807	2,506,758	201.4	0.053144
Co-Gen:	Anthracite	0181	0.010787	84,600,970	0.912591	1,700.4	175.3	1.072	807	7,521,400	1,692.3	0.053926
	Bituminous	0182	0.007228	99,819,040	0.721492	2,001.1	210.0	1.072	807	8,481,888	1,979.6	0.036446
Prep Plants:	Anthracite	0183	0.022206	61,960,159	1.375887	1,231.1	120.6	1.072	807	5,733,543	1,238.0	0.111138
	Bituminous	0184	0.008547	275,469,282	2.354436	3,868.0	388.2	1.549	807	21,250,256	3,806.7	0.061850
Other Classes				583,942,944		9,876.9	981.9			55,254,991	9,977.8	
Total				2,775,152,166		44,702.0	4,115.1			249,567,143	45,295.3	

Source: (1) Exhibit X-F (Federal Basic Frequency)
(2) Exhibit X-A-3
(3) = (1)x(2) / 1,000,000
(4) Exhibit VIII-B-2
(5) Exhibit VIII-B-2
(6) Exhibit X-G
(7) Exhibit XII-D
(8) Exhibit X-A-3
(9) = (4)-(5)+(8)/((6)x(7)x52)
(10) = (3)/(9)x100

Coal Mine Compensation Rating Bureau

Federal Excess Occupational Disease Classification Frequency

			(1)	(2)	(3)	(4)	(5)	(6)
			Estimated Miner Years 2018	Approved Frequency Equivalent Per 100 Miner Years 4/1/2019	Modeled Indication	Experience Indication	Weighted Average of Cols. (3) & (4)	Percent Change
Underground:	Anthracite	0160	3.2	0.370632	0.192711	0.730248	0.595864	60.77%
	Bituminous	0158	2,177.1	0.048619	0.047125	0.066283	0.061494	26.48%
Surface:	Anthracite	0153	320.9	0.058241	0.062591	0.025249	0.034585	-40.62%
	Bituminous	0156	<u>632.0</u>	<u>0.010781</u>	<u>0.004963</u>	<u>0.025368</u>	<u>0.020267</u>	87.99%
Four Standard Classifications			3,133.2	0.042301	0.040353	0.054505	0.050968	20.49%
	Coke	0154	78.0	0.004955	0.000302	0.004057	0.003118	-37.07%
	Auger	0157	9.8	0.010488	0.000301	0.004089	0.003142	-70.04%
Co-Gen:	Anthracite	0181	175.3	0.009803	0.002276	0.004059	0.003613	-63.14%
	Bituminous	0182	210.0	0.012702	0.002423	0.004056	0.003648	-71.28%
Prep Plants:	Anthracite	0183	120.6	0.104887	0.100475	0.124592	0.118563	13.04%
	Bituminous	0184	<u>388.2</u>	<u>0.010739</u>	<u>0.001799</u>	<u>0.018780</u>	<u>0.014535</u>	35.35%
Other Classes			981.9	0.022093	0.014003	0.024683	0.022013	-0.36%
Total			4,115.1	0.037479	0.034066	0.047389	0.044059	17.56%

Source: (1) Exhibit VIII-B-2
(2) Exhibit IV-B-6
(3) Exhibit VII-L
(4) Exhibit VII-B-2 (Federal Excess Frequency)
(5) = (0.25)*Col.(3)+ (0.75)*Col.(4)
(6) = (5)/(2) -1

Totals and subtotals are weighted with Miner Years

COAL MINE COMPENSATION RATING BUREAU
Federal Excess Occupational Disease Classification Frequency

Exhibit IV-B
Page 6

			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Approved Claim Freq. 4/1/2019	Payroll 2008-2017	Estimated Awarded Claims 2008-2017 (1) x (2)	Estimated Miner Years 2009-2018	Estimated Miner Years 2018	Adjustment Factor	Average Weekly Wage 2008	Payroll 2008	Estimated Miner Years 2008-2017	Approved Frequency Equivalent Per 100 Miner Years
Underground:	Anthracite	0160	0.077841	8,370,535	0.651571	131.5	3.2	1.072	807	2,136,713	175.8	0.370632
	Bituminous	0158	0.006680	1,390,695,103	9.289843	19,725.3	2,177.1	1.549	807	101,353,977	19,107.4	0.048619
Surface:	Anthracite	0153	0.011588	189,892,527	2.200475	3,738.5	320.9	1.072	807	16,220,231	3,778.2	0.058241
	Bituminous	0156	0.002194	602,251,057	1.321339	11,229.8	632.0	1.072	807	74,601,231	12,256.1	0.010781
Four Standard Classifications				2,191,209,222		34,825.1	3,133.2			194,312,152	35,318	
	Coke	0154	0.001004	52,305,410	0.052515	920.8	78.0	1.072	807	9,761,146	1,059.8	0.004955
	Auger	0157	0.002158	9,788,083	0.021123	155.5	9.8	1.072	807	2,506,758	201.4	0.010488
Co-Gen:	Anthracite	0181	0.001961	84,600,970	0.165903	1,700.4	175.3	1.072	807	7,521,400	1,692.3	0.009803
	Bituminous	0182	0.002519	99,819,040	0.251444	2,001.1	210.0	1.072	807	8,481,888	1,979.6	0.012702
Prep Plants:	Anthracite	0183	0.020957	61,960,159	1.298499	1,231.1	120.6	1.072	807	5,733,543	1,238.0	0.104887
	Bituminous	0184	0.001484	275,469,282	0.408796	3,868.0	388.2	1.549	807	21,250,256	3,806.7	0.010739
Other Classes				583,942,944		9,876.9	981.9			55,254,991	9,977.8	
Total				2,775,152,166		44,702.0	4,115.1			249,567,143	45,295.3	

Source: (1) Exhibit X-F (Federal Excess Frequency)
(2) Exhibit X-A-3
(3) = (1)x(2) / 1,000,000
(4) Exhibit VIII-B-2
(5) Exhibit VIII-B-2
(6) Exhibit X-G
(7) Exhibit XII-D
(8) Exhibit X-A-3
(9) = (4)-(5)+(8)/((6)x(7)x52)
(10) = (3)/(9)x100

COAL MINE COMPENSATION RATING BUREAU
Traumatic Loss and Classification Credibility

Exhibit V-A
Page 1

		(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
				Loss Cost/Unloaded			Credibility		Indicated w/ Credibility		Proposed		Proposed
Classification	Code	5 Year Payroll	2018 Payroll	Approved (Eff 4/01/2019)	on Level	Indicated Eff 04/01/2020)	Five Year Expected Losses	Credibility Factor	Indicated Loss Cost	Indicated Change	Change after Limitation	Proposed Loss Cost	Change Excluding Trend
Underground: Bituminous	1001	\$988,742,095	\$179,699,685	6.59	6.68	6.65	65,158,104	1.00	6.65	0.9%	0.9%	6.65	-0.5%
Surface: Anthracite	1012	\$106,403,065	\$19,677,526	10.10	10.24	7.84	10,746,710	1.00	7.84	-22.4%	-22.4%	7.84	-23.4%
Bituminous	1014	\$192,519,079	\$35,266,431	2.04	2.07	1.79	3,927,389	1.00	1.79	-12.3%	-12.3%	1.79	-13.5%
Three Major Classifications		\$1,287,664,239	\$234,643,642	6.20	6.29	6.02	79,832,203						
Coke	1469	\$22,262,748	\$4,456,795	3.49	3.54	3.97	776,970	0.44	3.73	6.9%	6.9%	3.73	5.4%
Co-Gen: Anthracite	1021	\$48,935,762	\$11,591,488	4.76	4.83	8.38	2,329,342	0.77	7.56	58.8%	25.0%	5.95	23.3%
Bituminous	1023	\$58,228,608	\$11,996,610	1.33	1.35	1.29	774,440	0.44	1.32	-0.8%	-0.8%	1.32	-2.1%
Prep Plants: Anthracite	1025	\$40,249,211	\$9,643,085	4.44	4.50	3.96	1,787,065	0.67	4.14	-6.8%	-6.8%	4.14	-8.0%
Bituminous	1027	\$161,644,329	\$32,053,553	2.75	2.79	2.66	4,445,219	1.00	2.66	-3.3%	-3.3%	2.66	-4.6%
Auger	1015	\$2,771,226	\$560,126	10.96	11.11	2.70	303,726	0.28	8.76	-20.1%	-20.1%	8.76	-21.2%
Subtotal (6)		\$334,091,884	\$70,301,657	3.12	3.16	3.50	10,416,762						
Underground: Anthracite	1010	\$1,112,634	\$183,346	21.08	21.38	18.85	234,543	0.24	20.12	-4.6%	-4.6%	20.12	-5.9%
Subtotal (7)		\$335,204,518	\$70,485,003	3.18	3.22	3.55	10,651,305						
Total (Based on 5-year Payroll)		\$1,622,868,757	\$305,128,645	5.58	5.65	5.51	\$90,483,508		5.50				
Total (Based on 2018 Payroll, see Exhibit II)			\$305,128,645	5.51					5.46	-0.9%	-2.0%	5.40	

Source: (1) Exhibit V-B

(2) Unloaded Loss Cost Current (Eff 4/01/2019) Exhibit X-B page 2

(3) = (2) X Trend = (2) X (1.014)

1.014=Weighted average of 1.021 and 1.011

Weights derived from 5 year Medical (31,266,407) and Indemnity (58,229,279) ultimate losses. Exhibit V-B, pg. 1

(4) Exhibit V-B except Underground Anthracite, see Ex V-A-2

(5) Expected Losses = Column (1) times Column (2) divided by 100

(6) Factor Z = [(5) divided by 3,927,389]^(1/2)

(7) [Column (4) times Column (6)] plus [Column (3) times (1.0 minus Column (6))], except Underground Anthracite is the average of Column(3) and Column(4).

(8) Column(7) / Column(2) -1.0

(9) Loss costs changes limited to +25% increase , -25% decrease

(10) When Column (8) equals Column (9), then Column (7).

Otherwise, Column (2) * [1 + (9)].

(11) Column(10)/1.014/Column(2)-1.000

COAL MINE COMPENSATION RATING BUREAU
Traumatic Loss and Classification Credibility

Exhibit V-A
Page 2

Calculation of Anthracite Underground Loss Cost

Multiplicative Method (Anthracite: Underground vs. Surface)	<u>Indicated</u>	<u>Proposed</u>
Differential Factor from Study	2.66	2.66
Indicated Anthracite Surface Loss Cost	7.84 *	7.84 *
Indicated Anthracite Underground Loss Cost	<u>20.85</u>	<u>20.85</u>
Comparative Hazard Method #1 (Anthracite vs. Bituminous)		
Differential Factor from Study	2.41	2.41
Indicated Bituminous Underground Loss Cost:	6.65 *	6.65 *
Indicated Anthracite Underground Loss Cost	<u>16.03</u>	<u>16.03</u>
Comparative Hazard Method #2 (Surface vs. Underground)		
Differential Factor from Study	2.51	2.51
Indicated Anthracite Surface Loss Cost:	7.84 *	7.84 *
Indicated Anthracite Underground Loss Cost	<u>19.68</u>	<u>19.68</u>
Average	18.85	18.85

* Source: Exhibit V-A-1

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
All Classifications Combined (10 Classes)

Exhibit V-B

Page 1

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	12,255,326	1.0242	1.0926	13,714,211	3.24
2015	11,602,180	1.0509	1.0801	13,169,369	3.76
2016	8,661,045	1.0947	1.0671	10,117,438	3.97
2017	8,255,335	1.2728	1.0536	11,070,585	3.83
<u>2018</u>	<u>5,566,332</u> *	2.0500	1.0399	<u>10,157,676</u> *	<u>3.33</u>
5 Years	\$46,340,218			\$58,229,279	3.59

Medical

2014	5,883,352	1.1111	1.1423	7,467,207	1.76
2015	3,824,391	1.1173	1.1234	4,800,280	1.37
2016	4,190,581	1.1238	1.1038	5,198,208	2.04
2017	5,882,211	1.1076	1.0811	7,043,513	2.44
<u>2018</u>	<u>5,562,604</u> *	1.1792	1.0588	<u>6,757,199</u> *	<u>2.21</u>
5 Years	\$25,343,139			\$31,266,407	1.93

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	423,814,574	21,181,418	5.00
2015	350,172,362	17,969,649	5.13
2016	254,559,392	15,315,646	6.01
2017	289,193,784	18,114,098	6.27
<u>2018</u>	<u>305,128,645</u>	<u>16,914,875</u>	<u>5.54</u>
5 Years	\$1,622,868,757	\$89,495,686	5.51

Source: (1) Sum of Exhibit V-B, pages 2 and 6 - column (1)

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Sum of Exhibit V-B, pages 2 and 6 - column (6)

* Large Claims have been

capped at \$1,250,000. See V-B, pages 3b & 9b

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication

Exhibit V-B

Page 2

Three 100% Credibility Classifications (3 Classes)

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	11,386,279	1.0242	1.0926	12,741,712	3.69
2015	10,544,385	1.0509	1.0801	11,968,690	4.25
2016	7,415,104	1.0947	1.0671	8,661,986	4.36
2017	7,462,712	1.2728	1.0536	10,007,661	4.41
<u>2018</u>	<u>4,636,758</u> *	2.0500	1.0399	<u>8,634,624</u> *	<u>3.68</u>
5 Years	\$41,445,238			\$52,014,673	4.04
<u>Medical</u>					
2014	5,202,361	1.1111	1.1423	6,602,886	1.91
2015	3,318,947	1.1173	1.1234	4,165,859	1.48
2016	3,481,938	1.1238	1.1038	4,319,171	2.18
2017	4,603,039	1.1076	1.0811	5,511,799	2.43
<u>2018</u>	<u>3,798,411</u> *	1.1792	1.0588	<u>4,894,027</u> *	<u>2.09</u>
5 Years	\$20,404,696			\$25,493,742	1.98
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	345,747,513			19,344,598	5.60
2015	281,607,287			16,134,549	5.73
2016	198,557,107			12,981,157	6.54
2017	227,108,690			15,519,460	6.84
<u>2018</u>	<u>234,643,642</u>			<u>13,528,651</u>	<u>5.77</u>
5 Years	\$1,287,664,239			\$77,508,415	6.02

Source: (1) Sum of Exhibit V-B, pages 3,4 and 5 - column (1)

(2) Exhibit V-C

* Large Claims have been

(3) Exhibit V-F

capped at \$1,250,000. See V-B, page 3b

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Sum of Exhibit V-B, pages 3,4 and 5 - column (6)

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Underground Bituminous 1001

Exhibit V-B

Page 3

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	10,273,285	1.0242	1.0926	11,496,226	4.24
2015	9,468,612	1.0509	1.0801	10,747,605	4.97
2016	5,978,438	1.0947	1.0671	6,983,738	4.70
2017	5,873,573	1.2728	1.0536	7,876,591	4.56
<u>2018</u>	<u>4,349,276</u> *	2.0500	1.0399	<u>8,021,771</u> *	<u>4.46</u>
5 Years	\$35,943,184			\$45,125,931	4.56

Medical

2014	4,159,492	1.1111	1.1423	5,279,267	1.95
2015	2,702,756	1.1173	1.1234	3,392,431	1.57
2016	2,521,523	1.1238	1.1038	3,127,824	2.11
2017	3,723,238	1.1076	1.0811	4,458,303	2.58
<u>2018</u>	<u>3,353,165</u> *	1.1792	1.0588	<u>4,338,121</u> *	<u>2.41</u>
5 Years	\$16,460,174			\$20,595,946	2.08

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	271,230,707	16,775,493	6.18
2015	216,454,460	14,140,036	6.53
2016	148,556,407	10,111,562	6.81
2017	172,800,836	12,334,894	7.14
<u>2018</u>	<u>179,699,685</u>	<u>12,359,892</u>	<u>6.87</u>
5 Years	\$988,742,095	\$65,721,877	6.65

Source: (1) CMCRB Database as of 04-30-2019

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Exhibit X-D

* Large Claims have been

capped at \$1,250,000. See V-B, page 3b

Coal Mine Compensation Rating Bureau
 Traumatic Loss Cost Indication
Underground Bituminous 1001

Exhibit V-B
 Page 3b

Adjustment for Large Claim(s) (Accident Year 2018)

	Indemnity	Medical	Total
Uncapped Excess Claims	1,835,083	750,000	2,585,083
Percent of Total	71.0%	29.0%	100.00%
Percent x 1,250,000 * 3	2,662,027	1,087,973	3,750,000
Total Reported Loss as of 04-30-2019	4,349,276	3,353,165	
Uncapped Excess Claims	1,835,083	750,000	
Reported Loss ex. Excess Claims	2,514,193	2,603,165	
Loss Development Factor	2.0500	1.1792	
Trend Factor	1.0399	1.0588	
Dev & Trended Loss ex. Excess Claims	5,359,744	3,250,148	
Excess Claims Capped at \$1,250,000	2,662,027	1,087,973	
Dev & Trended Loss w/Excess Claims Capped	8,021,771	4,338,121	

Source: Exhibit V-J

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Surface Anthracite 1012

Exhibit V-B

Page 4

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	482,239	1.0242	1.0926	539,645	2.64
2015	533,420	1.0509	1.0801	605,473	2.50
2016	1,168,533	1.0947	1.0671	1,365,027	6.54
2017	1,462,712	1.2728	1.0536	1,961,529	9.27
<u>2018</u>	<u>227,740</u>	2.0500	1.0399	<u>485,495</u>	<u>2.47</u>
5 Years	\$3,874,644			\$4,957,169	4.66
<u>Medical</u>					
2014	681,065	1.1111	1.1423	864,414	4.22
2015	332,590	1.1173	1.1234	417,459	1.72
2016	669,848	1.1238	1.1038	830,913	3.98
2017	694,717	1.1076	1.0811	831,872	3.93
<u>2018</u>	<u>350,128</u>	1.1792	1.0588	<u>437,148</u>	<u>2.22</u>
5 Years	\$2,728,348			\$3,381,806	3.18
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	20,466,075			1,404,059	6.86
2015	24,218,779			1,022,932	4.22
2016	20,873,611			2,195,940	10.52
2017	21,167,074			2,793,401	13.20
<u>2018</u>	<u>19,677,526</u>			<u>922,643</u>	<u>4.69</u>
5 Years	\$106,403,065			\$8,338,975	7.84

Source: (1) CMCRB Database as of 04-30-2019

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Surface Bituminous 1014

Exhibit V-B
Page 5

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	630,755	1.0242	1.0926	705,841	1.31
2015	542,353	1.0509	1.0801	615,612	1.50
2016	268,133	1.0947	1.0671	313,221	1.08
2017	126,427	1.2728	1.0536	169,541	0.51
<u>2018</u>	<u>59,742</u>	2.0500	1.0399	<u>127,358</u>	<u>0.36</u>
5 Years	\$1,627,410			\$1,931,573	1.00
<u>Medical</u>					
2014	361,804	1.1111	1.1423	459,205	0.85
2015	283,601	1.1173	1.1234	355,969	0.87
2016	290,567	1.1238	1.1038	360,434	1.24
2017	185,084	1.1076	1.0811	221,624	0.67
<u>2018</u>	<u>95,118</u>	1.1792	1.0588	<u>118,758</u>	<u>0.34</u>
5 Years	\$1,216,174			\$1,515,990	0.79
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	54,050,731			1,165,046	2.16
2015	40,934,048			971,581	2.37
2016	29,127,089			673,655	2.32
2017	33,140,780			391,165	1.18
<u>2018</u>	<u>35,266,431</u>			<u>246,116</u>	<u>0.70</u>
5 Years	\$192,519,079			\$3,447,563	1.79

Source: (1) CMCRB Database as of 04-30-2019
 (2) Exhibit V-C
 (3) Exhibit V-F
 (4) (1) times (2) times (3)
 (5) (4) divided by (6) times 100
 (6) Exhibit X-D

Coal Mine Compensation Rating Bureau

Exhibit V-B

Traumatic Loss Cost Indication

Page 6

Seven Less Than 100% Credibility Classifications (7 Classes)

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	869,047	1.0242	1.0926	972,499	1.25
2015	1,057,795	1.0509	1.0801	1,200,679	1.75
2016	1,245,941	1.0947	1.0671	1,455,452	2.60
2017	792,623	1.2728	1.0536	1,062,924	1.71
<u>2018</u>	<u>929,574</u> *	2.0500	1.0399	<u>1,523,052</u> *	<u>2.16</u>
5 Years	\$4,894,980			\$6,214,606	1.85

Medical

2014	680,991	1.1111	1.1423	864,321	1.11
2015	505,444	1.1173	1.1234	634,421	0.93
2016	708,643	1.1238	1.1038	879,037	1.57
2017	1,279,172	1.1076	1.0811	1,531,714	2.47
<u>2018</u>	<u>1,764,193</u> *	1.1792	1.0588	<u>1,863,172</u> *	<u>2.64</u>
5 Years	\$4,938,443			\$5,772,665	1.72

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	78,067,061	1,836,820	2.35
2015	68,565,075	1,835,100	2.68
2016	56,002,285	2,334,489	4.17
2017	62,085,094	2,594,638	4.18
<u>2018</u>	<u>70,485,003</u>	<u>3,386,224</u>	<u>4.80</u>
5 Years	\$335,204,518	\$11,987,271	3.58

Source: (1) Sum of Exhibit V-B, pages 7-13 - column (1)

(2) Exhibit V-C

* Large Claims have been

(3) Exhibit V-F

capped at \$1,250,000. See V-B, page 9b

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Sum of Exhibit V-B, pages 7-13 - column (6)

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Coke 1469

Exhibit V-B
Page 7

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	8,157	1.0242	1.0926	9,128	0.20
2015	84,623	1.0509	1.0801	96,054	2.21
2016	22,494	1.0947	1.0671	26,276	0.59
2017	42,083	1.2728	1.0536	56,434	1.24
<u>2018</u>	<u>95,507</u>	2.0500	1.0399	<u>203,601</u>	<u>4.57</u>
5 Years	\$252,864			\$391,493	1.76
<u>Medical</u>					
2014	3,386	1.1111	1.1423	4,298	0.10
2015	113,337	1.1173	1.1234	142,258	3.28
2016	22,002	1.1238	1.1038	27,292	0.62
2017	185,062	1.1076	1.0811	221,598	4.85
<u>2018</u>	<u>77,860</u>	1.1792	1.0588	<u>97,211</u>	<u>2.18</u>
5 Years	\$401,647			\$492,657	2.21
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	4,464,398			13,426	0.30
2015	4,340,376			238,312	5.49
2016	4,435,066			53,568	1.21
2017	4,566,113			278,032	6.09
<u>2018</u>	<u>4,456,795</u>			<u>300,812</u>	<u>6.75</u>
5 Years	\$22,262,748			\$884,150	3.97

Source: (1) CMCRB Database as of 04-30-2019
(2) Exhibit V-C
(3) Exhibit V-F
(4) (1) times (2) times (3)
(5) (4) divided by (6) times 100
(6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Auger 1015

Exhibit V-B
Page 8

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	8,062	1.0242	1.0926	9,022	1.12
2015	31,531	1.0509	1.0801	35,790	6.14
2016	0	1.0947	1.0671	0	0.00
2017	0	1.2728	1.0536	0	0.00
<u>2018</u>	<u>0</u>	2.0500	1.0399	<u>0</u>	<u>0.00</u>
5 Years	\$39,593			\$44,812	1.62
<u>Medical</u>					
2014	2,714	1.1111	1.1423	3,445	0.43
2015	21,114	1.1173	1.1234	26,502	4.55
2016	132	1.1238	1.1038	164	0.04
2017	0	1.1076	1.0811	0	0.00
<u>2018</u>	<u>0</u>	1.1792	1.0588	<u>0</u>	<u>0.00</u>
5 Years	\$23,960			\$30,111	1.09
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	806,976			12,467	1.54
2015	582,619			62,292	10.69
2016	372,496			164	0.04
2017	449,009			0	0.00
<u>2018</u>	<u>560,126</u>			<u>0</u>	<u>0.00</u>
5 Years	\$2,771,226			\$74,923	2.70

Source: (1) CMCRB Database as of 04-30-2019
 (2) Exhibit V-C
 (3) Exhibit V-F
 (4) (1) times (2) times (3)
 (5) (4) divided by (6) times 100
 (6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Co-Gen Anthracite 1021

Exhibit V-B
Page 9

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	206,104	1.0242	1.0926	230,639	2.55
2015	100,480	1.0509	1.0801	114,053	1.09
2016	465,060	1.0947	1.0671	543,262	6.04
2017	389,857	1.2728	1.0536	522,807	5.93
<u>2018</u>	<u>463,967</u> *	2.0500	1.0399	<u>530,474</u> *	<u>4.58</u>
5 Years	\$1,625,468			\$1,941,235	3.97

<u>Medical</u>					
2014	101,893	1.1111	1.1423	129,324	1.43
2015	68,617	1.1173	1.1234	86,126	0.82
2016	301,663	1.1238	1.1038	374,198	4.16
2017	352,994	1.1076	1.0811	422,684	4.79
<u>2018</u>	<u>1,189,731</u> *	1.1792	1.0588	<u>1,145,935</u> *	<u>9.89</u>
5 Years	\$2,014,898			\$2,158,267	4.41

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	9,060,883	359,963	3.97
2015	10,469,089	200,179	1.91
2016	8,994,602	917,460	10.20
2017	8,819,700	945,491	10.72
<u>2018</u>	<u>11,591,488</u>	<u>1,676,409</u>	<u>14.47</u>
5 Years	\$48,935,762	\$4,099,502	8.38

Source: (1) CMCRB Database as of 04-30-2019

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Exhibit X-D

* Large Claims have been

capped at \$1,250,000. See V-B, page 9b

Coal Mine Compensation Rating Bureau
 Traumatic Loss Cost Indication
Co-Gen Anthracite 1021

Exhibit V-B
 Page 9b

Adjustment for Large Claim(s) (Accident Year 2018)

	Indemnity	Medical	Total
Uncapped Excess Claims	375,064	1,000,000	1,375,064
Percent of Total	27.3%	72.7%	100.00%
Percent x 1,250,000	340,951	909,049	1,250,000
Total Reported Loss as of 04-30-2019	463,967	1,189,731	
Uncapped Excess Claims	375,064	1,000,000	
Reported Loss ex. Excess Claims	88,903	189,731	
Loss Development Factor	2.0500	1.1792	
Trend Factor	1.0399	1.0588	
Dev & Trended Loss ex. Excess Claims	189,523	236,886	
Excess Claims Capped at \$1,250,000	340,951	909,049	
Dev & Trended Loss w/Excess Claims Capped	530,474	1,145,935	

Source: Exhibit V-J

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Co-Gen Bituminous 1023

Exhibit V-B

Page 10

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	27,715	1.0242	1.0926	31,014	0.26
2015	70,451	1.0509	1.0801	79,967	0.68
2016	6,706	1.0947	1.0671	7,834	0.07
2017	50,986	1.2728	1.0536	68,373	0.60
<u>2018</u>	<u>63,205</u>	2.0500	1.0399	<u>134,740</u>	<u>1.12</u>
5 Years	\$219,063			\$321,928	0.55
<u>Medical</u>					
2014	97,026	1.1111	1.1423	123,146	1.05
2015	29,148	1.1173	1.1234	36,586	0.31
2016	23,310	1.1238	1.1038	28,915	0.26
2017	131,913	1.1076	1.0811	157,956	1.38
<u>2018</u>	<u>65,182</u>	1.1792	1.0588	<u>81,382</u>	<u>0.68</u>
5 Years	\$346,579			\$427,985	0.74
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	11,721,184			154,160	1.32
2015	11,748,205			116,553	0.99
2016	11,327,552			36,749	0.33
2017	11,435,057			226,329	1.98
<u>2018</u>	<u>11,996,610</u>			<u>216,122</u>	<u>1.80</u>
5 Years	\$58,228,608			\$749,913	1.29

Source: (1) CMCRB Database as of 04-30-2019

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Prep Plants Anthracite 1025

Exhibit V-B

Page 11

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	56,749	1.0242	1.0926	63,504	0.77
2015	274,264	1.0509	1.0801	311,311	4.09
2016	168,017	1.0947	1.0671	196,270	2.80
2017	6,566	1.2728	1.0536	8,805	0.11
<u>2018</u>	<u>161,493</u>	2.0500	1.0399	<u>344,270</u>	<u>3.57</u>
5 Years	\$667,089			\$924,160	2.30

<u>Medical</u>					
2014	65,673	1.1111	1.1423	83,353	1.01
2015	130,671	1.1173	1.1234	164,015	2.16
2016	68,171	1.1238	1.1038	84,563	1.20
2017	33,115	1.1076	1.0811	39,653	0.51
<u>2018</u>	<u>237,984</u>	1.1792	1.0588	<u>297,132</u>	<u>3.08</u>
5 Years	\$535,614			\$668,716	1.66

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	8,234,771	146,857	1.78
2015	7,606,274	475,326	6.25
2016	7,018,927	280,833	4.00
2017	7,746,154	48,458	0.62
<u>2018</u>	<u>9,643,085</u>	<u>641,402</u>	<u>6.65</u>
5 Years	\$40,249,211	\$1,592,876	3.96

Source: (1) CMCRB Database as of 04-30-2019
 (2) Exhibit V-C
 (3) Exhibit V-F
 (4) (1) times (2) times (3)
 (5) (4) divided by (6) times 100
 (6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Prep Plants Bituminous 1027

Exhibit V-B

Page 12

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	562,260	1.0242	1.0926	629,192	1.45
2015	327,577	1.0509	1.0801	371,825	1.11
2016	583,664	1.0947	1.0671	681,810	2.88
2017	303,131	1.2728	1.0536	406,505	1.41
<u>2018</u>	<u>145,402</u>	2.0500	1.0399	<u>309,967</u>	<u>0.97</u>
5 Years	\$1,922,034			\$2,399,299	1.48
<u>Medical</u>					
2014	410,299	1.1111	1.1423	520,755	1.20
2015	70,257	1.1173	1.1234	88,185	0.26
2016	293,365	1.1238	1.1038	363,905	1.54
2017	576,088	1.1076	1.0811	689,823	2.39
<u>2018</u>	<u>193,436</u>	1.1792	1.0588	<u>241,512</u>	<u>0.75</u>
5 Years	\$1,543,445			\$1,904,180	1.18
<u>Indemnity & Medical</u>					
	(6) Developed <u>Payroll</u>				
2014	43,520,040			1,149,947	2.65
2015	33,564,176			460,010	1.37
2016	23,689,882			1,045,715	4.42
2017	28,816,678			1,096,328	3.80
<u>2018</u>	<u>32,053,553</u>			<u>551,479</u>	<u>1.72</u>
5 Years	\$161,644,329			\$4,303,479	2.66

Source: (1) CMCRB Database as of 04-30-2019

(2) Exhibit V-C

(3) Exhibit V-F

(4) (1) times (2) times (3)

(5) (4) divided by (6) times 100

(6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication
Underground Anthracite - 1010

Exhibit V-B

Page 13

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	0	1.0242	1.0926	0	0.00
2015	168,869	1.0509	1.0801	191,679	75.36
2016	0	1.0947	1.0671	0	0.00
2017	0	1.2728	1.0536	0	0.00
<u>2018</u>	<u>0</u>	<u>2.0500</u>	<u>1.0399</u>	<u>0</u>	<u>0.00</u>
5 Years	\$168,869			\$191,679	17.23

<u>Medical</u>					
2014	0	1.1111	1.1423	0	0.00
2015	72,300	1.1173	1.1234	90,749	35.68
2016	0	1.1238	1.1038	0	0.00
2017	0	1.1076	1.0811	0	0.00
<u>2018</u>	<u>0</u>	<u>1.1792</u>	<u>1.0588</u>	<u>0</u>	<u>0.00</u>
5 Years	\$72,300			\$90,749	8.16

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	258,809	0	0.00
2015	254,336	282,428	111.04
2016	163,760	0	0.00
2017	252,383	0	0.00
<u>2018</u>	<u>183,346</u>	<u>0</u>	<u>0.00</u>
5 Years	\$1,112,634	\$282,428	25.38

Source: (1) CMCRB Database as of 04-30-2019
(2) Exhibit V-C
(3) Exhibit V-F
(4) (1) times (2) times (3)
(5) (4) divided by (6) times 100
(6) Exhibit X-D

Coal Mine Compensation Rating Bureau
Traumatic Loss Cost Indication

Exhibit V-B

Page 14

Five Other Classifications [Page 6 less Pages 8 & 13] - (5 Classes)

	(1)	(2)	(3)	(4)	(5)
Accident <u>Year</u>	Reported <u>Losses</u>	Loss <u>Development</u>	Trend <u>Factor</u>	Ultimate <u>Losses</u>	Loss <u>Cost</u>
<u>Indemnity</u>					
2014	860,985	1.0242	1.0926	963,477	1.25
2015	857,395	1.0509	1.0801	973,210	1.44
2016	1,245,941	1.0947	1.0671	1,455,452	2.62
2017	792,623	1.2728	1.0536	1,062,924	1.73
<u>2018</u>	<u>929,574</u> *	2.0500	1.0399	<u>1,523,052</u> *	<u>2.18</u>
5 Years	\$4,686,518			\$5,978,115	1.80

Medical

2014	678,277	1.1111	1.1423	860,876	1.12
2015	412,030	1.1173	1.1234	517,170	0.76
2016	708,511	1.1238	1.1038	878,873	1.58
2017	1,279,172	1.1076	1.0811	1,531,714	2.50
<u>2018</u>	<u>1,764,193</u> *	1.1792	1.0588	<u>1,863,172</u> *	<u>2.67</u>
5 Years	\$4,842,183			\$5,651,805	1.71

	(6)		
Indemnity & <u>Medical</u>	Developed <u>Payroll</u>		
2014	77,001,276	1,824,353	2.37
2015	67,728,120	1,490,380	2.20
2016	55,466,029	2,334,325	4.20
2017	61,383,702	2,594,638	4.23
<u>2018</u>	<u>69,741,531</u>	<u>3,386,224</u>	<u>4.85</u>
5 Years	\$331,320,658	\$11,629,920	3.51

Source: (1) Exhibit V-B, page 6 minus page 8, column (1) minus page 13, column (1)
 (2) Exhibit V-C * Large Claims have been
 (3) Exhibit V-F capped at \$1,250,000. See V-B, page 9b
 (4) (1) times (2) times (3)
 (5) (4) divided by (6) times 100
 (6) Exhibit V-B, page 6 minus page 13 - column (6)

Coal Mine Compensation Rating Bureau
Indemnity & Funeral Traumatic Loss Development
Selected Loss Development Factors

(1) Development Period	(2) Average of Middle Four	(3) PCRB Factor	(4) CMCRB vs. PCRB Comparison	(5) Derived Development Factor	(6) Selected Factor	(7) Differences Average vs Selected	(8) Accumulated Selected Factor
1:2	1.6106	1.3675	0.2431	1.6106	1.6106	0.0000	2.0500
2:3	1.1627	1.1000	0.0627	1.1627	1.1627	0.0000	1.2728
3:4	1.0417	1.0259	0.0158	1.0417	1.0417	0.0000	1.0947
4:5	1.0261	1.0056	0.0205	1.0261	1.0261	0.0000	1.0509
5:6	0.9936	1.0045	-0.0109	1.0019	1.0019	-0.0083	1.0242
6:7	1.0111	1.0048	0.0063	1.0018	1.0018	0.0093	1.0223
7:8	1.0037	1.0021	0.0016	1.0017	1.0017	0.0020	1.0205
8:9	1.0037	1.0018	0.0019	1.0016	1.0016	0.0021	1.0188
9:10	1.0006	1.0022	-0.0016	1.0016	1.0016	-0.0010	1.0171
10:11	1.0033	1.0013	0.0020	1.0015	1.0015	0.0018	1.0155
11:12	1.0000	1.0016	-0.0016	1.0014	1.0014	-0.0014	1.0140
12:13	1.0017	1.0006	0.0011	1.0013	1.0013	0.0004	1.0126
13:14	0.9931	1.0004	-0.0073	1.0013	1.0013	-0.0082	1.0112
14:15	1.0020	1.0007	0.0013	1.0012	1.0012	0.0008	1.0099
15:16	1.0008	1.0004	0.0004	1.0011	1.0011	-0.0003	1.0087
16:17	1.0001	0.9999	0.0002	1.0010	1.0010	-0.0009	1.0076
17:18	1.0015	1.0004	0.0011	1.0010	1.0010	0.0005	1.0065
18:19	1.0037	1.0005	0.0032	1.0009	1.0009	0.0028	1.0055
19:20	1.0014	1.0004	0.0010	1.0008	1.0008	0.0006	1.0046
20:Ult	xx	1.0033	xx	1.0038	1.0038		1.0038

Sources:

- (1) Reports spanned by age-to-age factors
- (2) Exhibit V-D Page 1 and VI-A Page 4
- (3) Exhibit V-D-3
- (4) Col.(2) - Col.(3)
- (5) Exhibit V-D-2 Col.(5)
- (6) Selected equal to Col.(5)
- (7) Col.(2) - Col.(6)
- (8) Upward accumulation of Col.(6)

Coal Mine Compensation Rating Bureau
Medical Traumatic Loss Development
Selected Loss Development Factors

(1) Development Period	(2) Average of Middle Four	(3) PCRB Factor	(4) CMCRB vs. PCRB Comparison	(5) Derived Development Factor	(6) Selected Factor	(7) Differences Average vs Selected	(8) Accumulated Selected Factor
1:2	1.0646	1.0731	-0.0085	1.0646	1.0646	0.0000	1.1792
2:3	0.9856	1.0262	-0.0406	0.9856	0.9856	0.0000	1.1076
3:4	0.9966	1.0046	-0.0080	1.0058	1.0058	-0.0092	1.1238
4:5	1.0133	1.0149	-0.0016	1.0056	1.0056	0.0077	1.1173
5:6	0.9953	1.0048	-0.0095	1.0055	1.0055	-0.0102	1.1111
6:7	1.0114	1.0090	0.0024	1.0053	1.0053	0.0061	1.1051
7:8	0.9968	1.0059	-0.0091	1.0051	1.0051	-0.0083	1.0993
8:9	1.0069	1.0072	-0.0003	1.0050	1.0050	0.0019	1.0937
9:10	1.0089	1.0047	0.0042	1.0048	1.0048	0.0041	1.0883
10:11	1.0130	1.0069	0.0061	1.0046	1.0046	0.0084	1.0831
11:12	1.0068	1.0074	-0.0006	1.0045	1.0045	0.0023	1.0781
12:13	1.0103	1.0064	0.0039	1.0043	1.0043	0.0060	1.0733
13:14	1.0054	1.0045	0.0009	1.0042	1.0042	0.0012	1.0687
14:15	1.0067	1.0070	-0.0003	1.0040	1.0040	0.0027	1.0643
15:16	0.9924	1.0038	-0.0114	1.0038	1.0038	-0.0114	1.0601
16:17	0.9832	1.0049	-0.0217	1.0037	1.0037	-0.0205	1.0561
17:18	1.0102	1.0038	0.0064	1.0035	1.0035	0.0067	1.0522
18:19	1.0001	1.0028	-0.0027	1.0033	1.0033	-0.0032	1.0485
19:20	1.0127	1.0062	0.0065	1.0032	1.0032	0.0095	1.0450
20:Ult	xx	1.0534	xx	1.0417	1.0417		1.0417

Sources:

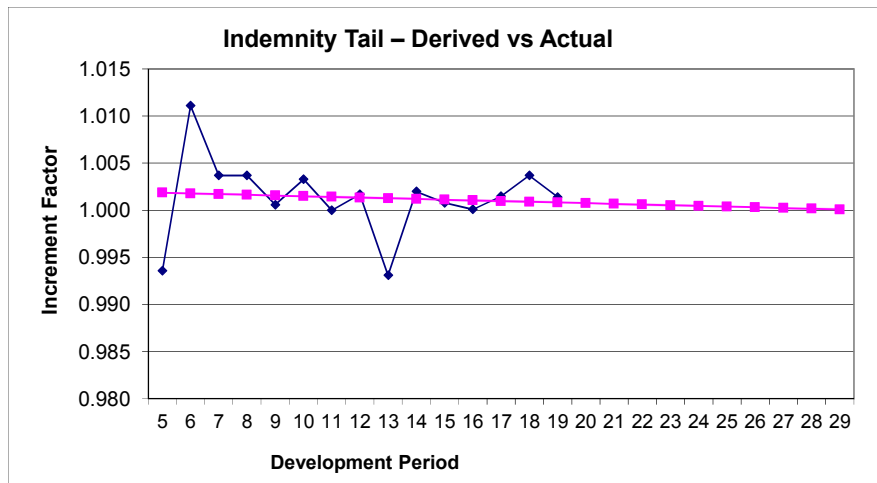
- (1) Reports spanned by age-to-age factors
- (2) Exhibit V-E Page 1 and VI-B Page 4
- (3) Exhibit V-E-3
- (4) Col.(2) - Col.(3)
- (5) Exhibit V-E-2 Col.(6)
- (6) Selected equal to Col.(5)
- (7) Col.(2) - Col.(6)
- (8) Upward accumulation of Col.(6)

Exhibit V-D-1 is the same as VI-A-4

**Coal Mine Compensation Rating Bureau
Indemnity Tail – Derived vs Actual**

Exhibit V-D-2

(1) Development Period	(2) Age-to-Age Factor	(3) Derived Factor	(4) Accumulated Age-to-Age Fac.	(5) Model Factors	(6) Accumulated Model Factors	(7) Derived Factor	(8) Accumulated Derived Factor	(9) Tail Devel. Period	(10) Model Factors	(11) Accumulated Model Factors
1	1.6106	1.6106	2.0424	1.6106	xx	xx	xx			
2	1.1627	1.1627	1.2681	1.1627	xx	xx	xx			
3	1.0417	1.0417	1.0907	1.0417	xx	xx	xx			
4	1.0261	1.0261	1.0470	1.0261	xx	xx	xx			
5	0.9936	1.0019	1.0204	1.0019	1.0204	1.0019	1.0204			
6	1.0111	1.0018	1.0269	1.0018	1.0185	1.0018	1.0185			
7	1.0037	1.0017	1.0157	1.0017	1.0166	1.0017	1.0166			
8	1.0037	1.0016	1.0119	1.0016	1.0149	1.0016	1.0149			
9	1.0006	1.0016	1.0082	1.0016	1.0132	1.0016	1.0132			
10	1.0033	1.0015	1.0076	1.0015	1.0117	1.0015	1.0117			
11	1.0000	1.0014	1.0043	1.0014	1.0102	1.0014	1.0102			
12	1.0017	1.0013	1.0043	1.0013	1.0087	1.0013	1.0087			
13	0.9931	1.0013	1.0026	1.0013	1.0074	1.0013	1.0074			
14	1.0020	1.0012	1.0095	1.0012	1.0061	1.0012	1.0061			
15	1.0008	1.0011	1.0075	1.0011	1.0049	1.0011	1.0049			
16	1.0001	1.0010	1.0067	1.0010	1.0038	1.0010	1.0038			
17	1.0015	1.0010	1.0066	1.0010	1.0027	1.0010	1.0027			
18	1.0037	1.0009	1.0051	1.0009	1.0017	1.0009	1.0017			
19	1.0014	1.0008	1.0014	1.0008	1.0008	1.0008	1.0008			
20		1.0008						20	1.0008	1.0042
21		1.0007						21	1.0007	1.0035
22		1.0006						22	1.0006	1.0028
23		1.0005						23	1.0005	1.0022
24		1.0005						24	1.0005	1.0017
25		1.0004						25	1.0004	1.0012
26		1.0003						26	1.0003	1.0008
27		1.0002						27	1.0002	1.0005
28		1.0002						28	1.0002	1.0003
29		1.0001						29	1.0001	1.0001



Source:

- (1) Development Period: e.g."1" = 12 months to 24 months
- (2) Exhibit V-D-1 and VI-A-4
- (3) 1 thru 4 Col.(2)
5 thru 19 Col. (7)
20 thru 29 Col. (10)
- (4) = Accumulation of Col.(2)
- (5) From Model: Refer to Written Report
- (6) Accumulation of Col.(5)
- (7) Col.(5) adjusted
- (8) Accumulation of Col.(7)
- (9) Tail Development Period
- (10) Final Tail Calculation
- (11) Accumulation of Col. (10)

CMCRB tail factor	1.0042
PCRB tail factor	1.0033
Selected Tail Factor	1.0038

Coal Mine Compensation Rating Bureau
 Traumatic Loss Development
 Indemnity & Funeral Loss Development Tail Factor
 PCRB Development and Tail Factors

(1) Span of <u>Maturities</u>	(2) Age-to-Age Incurred Loss <u>Factors</u>	(3) Span of <u>Maturities</u>	(4) Cumulative Incurred Loss <u>Factors</u>
1 to 2	1.3675	1 to Ult	1.5909
2 to 3	1.1000	2 to Ult	1.1634
3 to 4	1.0259	3 to Ult	1.0576
4 to 5	1.0056	4 to Ult	1.0309
5 to 6	1.0045	5 to Ult	1.0252
6 to 7	1.0048	6 to Ult	1.0206
7 to 8	1.0021	7 to Ult	1.0157
8 to 9	1.0018	8 to Ult	1.0136
9 to 10	1.0022	9 to Ult	1.0118
10 to 11	1.0013	10 to Ult	1.0095
11 to 12	1.0016	11 to Ult	1.0082
12 to 13	1.0006	12 to Ult	1.0066
13 to 14	1.0004	13 to Ult	1.0060
14 to 15	1.0007	14 to Ult	1.0056
15 to 16	1.0004	15 to Ult	1.0049
16 to 17	0.9999	16 to Ult	1.0045
17 to 18	1.0004	17 to Ult	1.0046
18 to 19	1.0005	18 to Ult	1.0042
19 to 20	1.0004	19 to Ult	1.0037
20 to Ult	1.0033	20 to Ult	1.0033
20 to 21	1.0000		
21 to 22	1.0003		
22 to 23	0.9999		
23 to 24	1.0007		
24 to 25	1.0000		
25 to 26	1.0004		
26 to 27	1.0004		
27 to 28	1.0003		
28 to 29	0.9999		
29 to 30	1.0005		
Beyond	1.0009		

Source:PCRB Loss Cost Filing effective April 1, 2019 - Exhibit 6-2 (As amended January 21, 2019)

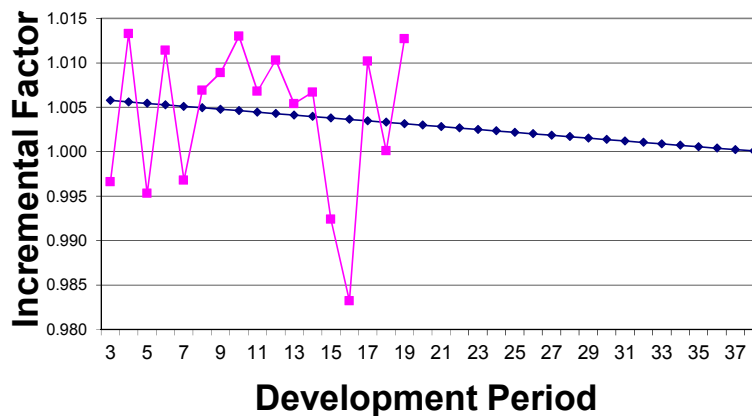
The 20:Ult Factor is the product of PCRB factors beyond 19:20.

Exhibit V-E-1 is the same as VI-B-4

**Coal Mine Compensation Rating Bureau
Medical Tail – Derived vs Actual**

(1) Development Period	(2) Average Age-to-Age Factor	(3) PCRB Factors	(4) Adjusted Age-to-Age Factor	(5) Accumulated Adjusted Age-to-Age Factor	(6) Derived Development Factor	(7) Accumulated Derived Factor	(8) Tail Development Period	(9) Derived Development Factor	(10) Accumulation of Derived Subsequent Factors
1	1.0646		1.0646	1.1321	1.0646	1.1321	20	1.0030	1.0299
2	0.9856		0.9856	1.0634	0.9856	1.0634	21	1.0029	1.0268
3	0.9966		0.9966	1.0789	1.0058	1.0789	22	1.0027	1.0239
4	1.0133		1.0133	1.0826	1.0056	1.0727	23	1.0025	1.0211
5	0.9953		0.9953	1.0684	1.0055	1.0667	24	1.0024	1.0186
6	1.0114		1.0114	1.0735	1.0053	1.0609	25	1.0022	1.0162
7	0.9968		0.9968	1.0614	1.0051	1.0553	26	1.0020	1.0139
8	1.0069		1.0069	1.0648	1.0050	1.0500	27	1.0019	1.0119
9	1.0089		1.0089	1.0575	1.0048	1.0448	28	1.0017	1.0100
10	1.0130	1.0069	1.0100	1.0481	1.0046	1.0398	29	1.0016	1.0083
11	1.0068	1.0074	1.0071	1.0378	1.0045	1.0350	30	1.0014	1.0067
12	1.0103	1.0064	1.0084	1.0305	1.0043	1.0304	31	1.0012	1.0053
13	1.0054	1.0045	1.0050	1.0220	1.0042	1.0259	32	1.0011	1.0041
14	1.0067	1.0070	1.0069	1.0169	1.0040	1.0217	33	1.0009	1.0030
15	0.9924	1.0038	0.9981	1.0100	1.0038	1.0176	34	1.0007	1.0021
16	0.9832	1.0049	0.9941	1.0119	1.0037	1.0138	35	1.0006	1.0013
17	1.0102	1.0038	1.0070	1.0180	1.0035	1.0100	36	1.0004	1.0008
18	1.0001	1.0028	1.0015	1.0109	1.0033	1.0065	37	1.0003	1.0003
19	1.0127	1.0062	1.0095	1.0095	1.0032	1.0032	38	1.0001	1.0001

Medical Tail – Derived vs Actual



CMCRB derived tail factor	1.0299
PCRB tail factor	1.0534
Selected	1.0417

Sources: (1) Development period:e.g. "1" =12 months to 24 months

(2) Exhibit VI-B-4

(3) PCRB Factors (Exhibit V-E-3)

(4) (1) thru (9): Col. (2)

(10) thru (19): average of Col. (2) and Col. (3)

(5) Accumulation of (4)

(6) See (4) above plus refer to written report.

(7) Accumulation of (6)

(8) Tail Factor Development Periods

(9) Final Tail Calculation

(10) Upward accumulation of Col. (9)

Coal Mine Compensation Rating Bureau
 Traumatic Loss Development
 Medical Loss Development Tail Factor
 PCRB Development and Tail Factors

(1) Span of <u>Maturities</u>	(2) Age-to-Age Incurred Loss <u>Factors</u>	(3) Span of <u>Maturities</u>	(4) Cumulative Incurred Loss <u>Factors</u>
1 to 2	1.0731	1 to Ult.	1.2877
2 to 3	1.0262	2 to Ult.	1.2000
3 to 4	1.0046	3 to Ult.	1.1693
4 to 5	1.0149	4 to Ult.	1.1640
5 to 6	1.0048	5 to Ult.	1.1469
6 to 7	1.0090	6 to Ult.	1.1414
7 to 8	1.0059	7 to Ult.	1.1312
8 to 9	1.0072	8 to Ult.	1.1246
9 to 10	1.0047	9 to Ult.	1.1166
10 to 11	1.0069	10 to Ult.	1.1113
11 to 12	1.0074	11 to Ult.	1.1037
12 to 13	1.0064	12 to Ult.	1.0956
13 to 14	1.0045	13 to Ult.	1.0887
14 to 15	1.0070	14 to Ult.	1.0838
15 to 16	1.0038	15 to Ult.	1.0762
16 to 17	1.0049	16 to Ult.	1.0722
17 to 18	1.0038	17 to Ult.	1.0669
18 to 19	1.0028	18 to Ult.	1.0629
19 to 20	1.0062	19 to Ult.	1.0599
20 to Ult.	1.0534	20 to Ult.	1.0534
20 to 21	1.0070		
21 to 22	1.0057		
22 to 23	1.0038		
23 to 24	1.0055		
24 to 25	1.0034		
25 to 26	1.0067		
26 to 27	1.0033		
27 to 28	1.0021		
28 to 29	0.9992		
29 to 30	1.0093		
Beyond	1.0062		

Source:PCRB Loss Cost Filing effective April 1, 2019 - Exhibit 6-14 (As amended January 21, 2019)

The 20:Ult Factor is the product of PCRB factors beyond 19:20.

Coal Mine Compensation Rating Bureau

Summary

Traumatic Loss Trend

Indemnity, Funeral and Medical for All Classes Combined

Trend Factors

Indemnity and Funeral

Annual Percentage Change:		1.1%	Annual			HB 1846	HB 1840	Adjusted
			Percentage			Trend	Adjustment	Trend
<u>Accident Year</u>	<u>Trend Period - Years</u>		<u>Change</u>	<u>Formula</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
2014	7-1-14 to 4-1-2021	6.75	1.1%	$(1 + 0.011)^{\wedge} 6.75$	1.0766	1.0000	1.0149	1.0926
2015	7-1-15 to 4-1-2021	5.75	1.1%	$(1 + 0.011)^{\wedge} 5.75$	1.0649	1.0000	1.0143	1.0801
2016	7-1-16 to 4-1-2021	4.75	1.1%	$(1 + 0.011)^{\wedge} 4.75$	1.0533	1.0000	1.0131	1.0671
2017	7-1-17 to 4-1-2021	3.75	1.1%	$(1 + 0.011)^{\wedge} 3.75$	1.0419	1.0000	1.0112	1.0536
2018	7-1-18 to 4-1-2021	2.75	1.1%	$(1 + 0.011)^{\wedge} 2.75$	1.0305	1.0000	1.0091	1.0399

Medical and Medical Only

Annual Percentage Change:		2.1%	Annual			HB 1846	HB 1840	Adjusted
			Percentage			Trend	Adjustment	Trend
<u>Accident Year</u>	<u>Trend Period - Years</u>		<u>Change</u>	<u>Formula</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
2014	7-1-14 to 4-1-2021	6.75	2.1%	$(1 + 0.021)^{\wedge} 6.75$	1.1506	0.9928	1.0000	1.1423
2015	7-1-15 to 4-1-2021	5.75	2.1%	$(1 + 0.021)^{\wedge} 5.75$	1.1269	0.9969	1.0000	1.1234
2016	7-1-16 to 4-1-2021	4.75	2.1%	$(1 + 0.021)^{\wedge} 4.75$	1.1038	1.0000	1.0000	1.1038
2017	7-1-17 to 4-1-2021	3.75	2.1%	$(1 + 0.021)^{\wedge} 3.75$	1.0811	1.0000	1.0000	1.0811
2018	7-1-18 to 4-1-2021	2.75	2.1%	$(1 + 0.021)^{\wedge} 2.75$	1.0588	1.0000	1.0000	1.0588

Source: Annual Percentage Change - Exhibit V-K

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-H
Page 1
Summary

	(1) Indemnity Case Incurred	(2) Loss Development	(3) Ultimate	(4) Loss Cost
<u>Year</u>	<u>Losses</u>	<u>Factors</u>	<u>Losses</u>	<u>Premium</u>
2009	5,295,724	1.0155	5,377,808	11,684,524
2010	7,433,505	1.0171	7,560,618	13,510,619
2011	8,518,112	1.0188	8,678,253	16,535,220
2012	9,796,893	1.0205	9,997,729	17,230,534
2013	7,652,267	1.0223	7,822,913	16,100,116
2014	12,255,326	1.0242	12,551,905	24,369,728
2015	11,602,180	1.0509	12,192,731	20,448,272
2016	8,661,045	1.0947	9,481,246	14,771,801
2017	8,255,335	1.2728	10,507,390	16,753,814
2018	5,566,332	2.0500	9,670,180 *	17,432,005

Sources:

(1) Exhibit V-D,pg.1 or Exhibit VI-A,pg.4

(2) Exhibit V-C-1 Column (8)

(3) =(1)x(2)

(4) Exhibit X-B

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

Traumatic Loss Trend
Medical and Medical Only Losses for All Classes Combined

Exhibit V-H
Page 2
Summary

	(1)	(2)	(3)	(4)
	Medical	Loss		Loss
	Case Incurred	Development	Ultimate	Cost
<u>Year</u>	<u>Losses</u>	<u>Factors</u>	<u>Losses</u>	<u>Premium</u>
2009	3,137,264	1.0831	3,397,971	11,684,524
2010	4,314,642	1.0883	4,695,625	13,510,619
2011	6,232,068	1.0937	6,816,013	16,535,220
2012	5,458,952	1.0993	6,001,026	17,230,534
2013	4,082,497	1.1051	4,511,567	16,100,116
2014	5,883,352	1.1111	6,536,992	24,369,728
2015	3,824,391	1.1173	4,272,992	20,448,272
2016	4,190,581	1.1238	4,709,375	14,771,801
2017	5,882,211	1.1076	6,515,137	16,753,814
2018	5,562,604	1.1792	6,705,823 *	17,432,005

Sources:

(1) Exhibit V-E,pg.1 or Exhibit VI-B,pg.4

(2) Exhibit V-C-2 Column (8)

(3) =(1)x(2)

(4) Exhibit X-B

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

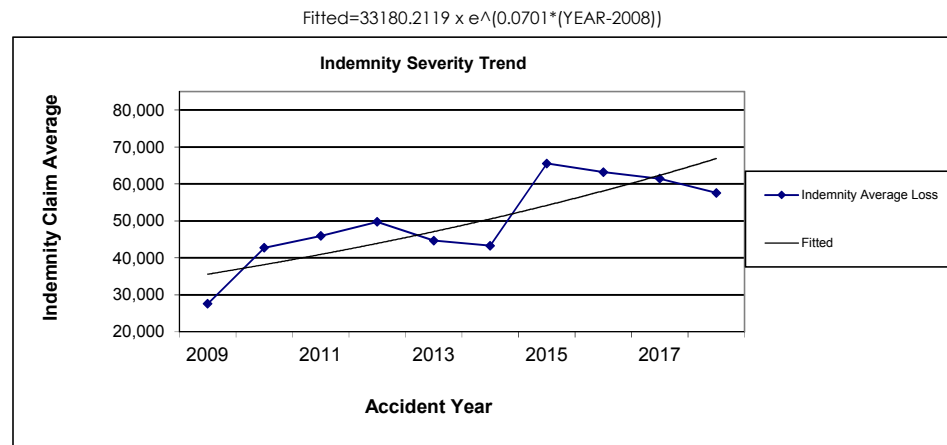
Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 1
Summary

Severity Trend

	(1)	(2)	(3)	(4)
<u>Year</u>	<u>Ultimate Losses</u>	<u>Claim Counts</u>	<u>Average Loss</u>	<u>Annual Average Loss Change</u>
2009	5,377,808	195	27,579	
2010	7,560,618	177	42,715	54.9%
2011	8,678,253	189	45,917	7.5%
2012	9,997,729	201	49,740	8.3%
2013	7,822,913	175	44,702	-10.1%
2014	12,551,905	290	43,282	-3.2%
2015	12,192,731	186	65,552	51.5%
2016	9,481,246	150	63,208	-3.6%
2017	10,507,390	171	61,447	-2.8%
2018	9,670,180 *	168	57,561	-6.3%

Indemnity Severity Trend Factor: 1.065
Source: Summary Exhibit (V-K)



Sources:

- (1) Exhibit V-H page 1, Column (3)
- (2) Exhibit VI-C-1
- (4) (Current Avg. Loss / Prior Avg. Loss - 1.0) x 100

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

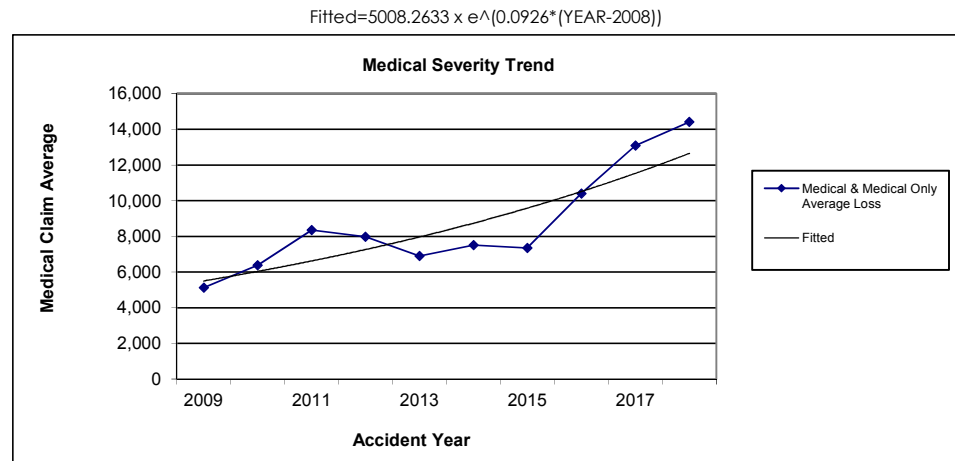
Traumatic Loss Trend
Medical and Medical Only Losses for All Classes Combined

Exhibit V-I
Page 2
Summary

Severity Trend

	(1)	(2)	(3)	(4)
<u>Year</u>	<u>Ultimate Losses</u>	<u>Claim Counts</u>	<u>Average Loss</u>	<u>Annual Average Loss Change</u>
2009	3,397,971	664	5,117	
2010	4,695,625	736	6,380	24.7%
2011	6,816,013	816	8,353	30.9%
2012	6,001,026	753	7,969	-4.6%
2013	4,511,567	654	6,898	-13.4%
2014	6,536,992	871	7,505	8.8%
2015	4,272,992	582	7,342	-2.2%
2016	4,709,375	453	10,396	41.6%
2017	6,515,137	498	13,083	25.8%
2018	6,705,823 *	465	14,421	10.2%

Medical Severity Trend Factor: 1.090
Source: Summary Exhibit (V-K)



Sources:

- (1) Exhibit V-H page 2, Column (3)
- (2) Exhibit VI-C-1 + Exhibit VI-C-2

* Note: Ultimate losses for 2018 reflect limitation on large claims, see Exhibit V-J

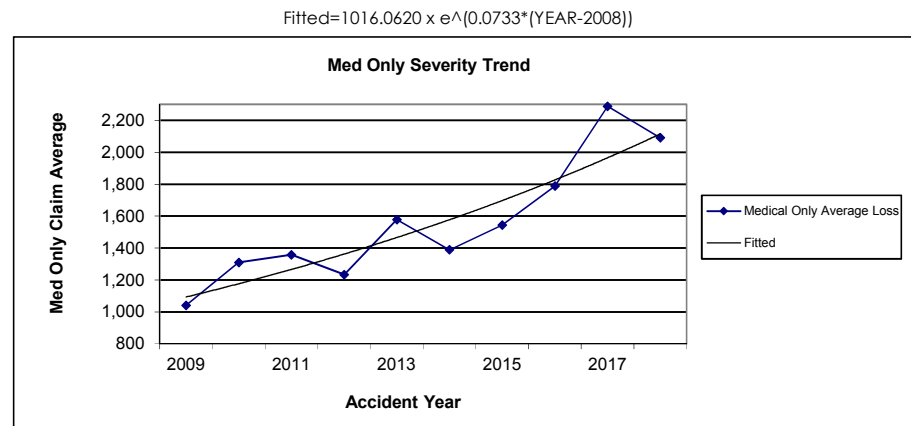
Traumatic Loss Trend
Medical Only Losses for All Classes Combined

Exhibit V-I
Page 3
Summary

Severity Trend

Year	(1) Ultimate Claim Counts	(2) Ultimate Incurred Losses	(3) Average Loss	(4) Annual Average Loss Change
2009	469	488,067	1,041	
2010	559	732,331	1,310	25.8%
2011	627	851,341	1,358	3.7%
2012	552	680,951	1,234	-9.1%
2013	479	756,064	1,578	27.9%
2014	581	807,295	1,389	-12.0%
2015	396	611,456	1,544	11.2%
2016	303	541,639	1,788	15.8%
2017	327	748,018	2,288	28.0%
2018	297	620,629	2,090	-8.7%

Med. Only Severity Trend Factor: 1.078
Source: Summary Exhibit (V-K)



Sources:

- (1) Exhibit VI-C-2
- (2) Exhibit VI-C-3

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

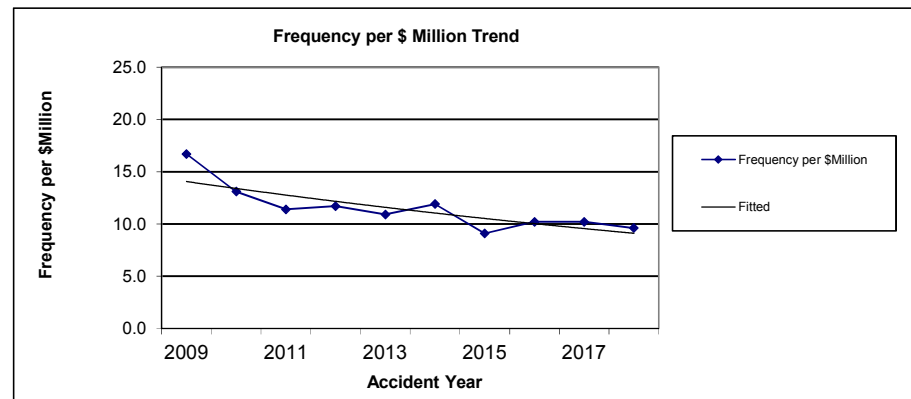
Exhibit V-I
Page 4
Summary

Frequency Trend

Year	(1) Ultimate Claim Counts	(2) Loss Cost Premium	(3) Frequency per(\$M)	(4) Annual Average Loss Change
2009	195	11,684,524	16.7	
2010	177	13,510,619	13.1	-21.6%
2011	189	16,535,220	11.4	-13.0%
2012	201	17,230,534	11.7	2.6%
2013	175	16,100,116	10.9	-6.8%
2014	290	24,369,728	11.9	9.2%
2015	186	20,448,272	9.1	-23.5%
2016	150	14,771,801	10.2	12.1%
2017	171	16,753,814	10.2	0.0%
2018	168	17,432,005	9.6	-5.9%

Frequency per \$Million Trend Factor: 0.962
Source: Summary Exhibit (V-K)

$$\text{Fitted} = 14.7517 \times e^{(-0.0482 \times (\text{YEAR} - 2008))}$$



Sources:

- (1) Exhibit V-I - Col. 2
- (2) Exhibit X-B
- (3) (1) / (2) x 1,000,000
- (4) (Current Freq. / Prior Freq. -1.0) x 100'

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

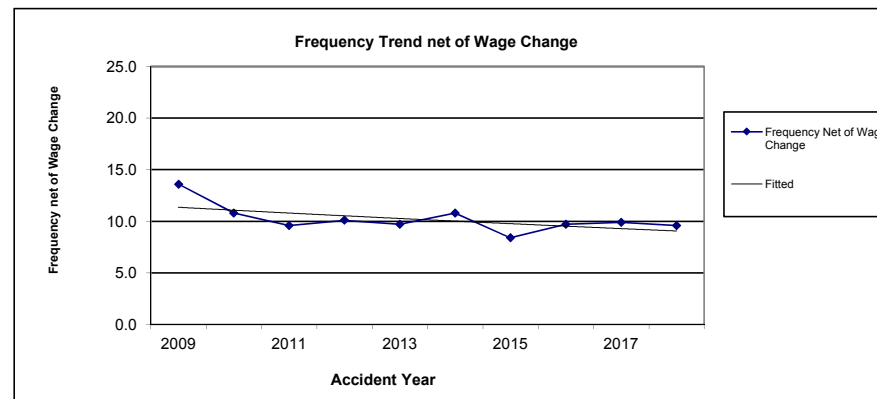
Exhibit V-I
Page 5
Summary

Frequency Trend Net of Wage Trend

<u>Year</u>	(1) Loss Cost <u>Premium</u>	(2) Statewide Average <u>Weekly Wage</u>	(3) On 2018 <u>Level</u>	(4) Loss Cost Premium <u>on 2018 Level</u>	(5) Claim <u>Counts</u>	(6) Adjusted Frequency <u>per(\$M)</u>	(7) Annual Frequency <u>Change</u>
2009	11,684,524	836	1.226	14,325,226	195	13.6	
2010	13,510,619	845	1.213	16,388,381	177	10.8	-20.6%
2011	16,535,220	858	1.195	19,759,588	189	9.6	-11.1%
2012	17,230,534	888	1.154	19,884,036	201	10.1	5.2%
2013	16,100,116	917	1.118	17,999,930	175	9.7	-4.0%
2014	24,369,728	932	1.100	26,806,701	290	10.8	11.3%
2015	20,448,272	951	1.078	22,043,237	186	8.4	-22.2%
2016	14,771,801	978	1.048	15,480,847	150	9.7	15.5%
2017	16,753,814	995	1.030	17,256,428	171	9.9	2.1%
2018	17,432,005	1025	1.000	17,432,005	168	9.6	-3.0%

Frequency net of Wage Change Trend Factor: 0.985
Source: Summary Exhibit (V-K)

$$\text{Fitted} = 11.6458 \times e^{(-0.0251 \times (\text{YEAR} - 2008))}$$



Sources:

- (1) Exhibit X-B
- (2) Exhibit XII-D
- (3) 2018 is 1.000. Values for other years divided into 2018 value to determine factor
- (4) (1) x (3)
- (5) Exhibit VI-C-1
- (6) (5) / (4) * 1,000,000
- (7) (Current Freq./Prior Freq.-1.0)x100

Traumatic Loss Trend
Medical (excl. Medical Only Losses) for All Classes Combined

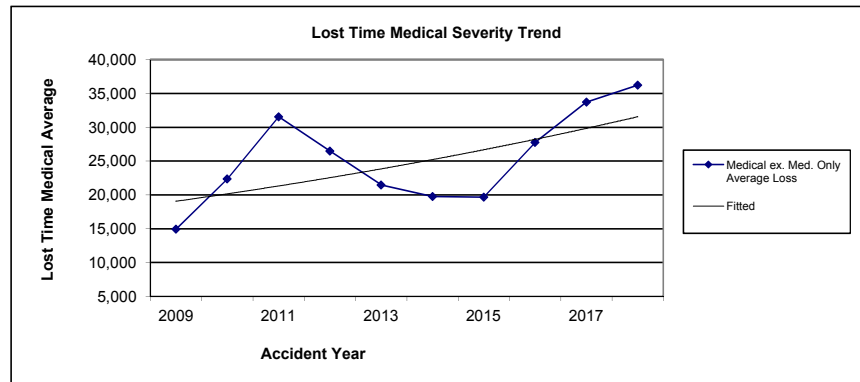
Exhibit V-I
Page 6
Summary

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)
	Ultimate	Med. Only	Ult. Med. On	Claim	Average	Annual
Year	Medical Losses	Ultimate	Lost Time	Counts	Loss	Average Loss
	<u>Incurred</u>	<u>Losses</u>	<u>Claims</u>			<u>Change</u>
2009	3,397,971	488,067	2,909,904	195	14,923	
2010	4,695,625	732,331	3,963,294	177	22,391	50.0%
2011	6,816,013	851,341	5,964,672	189	31,559	40.9%
2012	6,001,026	680,951	5,320,075	201	26,468	-16.1%
2013	4,511,567	756,064	3,755,503	175	21,460	-18.9%
2014	6,536,992	807,295	5,729,697	290	19,758	-7.9%
2015	4,272,992	611,456	3,661,536	186	19,686	-0.4%
2016	4,709,375	541,639	4,167,736	150	27,785	41.1%
2017	6,515,137	748,018	5,767,119	171	33,726	21.4%
2018	6,705,823 *	620,629	6,085,194	168	36,221	7.4%

Lost Time Medical Severity Trend Factor: 1.037
Source: Summary Exhibit (V-K)

Fitted=18031.6766 x e^{^(0.0560*(YEAR-2008))}



Source:

- (1) Exhibit V-H, Page 2
- (2) Exhibit VI-C-3
- (3) (1)-(2)
- (4) Exhibit VI-C-1
- (5) (3)/(4)
- (6) (Current Avg. Loss / Prior Avg. Loss - 1.0) x 100

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

Coal Mine Compensation Rating Bureau
Traumatic - Large Claim Capping
Accident Year 2018

Exhibit V-J

Large Claim(s)								
Claim ID	Class Code	Reported Incurred Indemnity	Indemnity LDF	Developed Indemnity	Reported Incurred Medical	Medical LDF	Developed Medical	Developed Total
49734	1001	1,008,419	2.0500	2,067,259	-	1.1792	-	2,067,259
49769	1001	189,000	2.0500	387,450	750,000	1.1792	884,400	1,271,850
49989	1001	637,664	2.0500	1,307,211	-	1.1792	-	1,307,211
50046	1021	375,064	2.0500	768,881	1,000,000	1.1792	1,179,200	1,948,081
Total		2,210,147		4,530,801	1,750,000		2,063,600	6,594,401
Total Developed on each claim is greater than catastrophe limit (\$1,250,000) so capping and allocation are necessary.								

Distribution of Reported Incurred Losses for Large Claim(s) between Indemnity and Medical				
		Reported Incurred	Percent Distribution	
Indemnity		2,210,147	55.8%	
Medical		1,750,000	44.2%	
Total		3,960,147	100.0%	

Indemnity Capping				
		Reported Incurred Indemnity	Indemnity LDF	Developed Indemnity
Total		5,566,332	2.0500	11,410,981
Large Claim(s)		2,210,147	2.0500	4,530,801
Total Excluding Large Claim(s)				6,880,180
		Capped Total	% Indemnity	Capped Indemnity
Large Claim(s)		5,000,000	55.8%	2,790,000
Total Developed Indemnity with Large Claim(s) capped				9,670,180

Medical Capping				
		Reported Incurred Medical	Medical LDF	Developed Medical
Total		5,562,604	1.1792	6,559,423
Large Claim(s)		1,750,000	1.1792	2,063,600
Total Excluding Large Claim(s)				4,495,823
		Capped Total	% Medical	Capped Medical
Large Claim(s)		5,000,000	44.2%	2,210,000
Total Developed Medical with Large Claim(s) capped				6,705,823

Source: Total Reported Incurred from Exhibits VI-A-4 and VI-B-4
Loss Development Factors (LDFs) from V-C-1 and V-C-2
Large Claim data from CMCRB database

File: N:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-05-FGHIJK.xlsm]V-J

PAB

Run Date: September 09, 2019 - 10:36:28 AM

Effective Date - April 01, 2020
124,827,670.375200

Traumatic Loss Trend Summary of Estimates

Exhibit V-K

			Ests. 1&2	Ests. 3&4	Ests. 5&6	Ests. 7&8	Ests.9&10	Ests.11&12	Average
V-I-1	Traditional	Indemnity	107.9%	104.4%	104.2%	109.6%	105.7%	105.7%	106.3% Severity
	Moving Average	Indemnity	106.6%	104.7%	105.4%	108.6%	106.6%	107.9%	106.6% Severity
									106.5% Average
V-I-2	Traditional	Total Medical	111.0%	109.9%	108.8%	110.5%	109.1%	107.5%	109.5% Severity
	Moving Average	Total Medical	109.7%	108.9%	110.3%	107.6%	106.3%	107.3%	108.4% Severity
									109.0% Average
V-I-3	Traditional	Medical Only	107.9%	106.6%	107.3%	109.1%	107.8%	108.8%	107.9% Severity
	Moving Average	Medical Only	107.5%	107.9%	108.1%	107.2%	107.6%	107.7%	107.7% Severity
									107.8% Average
V-I-4	Traditional	Frequency	94.6%	96.4%	97.4%	94.4%	96.5%	97.7%	96.2% Frequency
	Moving Average	Frequency	95.6%	96.9%	97.6%	94.6%	95.9%	96.5%	96.2% Frequency
									96.2% Average
V-I-5	Traditional	Frequency	96.8%	98.7%	99.8%	96.6%	98.8%	100.0%	98.5% Frequency
	Moving Average	Frequency	97.9%	99.2%	99.8%	96.8%	98.2%	98.7%	98.4% Frequency
									98.5% Average
V-I-6	Traditional	Medical Ex. M.O.	108.1%	104.9%	102.8%	107.7%	103.8%	101.0%	104.7% Severity
	Moving Average	Medical Ex. M.O.	105.1%	103.3%	104.2%	102.8%	100.2%	100.6%	102.7% Severity
									103.7% Average
			<u>Average Frequency Indication</u>						
Traditional	Trad Freq		94.5%	96.3%	97.4%	94.3%	96.4%	97.6%	96.1%
Moving Average	MA Freq		95.6%	96.8%	97.5%	94.5%	95.9%	96.4%	96.1%
									96.1%

	Indemnity	Medical
Selected Frequency Factor	97.25% *	97.25% *
Selected Severity Factor	104.00% **	105.00% ***
Composite Trend Factor	101.10%	102.10%

* Selected Frequency Trend - see Actuarial Report

** Selected Indemnity Severity Trend - see Actuarial Report

*** Selected Medical Severity Trend - see Actuarial Report

Approved 4-1-2019 [101.4%](#) [101.0%](#)

Selected 4-1-2020 [101.1%](#) **** [102.1%](#) ****

**** Limited to a maximum change of +-3.0 points, when necessary.

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 1
Estimates 01-06

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)
<u>Year</u>	<u>Ultimate Losses</u>	<u>Claim Counts</u>	<u>Average Loss</u>	<u>Annual Average Loss Change</u>	<u>3-Year Moving Average</u>	<u>Annual Mov. Avg. Change</u>
2009	5,377,808	195	27,579			
2010	7,560,618	177	42,715	54.9%		
2011	8,678,253	189	45,917	7.5%	38,737	
2012	9,997,729	201	49,740	8.3%	46,124	19.1%
2013	7,822,913	175	44,702	-10.1%	46,786	1.4%
2014	12,551,905	290	43,282	-3.2%	45,908	-1.9%
2015	12,192,731	186	65,552	51.5%	51,179	11.5%
2016	9,481,246	150	63,208	-3.6%	57,347	12.1%
2017	10,507,390	171	61,447	-2.8%	63,402	10.6%
2018	9,670,180 *	168	57,561	-6.3%	60,739	-4.2%

Analysis performed on data for 2009 through 2018.	Geometric Average:	8.5%	6.6%	Ests. 1 & 2
	Regression Indication:	7.3%		
	Selected:	7.9%	6.6%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	3.8%	4.7%	Ests. 3 & 4
	Regression Indication:	5.0%		
	Selected:	4.4%	4.7%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	3.3%	5.4%	Ests. 5 & 6
	Regression Indication:	5.0%		
	Selected:	4.2%	5.4%	

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

Sources:

- (1) Exhibit V-H page 1, Column (3)
- (2) Exhibit VI-C-1
- (4) (Current Avg. Loss / Prior Avg. Loss -1.0) x 100

Traumatic Loss Trend
Medical and Medical Only Losses for All Classes Combined

Exhibit V-I
Page 2
Estimates 01-06

Severity Trend

Year	(1) Ultimate Losses	(2) Claim Counts	(3) Average Loss	(4) Annual Average Loss Change	(5) 3-Year Moving Average	(6) Annual Mov. Avg. Change
2009	3,397,971	664	5,117			
2010	4,695,625	736	6,380	24.7%		
2011	6,816,013	816	8,353	30.9%	6,617	
2012	6,001,026	753	7,969	-4.6%	7,567	14.4%
2013	4,511,567	654	6,898	-13.4%	7,740	2.3%
2014	6,536,992	871	7,505	8.8%	7,457	-3.7%
2015	4,272,992	582	7,342	-2.2%	7,248	-2.8%
2016	4,709,375	453	10,396	41.6%	8,414	16.1%
2017	6,515,137	498	13,083	25.8%	10,274	22.1%
2018	6,705,823 *	465	14,421	10.2%	12,633	23.0%

Analysis performed on data for 2009 through 2018.	Geometric Average:	12.2%	9.7%	Ests. 1 & 2
	Regression Indication:	9.7%		
	Selected:	11.0%	9.7%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	10.7%	8.9%	Ests. 3 & 4
	Regression Indication:	9.1%		
	Selected:	9.9%	8.9%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	8.1%	10.3%	Ests. 5 & 6
	Regression Indication:	9.4%		
	Selected:	8.8%	10.3%	

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

Sources:

- (1) Exhibit V-H page 2, Column (3)
- (2) Exhibit VI-C-1 + Exhibit VI-C-2
- (4) (Current Avg. Loss / Prior Avg. Loss -1.0) x 100

Traumatic Loss Trend
Medical Only Losses for All Classes Combined

Exhibit V-I
Page 3
Estimates 01-06

Severity Trend

Year	(1) Ultimate Claim Counts	(2) Ultimate Incurred Losses	(3) Average Loss	(4) Annual Average Loss Change	(5) 3-Year Moving Average	(6) Annual Mov. Avg. Change
2009	469	488,067	1,041			
2010	559	732,331	1,310	25.8%		
2011	627	851,341	1,358	3.7%	1,236	
2012	552	680,951	1,234	-9.1%	1,301	5.3%
2013	479	756,064	1,578	27.9%	1,390	6.8%
2014	581	807,295	1,389	-12.0%	1,400	0.7%
2015	396	611,456	1,544	11.2%	1,504	7.4%
2016	303	541,639	1,788	15.8%	1,574	4.7%
2017	327	748,018	2,288	28.0%	1,873	19.0%
2018	297	620,629	2,090	-8.7%	2,055	9.7%

Analysis performed on data for 2009 through 2018.	Geometric Average:	8.1%	7.5%	Ests. 1 & 2
	Regression Indication:	7.6%		
	Selected:	7.9%	7.5%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	6.0%	7.9%	Ests. 3 & 4
	Regression Indication:	7.2%		
	Selected:	6.6%	7.9%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	6.4%	8.1%	Ests. 5 & 6
	Regression Indication:	8.2%		
	Selected:	7.3%	8.1%	

Sources:

- (1) Exhibit VI-C-2
- (2) Exhibit VI-C-3
- (4) (Current Avg. Loss / Prior Avg. Loss -1.0) x 100

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 4
Estimates 01-06

Frequency Trend

<u>Year</u>	(1) Ultimate Claim Counts	(2) Loss Cost Premium	(3) Frequency per(\$M)	(4) Annual Average Loss Change	(5) 3-Year Moving Average	(6) Annual Mov. Avg. Change
2009	195	11,684,524	16.7			
2010	177	13,510,619	13.1	-21.6%		
2011	189	16,535,220	11.4	-13.0%	13.7	
2012	201	17,230,534	11.7	2.6%	12.1	-11.7%
2013	175	16,100,116	10.9	-6.8%	11.3	-6.6%
2014	290	24,369,728	11.9	9.2%	11.5	1.8%
2015	186	20,448,272	9.1	-23.5%	10.6	-7.8%
2016	150	14,771,801	10.2	12.1%	10.4	-1.9%
2017	171	16,753,814	10.2	0.0%	9.8	-5.8%
2018	168	17,432,005	9.6	-5.9%	10.0	2.0%

Analysis performed on data for 2009 through 2018.	Geometric Average:	-6.0%	-4.4%	Ests. 1 & 2
	Regression Indication:	-4.7%		
	Selected:	-5.4%	-4.4%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	-3.8%	-3.1%	Ests. 3 & 4
	Regression Indication:	-3.3%		
	Selected:	-3.6%	-3.1%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	-2.4%	-2.4%	Ests. 5 & 6
	Regression Indication:	-2.8%		
	Selected:	-2.6%	-2.4%	

Sources:

- (1) Exhibit V-I-1 Col. 2
- (2) Exhibit X-B
- (3) (1) / (2) x 1,000,000
- (4) (Current Freq. / Prior Freq. -1.0) x 100'

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 5
Estimates 01-06

Frequency Trend Net of Wage Trend

	(1) Loss Cost	(2) Statewide Average Weekly Wage	(3) On 2018 Level	(4) Loss Cost Premium on 2018 Level	(5) Claim Counts	(6) Adjusted Frequency per(\$M)	(7) Annual Frequency Change	(8) 3-Year Moving Average	(9) Annual Mov. Avg. Change
Year	Premium								
2009	11,684,524	836	1.226	14,325,226	195	13.6			
2010	13,510,619	845	1.213	16,388,381	177	10.8	-20.6%		
2011	16,535,220	858	1.195	19,759,588	189	9.6	-11.1%	11.3	
2012	17,230,534	888	1.154	19,884,036	201	10.1	5.2%	10.2	-9.7%
2013	16,100,116	917	1.118	17,999,930	175	9.7	-4.0%	9.8	-3.9%
2014	24,369,728	932	1.100	26,806,701	290	10.8	11.3%	10.2	4.1%
2015	20,448,272	951	1.078	22,043,237	186	8.4	-22.2%	9.6	-5.9%
2016	14,771,801	978	1.048	15,480,847	150	9.7	15.5%	9.6	0.0%
2017	16,753,814	995	1.030	17,256,428	171	9.9	2.1%	9.3	-3.1%
2018	17,432,005	1025	1.000	17,432,005	168	9.6	-3.0%	9.7	4.3%

Analysis performed on data for 2009 through 2018.	Geometric Average:	-3.8%	-2.1%	Ests. 1 & 2
	Regression Indication:	-2.5%		
	Selected:	-3.2%	-2.1%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	-1.5%	-0.8%	Ests. 3 & 4
	Regression Indication:	-1.0%		
	Selected:	-1.3%	-0.8%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	0.0%	-0.2%	Ests. 5 & 6
	Regression Indication:	-0.4%		
	Selected:	-0.2%	-0.2%	

Sources:

- (1) Exhibit X-B
- (2) Exhibit XII-D
- (3) 2018 is 1.000. Values for other years divided into 2018 value to determine factor
- (4) (1)x(3)
- (5) Exhibit VI-C-1
- (6) (5) / (4) * 1,000,000
- (7) (Current Freq./Prior Freq.-1.0)x100

Traumatic Loss Trend
Medical (excl. Medical Only Losses) for All Classes Combined

Exhibit V-I
Page 6
Estimates 01-06

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ultimate Medical Losses	Med. Only Ultimate Incurred	Ult. Med. On Lost Time	Claim Counts	Average Loss	Annual Average Loss Change	3-Year Moving Average	Annual Mov. Avg. Change
<u>Year</u>	<u>Incurred</u>	<u>Losses</u>	<u>Claims</u>	<u>Counts</u>	<u>Loss</u>	<u>Change</u>	<u>Average</u>	<u>Change</u>
2009	3,397,971	488,067	2,909,904	195	14,923			
2010	4,695,625	732,331	3,963,294	177	22,391	50.0%		
2011	6,816,013	851,341	5,964,672	189	31,559	40.9%	22,958	
2012	6,001,026	680,951	5,320,075	201	26,468	-16.1%	26,806	16.8%
2013	4,511,567	756,064	3,755,503	175	21,460	-18.9%	26,496	-1.2%
2014	6,536,992	807,295	5,729,697	290	19,758	-7.9%	22,562	-14.8%
2015	4,272,992	611,456	3,661,536	186	19,686	-0.4%	20,301	-10.0%
2016	4,709,375	541,639	4,167,736	150	27,785	41.1%	22,410	10.4%
2017	6,515,137	748,018	5,767,119	171	33,726	21.4%	27,066	20.8%
2018	6,705,823 *	620,629	6,085,194	168	36,221	7.4%	32,577	20.4%

Analysis performed on data for 2009 through 2018.	Geometric Average:	10.4%	5.1%	Ests. 1 & 2
	Regression Indication:	5.8%		
	Selected:	8.1%	5.1%	
Analysis performed on data for 2010 through 2018.	Geometric Average:	6.2%	3.3%	Ests. 3 & 4
	Regression Indication:	3.6%		
	Selected:	4.9%	3.3%	
Analysis performed on data for 2011 through 2018.	Geometric Average:	2.0%	4.2%	Ests. 5 & 6
	Regression Indication:	3.6%		
	Selected:	2.8%	4.2%	

Sources:

- (1) Exhibit V-H, Page 2
- (2) Exhibit VI-C-3
- (3) (1)-(2)
- (4) Exhibit VI-C-1
- (5) (3)/(4)
- (6) (Current Avg. Loss / Prior Avg. Loss - 1.0) x 100

* Note: Ultimate losses for 2018 reflect limitation on large claims,
see Exhibit V-J

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 1
Estimates 07-12

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)
<u>Year</u>	<u>Ultimate Losses</u>	<u>Claim Counts</u>	<u>Average Loss</u>	<u>Annual Average Loss Change</u>	<u>3-Year Moving Average</u>	<u>Annual Mov. Avg. Change</u>
2009	5,377,808	195	27,579			
2010	7,560,618	177	42,715	54.9%		
2011	8,678,253	189	45,917	7.5%	38,737	
2012	9,997,729	201	49,740	8.3%	46,124	19.1%
2013	7,822,913	175	44,702	-10.1%	46,786	1.4%
2014	12,551,905	290	43,282	-3.2%	45,908	-1.9%
2015	12,192,731	186	65,552	51.5%	51,179	11.5%
2016	9,481,246	150	63,208	-3.6%	57,347	12.1%
2017	10,507,390	171	61,447	-2.8%	63,402	10.6%

Analysis performed on data for 2009 through 2017.	Geometric Average:	10.5%	8.6%	Ests. 7 & 8
	Regression Indication:	8.6%		
	Selected:	9.6%	8.6%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	5.3%	6.6%	Ests. 9 & 10
	Regression Indication:	6.1%		
	Selected:	5.7%	6.6%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	5.0%	7.9%	Ests. 11 & 12
	Regression Indication:	6.4%		
	Selected:	5.7%	7.9%	

Sources:

- (1) Exhibit V-H page 1, Column (3)
- (2) Exhibit VI-C-1
- (4) (Current Avg. Loss / Prior Avg. Loss - 1.0) x 100

Traumatic Loss Trend
Medical and Medical Only Losses for All Classes Combined

Exhibit V-I
Page 2
Estimates 07-12

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)
<u>Year</u>	<u>Ultimate Losses</u>	<u>Claim Counts</u>	<u>Average Loss</u>	<u>Annual Average Loss Change</u>	<u>3-Year Moving Average</u>	<u>Annual Mov. Avg. Change</u>
2009	3,397,971	664	5,117			
2010	4,695,625	736	6,380	24.7%		
2011	6,816,013	816	8,353	30.9%	6,617	
2012	6,001,026	753	7,969	-4.6%	7,567	14.4%
2013	4,511,567	654	6,898	-13.4%	7,740	2.3%
2014	6,536,992	871	7,505	8.8%	7,457	-3.7%
2015	4,272,992	582	7,342	-2.2%	7,248	-2.8%
2016	4,709,375	453	10,396	41.6%	8,414	16.1%
2017	6,515,137	498	13,083	25.8%	10,274	22.1%

Analysis performed on data for 2009 through 2017.	Geometric Average:	12.4%	7.6%	Ests. 7 & 8
	Regression Indication:	8.5%		
	Selected:	10.5%	7.6%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	10.8%	6.3%	Ests. 9 & 10
	Regression Indication:	7.4%		
	Selected:	9.1%	6.3%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	7.8%	7.3%	Ests. 11 & 12
	Regression Indication:	7.2%		
	Selected:	7.5%	7.3%	

Sources:

- (1) Exhibit V-H page 2, Column (3)
- (2) Exhibit VI-C-1 + Exhibit VI-C-2
- (4) $(\text{Current Avg. Loss} / \text{Prior Avg. Loss} - 1.0) \times 100$

Traumatic Loss Trend
Medical Only Losses for All Classes Combined

Exhibit V-I
Page 3
Estimates 07-12

Severity Trend

<u>Year</u>	(1) Ultimate Claim Counts	(2) Ultimate Incurred Losses	(3) Average Loss	(4) Annual Average Loss Change	(5) 3-Year Moving Average	(6) Annual Mov. Avg. Change
2009	469	488,067	1,041			
2010	559	732,331	1,310	25.8%		
2011	627	851,341	1,358	3.7%	1,236	
2012	552	680,951	1,234	-9.1%	1,301	5.3%
2013	479	756,064	1,578	27.9%	1,390	6.8%
2014	581	807,295	1,389	-12.0%	1,400	0.7%
2015	396	611,456	1,544	11.2%	1,504	7.4%
2016	303	541,639	1,788	15.8%	1,574	4.7%
2017	327	748,018	2,288	28.0%	1,873	19.0%

Analysis performed on data for 2009 through 2017.	Geometric Average:	10.4%	7.2%	Ests. 7 & 8
	Regression Indication:	7.7%		
	Selected:	9.1%	7.2%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	8.3%	7.6%	Ests. 9 & 10
	Regression Indication:	7.2%		
	Selected:	7.8%	7.6%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	9.1%	7.7%	Ests. 11 & 12
	Regression Indication:	8.5%		
	Selected:	8.8%	7.7%	

Sources:

- (1) Exhibit VI-C-2
- (2) Exhibit VI-C-3
- (4) $(\text{Current Avg. Loss} / \text{Prior Avg. Loss} - 1.0) \times 100$

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 4
Estimates 07-12

Frequency Trend

<u>Year</u>	(1) Ultimate Claim Counts	(2) Loss Cost Premium	(3) Frequency per(\$M)	(4) Annual Average Loss Change	(5) 3-Year Moving Average	(6) Annual Mov. Avg. Change
2009	195	11,684,524	16.7			
2010	177	13,510,619	13.1	-21.6%		
2011	189	16,535,220	11.4	-13.0%	13.7	
2012	201	17,230,534	11.7	2.6%	12.1	-11.7%
2013	175	16,100,116	10.9	-6.8%	11.3	-6.6%
2014	290	24,369,728	11.9	9.2%	11.5	1.8%
2015	186	20,448,272	9.1	-23.5%	10.6	-7.8%
2016	150	14,771,801	10.2	12.1%	10.4	-1.9%
2017	171	16,753,814	10.2	0.0%	9.8	-5.8%

Analysis performed on data for 2009 through 2017.	Geometric Average:	-6.0%	-5.4%	Ests. 7 & 8
	Regression Indication:	-5.1%		
	Selected:	-5.6%	-5.4%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	-3.5%	-4.1%	Ests. 9 & 10
	Regression Indication:	-3.5%		
	Selected:	-3.5%	-4.1%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	-1.8%	-3.5%	Ests. 11 & 12
	Regression Indication:	-2.8%		
	Selected:	-2.3%	-3.5%	

Sources:

- (1) Exhibit V-I-1 Col. 2
- (2) Exhibit X-B-1
- (3) (1) / (2) x 1,000,000
- (4) (Current Freq. / Prior Freq. - 1.0) x 100'

Traumatic Loss Trend
Indemnity and Funeral Losses for All Classes Combined

Exhibit V-I
Page 5
Estimates 07-12

Frequency Trend net of Wage Trend

Year	(1) Loss Cost Premium	(2) Statewide Average Weekly Wage	(3) On 2018 Level	(4) Loss Cost Premium on 2018 Level	(5) Claim Counts	(6) Adjusted Frequency per(\$M)	(7) Annual Frequency Change	(8) 3-Year Moving Average	(9) Annual Mov. Avg. Change
2009	11,684,524	836	1.226	14,325,226	195	13.6			
2010	13,510,619	845	1.213	16,388,381	177	10.8	-20.6%		
2011	16,535,220	858	1.195	19,759,588	189	9.6	-11.1%	11.3	
2012	17,230,534	888	1.154	19,884,036	201	10.1	5.2%	10.2	-9.7%
2013	16,100,116	917	1.118	17,999,930	175	9.7	-4.0%	9.8	-3.9%
2014	24,369,728	932	1.100	26,806,701	290	10.8	11.3%	10.2	4.1%
2015	20,448,272	951	1.078	22,043,237	186	8.4	-22.2%	9.6	-5.9%
2016	14,771,801	978	1.048	15,480,847	150	9.7	15.5%	9.6	0.0%
2017	16,753,814	995	1.030	17,256,428	171	9.9	2.1%	9.3	-3.1%

Analysis performed on data for 2009 through 2017.	Geometric Average:	-3.9%	-3.2%	Ests. 7 & 8
	Regression Indication:	-2.9%		
	Selected:	-3.4%	-3.2%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	-1.2%	-1.8%	Ests. 9 & 10
	Regression Indication:	-1.2%		
	Selected:	-1.2%	-1.8%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	0.5%	-1.3%	Ests. 11 & 12
	Regression Indication:	-0.5%		
	Selected:	0.0%	-1.3%	

Source:

- (1) Exhibit X-B
- (2) Exhibit XII-D
- (3) See Exhibit V-I-5 Estimates 01-06.
- (4) (1)x(3)
- (5) Exhibit VI-C-1
- (6) (5) / (4) * 1,000,000
- (7) (Current Freq./Prior Freq.-1.0)x100

Traumatic Loss Trend
Medical (excl. Medical Only Losses) for All Classes Combined

Exhibit V-I
Page 6
Estimates 07-12

Severity Trend

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ultimate	Med. Only	Ult. Med. On			Annual	3-Year	Annual
	Medical Losses	Ultimate	Lost Time	Claim	Average	Average Loss	Moving	Annual
<u>Year</u>	<u>Incurred</u>	<u>Losses</u>	<u>Claims</u>	<u>Counts</u>	<u>Loss</u>	<u>Change</u>	<u>Average</u>	<u>Change</u>
2009	3,397,971	488,067	2,909,904	195	14,923			
2010	4,695,625	732,331	3,963,294	177	22,391	50.0%		
2011	6,816,013	851,341	5,964,672	189	31,559	40.9%	22,958	
2012	6,001,026	680,951	5,320,075	201	26,468	-16.1%	26,806	16.8%
2013	4,511,567	756,064	3,755,503	175	21,460	-18.9%	26,496	-1.2%
2014	6,536,992	807,295	5,729,697	290	19,758	-7.9%	22,562	-14.8%
2015	4,272,992	611,456	3,661,536	186	19,686	-0.4%	20,301	-10.0%
2016	4,709,375	541,639	4,167,736	150	27,785	41.1%	22,410	10.4%
2017	6,515,137	748,018	5,767,119	171	33,726	21.4%	27,066	20.8%

Analysis performed on data for 2009 through 2017.	Geometric Average:	10.7%	2.8%	Ests. 7 & 8
	Regression Indication:	4.6%		
	Selected:	7.7%	2.8%	
Analysis performed on data for 2010 through 2017.	Geometric Average:	6.0%	0.2%	Ests. 9 & 10
	Regression Indication:	1.5%		
	Selected:	3.8%	0.2%	
Analysis performed on data for 2011 through 2017.	Geometric Average:	1.1%	0.6%	Ests. 11 & 12
	Regression Indication:	0.8%		
	Selected:	1.0%	0.6%	

Source:

- (1) Exhibit V-H, Page 2
- (2) Exhibit VI-C-3
- (3) (1)-(2)
- (4) Exhibit VI-C-1
- (5) (3)/(4)
- (6) (Current Avg. Loss / Prior Avg. Loss - 1.0) x 100

Coal Mine Compensation Rating Bureau
Traumatic Loss Development
Indemnity Claim Settlement Adjustment Factors
Summary of Data and Selections

Data as of	(1) 0 to 10 Development	(2) 0 to 10 Selection
4/30/2005	0.3%	0.5%
4/30/2004	0.8%	0.5%
4/30/2003	1.4%	0.5%
4/30/2002	1.0%	1.0%
4/30/2001	2.2%	1.5%
4/30/2000	3.1%	2.0%
4/30/1999	2.7%	2.0%
4/30/1998	2.8%	2.0%
<u>4/30/1997</u>	<u>2.2%</u>	<u>2.0%</u>
Total	16.5%	12.0%

Data as of	(3) 10 to 20 Development	(4) 10 to 20 Selection
4/30/2010	0.0%	0.0%
4/30/2009	0.1%	0.0%
4/30/2008	0.0%	0.0%
4/30/2007	0.1%	0.1%
4/30/2006	0.2%	0.2%
4/30/2005	0.4%	0.2%
4/30/2004	0.2%	0.2%
4/30/2003	0.9%	0.3%
4/30/2002	0.5%	0.6%
4/30/2001	1.4%	0.9%
4/30/2000	4.4%	1.2%
4/30/1999	0.1%	1.2%
4/30/1998	0.0%	1.2%
<u>4/30/1997</u>	<u>0.0%</u>	<u>1.2%</u>
Total	8.3%	7.3%

Sources:

- (1) Exhibit VI-A Page 5b
- (2) Exhibit VI-A Page 5b
- (3) Exhibit VI-A Page 5c for 2001-2010, Filing effective 4/1/2009 for 1997-2000
- (4) Exhibit VI-A Page 5c for 2001-2010, Filing effective 4/1/2009 for 1997-2000

Note: Personnel from the CMCRB have concluded that the impact of Act 57 has waned to the point that the Claim Settlement effect for this year and future years is zero(0.00). Thus this Exhibit will no longer be updated.

Coal Mine Compensation Rating Bureau
Traumatic Loss Development
Indemnity Claim Settlement Adjustment Factors - 1st to 10th Report

Accident	(1) 4/30/1997 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/1998 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/1999 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/2000 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection
1987	18,806	759	4.0%	xx	1988	16,032	0	0.0%	xx	1989	18,878	368	1.9%	xx	1990	29,328	800	2.7%	xx
1988	15,731	926	5.9%	xx	1989	19,106	874	4.6%	xx	1990	29,654	1150	3.9%	xx	1991	19,165	457	2.4%	xx
1989	19,920	856	4.3%	xx	1990	30,400	1150	3.8%	xx	1991	19,430	596	3.1%	xx	1992	23,117	988	4.3%	xx
1990	30,426	478	1.6%	xx	1991	19,984	544	2.7%	xx	1992	24,122	491	2.0%	xx	1993	20,137	0	0.0%	xx
1991	19,515	319	1.6%	xx	1992	24,216	651	2.7%	xx	1993	19,482	440	2.3%	xx	1994	20,495	1321	6.4%	xx
1992	23,283	0	0.0%	xx	1993	19,117	919	4.8%	xx	1994	21,755	656	3.0%	xx	1995	12,031	0	0.0%	xx
1993	17,896	445	2.5%	xx	1994	21,058	337	1.6%	xx	1995	11,322	127	1.1%	xx	1996	10,936	663	6.1%	xx
1994	19,319	0	0.0%	xx	1995	10,822	349	3.2%	xx	1996	10,813	296	2.7%	xx	1997	xx	xx	xx	xx
1995	10,133	0	0.0%	xx	1996	9,862	0	0.0%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx
Total	175,029	3,783	2.2%	2.0%	Total	170,597	4,824	2.8%	2.0%	Total	155,456	4,124	2.7%	2.0%	Total	135,209	4,229	3.1%	2.0%

Accident	(1) 4/30/2001 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/2002 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/2003 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection	Accident	(1) 4/30/2004 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection
1991	19,058	244	1.3%	xx	1992	22,275	0	0.0%	xx	1993	19,361	236	1.2%	xx	1994	20,243	368	1.8%	xx
1992	22,030	813	3.7%	xx	1993	20,029	314	1.6%	xx	1994	20,681	637	3.1%	xx	1995	11,907	0	0.0%	xx
1993	19,887	522	2.6%	xx	1994	21,125	214	1.0%	xx	1995	11,831	0	0.0%	xx	1996	11,994	0	0.0%	xx
1994	20,719	434	2.1%	xx	1995	12,001	354	2.9%	xx	1996	11,985	0	0.0%	xx	1997	xx	0	xx	xx
1995	12,009	162	1.3%	xx	1996	12,046	0	0.0%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx
1996	11,474	156	1.4%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx
1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx
1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx
1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx	2002	xx	xx	xx	xx
Total	105,177	2,331	2.2%	1.5%	Total	87,476	882	1.0%	1.0%	Total	63,858	873	1.4%	0.5%	Total	44,144	368	0.8%	0.5%

Accident	(1) 4/30/2005 Year	(2) 12 Month Rpt.Loss ^(a) Fav_Dev ^(a)	(3) 2 / (1)	(4) Selection
1995	11,956	70	0.6%	xx
1996	12,182	0	0.0%	xx
1997	xx	0	xx	xx
1998	xx	0	xx	xx
1999	xx	xx	xx	xx
2000	xx	xx	xx	xx
2001	xx	xx	xx	xx
2002	xx	xx	xx	xx
2003	xx	xx	xx	xx
Total	24,138	70	0.3%	0.5%

Note: Personnel from the CMCRB have concluded that the impact of Act 57 has waned to the point that the Claim Settlement effect for this year and future years is zero(0.00). Thus this Exhibit will no longer be updated.

(a) All amounts are in thousands of dollars

Sources: Column (1) Exhibit VI-A p. 1a
CMCRB Data Base

Coal Mine Compensation Rating Bureau
Traumatic Loss Development
Indemnity Claim Settlement Adjustment Factors - Beyond 10th Report

Accident	(1) 4/30/2001	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2002	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2003	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2004	(2) 12 Month	(3)	(4)
Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection
1983	19,728	283	1.4%	xx	1983	19,581	0	0.0%	xx	1983	19,537	132	0.7%	xx	1983	19,617	0	0.0%	xx
1984	25,745	185	0.7%	xx	1984	25,801	0	0.0%	xx	1984	25,724	0	0.0%	xx	1984	25,837	0	0.0%	xx
1985	16,662	219	1.3%	xx	1985	16,776	0	0.0%	xx	1985	16,860	0	0.0%	xx	1985	16,954	0	0.0%	xx
1986	18,002	194	1.1%	xx	1986	17,729	221	1.2%	xx	1986	17,764	0	0.0%	xx	1986	17,812	0	0.0%	xx
1987	17,785	0	0.0%	xx	1987	17,924	0	0.0%	xx	1987	17,933	122	0.7%	xx	1987	18,072	0	0.0%	xx
1988	15,926	194	1.2%	xx	1988	15,795	217	1.4%	xx	1988	15,878	0	0.0%	xx	1988	15,845	0	0.0%	xx
1989	18,586	0	0.0%	xx	1989	18,938	0	0.0%	xx	1989	18,878	0	0.0%	xx	1989	18,876	0	0.0%	xx
1990	28,447	1222	4.3%	xx	1990	28,697	0	0.0%	xx	1990	28,678	294	1.0%	xx	1990	28,968	0	0.0%	xx
1991	xx	xx	xx	xx	1991	18,465	442	2.4%	xx	1991	18,005	458	2.5%	xx	1991	18,078	16	0.1%	xx
1992	xx	xx	xx	xx	1992	xx	xx	xx	xx	1992	21,860	835	3.8%	xx	1992	21,375	32	0.1%	xx
Total	160,881	2,297	1.4%	0.9%	Total	179,706	880	0.5%	0.6%	Total	201,117	1,841	0.9%	0.3%	1993	19,300	358	1.9%	xx
															Total	220,734	406	0.2%	0.2%

Accident	(1) 4/30/2005	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2006	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2007	(2) 12 Month	(3)	(4)	Accident	(1) 4/30/2008	(2) 12 Month	(3)	(4)
Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection	Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection
1983	19,558	0	0.0%	xx	1983	19,629	0	0.0%	xx	1983	19,485	0	0.0%	xx	1983	19,478	0	0.0%	xx
1984	26,025	0	0.0%	xx	1984	25,971	0	0.0%	xx	1984	26,136	0	0.0%	xx	1984	26,205	0	0.0%	xx
1985	17,068	0	0.0%	xx	1985	17,182	0	0.0%	xx	1985	17,144	0	0.0%	xx	1985	16,838	0	0.0%	xx
1986	17,907	0	0.0%	xx	1986	17,896	94	0.5%	xx	1986	17,999	0	0.0%	xx	1986	18,146	0	0.0%	xx
1987	18,208	0	0.0%	xx	1987	18,028	295	1.6%	xx	1987	18,007	0	0.0%	xx	1987	18,110	0	0.0%	xx
1988	15,700	0	0.0%	xx	1988	15,763	0	0.0%	xx	1988	15,827	0	0.0%	xx	1988	15,892	0	0.0%	xx
1989	18,503	380	2.1%	xx	1989	18,538	0	0.0%	xx	1989	18,579	0	0.0%	xx	1989	18,621	0	0.0%	xx
1990	29,336	0	0.0%	xx	1990	29,409	176	0.6%	xx	1990	29,661	0	0.0%	xx	1990	29,843	0	0.0%	xx
1991	18,154	0	0.0%	xx	1991	18,201	0	0.0%	xx	1991	18,272	0	0.0%	xx	1991	18,318	0	0.0%	xx
1992	20,831	631	3.0%	xx	1992	20,921	0	0.0%	xx	1992	20,665	0	0.0%	xx	1992	20,738	0	0.0%	xx
1993	19,597	0	0.0%	xx	1993	19,782	0	0.0%	xx	1993	19,781	167	0.8%	xx	1993	19,744	0	0.0%	xx
1994	20,328	0	0.0%	xx	1994	20,479	8	0.0%	xx	1994	20,635	0	0.0%	xx	1994	20,796	0	0.0%	xx
Total	241,215	1,011	0.4%	0.2%	1995	11,961	0	0.0%	xx	1995	11,960	9	0.1%	xx	1995	11,969	0	0.0%	xx
					Total	253,760	573	0.2%	0.2%	1996	12,122	0	0.0%	xx	1996	12,194	40	0.3%	xx
										Total	266,273	176	0.1%	0.1%	1997	8,505	0	0.0%	xx
															Total	275,397	40	0.0%	0.0%

Accident	(1) 4/30/2009	(2) 12 Month	(3)	(4)
Year	Rpt.Loss ^(a)	Fav. Dev ^(a)	(2) / (1)	Selection
1983	19,527	0	0.0%	xx
1984	26,360	0	0.0%	xx
1985	16,906	0	0.0%	xx
1986	18,235	0	0.0%	xx
1987	18,212	0	0.0%	xx
1988	15,850	0	0.0%	xx
1989	18,662	0	0.0%	xx
1990	29,708	140	0.5%	xx
1991	18,252	104	0.6%	xx
1992	20,811	0	0.0%	xx
1993	19,892	0	0.0%	xx
1994	20,956	0	0.0%	xx
1995	11,976	0	0.0%	xx
1996	12,324	0	0.0%	xx
1997	8,675	0	0.0%	xx
1998	8,648	0	0.0%	xx
Total	284,994	244	0.1%	0.0%

Note: Personnel from the CMCRB have concluded that the impact of Act 57 has waned to the point that the Claim Settlement effect for this year and future years is zero(0.00). Thus this Exhibit will no longer be updated.

(a) All amounts are in thousands of dollars

Sources: Column (1) Exhibit VI-A p. 1a
CMCRB Database as of 04/30/19 - Validated 08/06/19 and prior

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Run Date: August 25, 2019 - 05:00:36 PM

PAB
Effective Date - April 01, 2020
4,710,808.422000

Exhibit VI-B
Page 2

Source: A. Adjustment to Act 44 Law Level Exhibit VI-D Page 1
B. Claim Settlement Adjustments Additions Exhibits VI-B-5 (Refer to selected table above.)
C. A+B (with maximum of 1,000)

Coal Mine Compensation Rating Bureau
Traumatic Loss Development
Medical Claim Settlement Adjustment Factors

Accident Year	(1) 4/30/1994 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/1995 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/1996 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/1997 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection
1984	7,380	243	3.3%	xx	1985	4,303	199	4.6%	xx	1986	5,126	84	1.6%	xx	1987	4,895	93	1.9%	xx
1985	4,469	105	2.3%	xx	1986	5,166	122	2.4%	xx	1987	4,959	72	1.5%	xx	1988	5,318	202	3.8%	xx
1986	5,192	222	4.3%	xx	1987	4,805	122	2.5%	xx	1988	5,470	451	8.2%	xx	1989	8,177	793	9.7%	xx
1987	4,941	262	5.3%	xx	1988	5,860	161	2.7%	xx	1989	8,720	575	6.6%	xx	1990	7,929	274	3.5%	xx
1988	5,722	396	6.9%	xx	1989	8,842	299	3.4%	xx	1990	7,730	220	2.8%	xx	1991	7,315	141	1.9%	xx
1989	8,405	532	6.3%	xx	1990	7,595	471	6.2%	xx	1991	7,240	281	3.9%	xx	1992	4,284	319	7.4%	xx
1990	7,754	298	3.8%	xx	1991	7,208	83	1.2%	xx	1992	4,458	269	6.0%	xx	1993	6,061	216	3.6%	xx
1991	6,824	328	4.8%	xx	1992	4,462	198	4.4%	xx	1993	6,163	189	3.1%	xx	1994	5,062	155	3.1%	xx
1992	5,389	437	8.1%	xx	1993	5,786	164	2.8%	xx	1994	4,930	231	4.7%	xx	1995	4,444	211	4.7%	xx
Total	56,076	2,823	5.0%	2.0%	Total	54,027	1,819	3.4%	2.0%	Total	54,796	2,372	4.3%	2.0%	Total	53,485	2,404	4.5%	2.0%

Accident Year	(1) 4/30/1998 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/1999 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2000 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2001 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection
1988	5,228	70	1.3%	xx	1989	8,525	96	1.1%	xx	1990	7,808	52	0.7%	xx	1991	7,348	85	1.2%	xx
1989	7,991	321	4.0%	xx	1990	7,726	83	1.1%	xx	1991	7,176	15	0.2%	xx	1992	2,286	86	3.8%	xx
1990	7,725	436	5.6%	xx	1991	7,140	208	2.9%	xx	1992	2,327	125	5.4%	xx	1993	5,730	77	1.3%	xx
1991	7,216	173	2.4%	xx	1992	2,428	74	3.0%	xx	1993	5,767	161	2.8%	xx	1994	5,060	29	0.6%	xx
1992	4,439	85	1.9%	xx	1993	5,804	322	5.5%	xx	1994	5,029	130	2.6%	xx	1995	4,484	150	3.3%	xx
1993	6,077	194	3.2%	xx	1994	5,111	198	3.9%	xx	1995	4,416	97	2.2%	xx	1996	4,806	187	3.9%	xx
1994	5,217	77	1.5%	xx	1995	4,294	164	3.8%	xx	1996	4,808	119	2.5%	xx	1997	xx	xx	xx	xx
1995	4,354	272	6.2%	xx	1996	4,690	106	2.3%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx
1996	4,316	87	2.0%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx
Total	52,563	1,715	3.3%	2.0%	Total	45,718	1,251	2.7%	1.5%	Total	37,331	699	1.9%	1.4%	Total	29,714	614	2.1%	1.3%

Accident Year	(1) 4/30/2002 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2003 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2004 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2005 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection
1992	2,939	16	0.5%	xx	1993	5,971	0	0.0%	xx	1994	5,179	59	1.1%	xx	1995	4,669	0	0.0%	xx
1993	5,812	57	1.0%	xx	1994	5,125	0	0.0%	xx	1995	4,740	83	1.8%	xx	1996	4,626	0	0.0%	xx
1994	5,113	40	0.8%	xx	1995	4,706	0	0.0%	xx	1996	4,702	32	0.7%	xx	1997	xx	xx	xx	xx
1995	4,667	101	2.2%	xx	1996	4,578	145	3.2%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx
1996	4,704	242	5.1%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx
1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx
1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx
1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx	2002	xx	xx	xx	xx
2000	xx	xx	xx	xx	2001	xx	xx	xx	xx	2002	xx	xx	xx	xx	2003	xx	xx	xx	xx
Total	23,235	456	2.0%	1.2%	Total	20,380	145	0.7%	1.1%	Total	14,621	174	1.2%	1.0%	Total	9,295	0	0.0%	0.8%

Accident Year	(1) 4/30/2006 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2007 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2008 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection	Accident Year	(1) 4/30/2009 Rpt.Loss ^(a)	(2) 12 Month Fav. Dev ^(a)	(3) [2] / [1]	(4) Selection
1996	4,708	25	0.5%	xx	1997	xx	xx	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx
1997	xx	0	xx	xx	1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx
1998	xx	xx	xx	xx	1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx
1999	xx	xx	xx	xx	2000	xx	xx	xx	xx	2001	xx	xx	xx	xx	2002	xx	xx	xx	xx
2000	xx	xx	xx	xx	2001	xx	xx	xx	xx	2002	xx	xx	xx	xx	2003	xx	xx	xx	xx
2001	xx	xx	xx	xx	2002	xx	xx	xx	xx	2003	xx	xx	xx	xx	2004	xx	xx	xx	xx
2002	xx	xx	xx	xx	2003	xx	xx	xx	xx	2004	xx	xx	xx	xx	2005	xx	xx	xx	xx
2003	xx	xx	xx	xx	2004	xx	xx	xx	xx	2005	xx	xx	xx	xx	2006	xx	xx	xx	xx
2004	xx	xx	xx	xx	2005	xx	xx	xx	xx	2006	xx	xx	xx	xx	2007	xx	xx	xx	xx
Total	4,708	25	0.5%	0.5%	Total	0	0	0.0%	0.0%	Total	0	0	0.0%	0.0%	2008	xx	xx	xx	xx
															Total	0	0	0.0%	0.0%

(a) All amounts are in thousands of dollars
Incurred losses for 1992 exclude effects of large loss.

Note: Personnel from the CMCRB have concluded that the impact of Act 57 has waned to the point that the Claim Settlement effect for this year and future years is zero(0.00). Thus this Exhibit will no longer be updated.

Sources: Column (1) Exhibit VI-B p. 1a
CMCRB Data Base

**Coal Mine Compensation Rating Bureau
Traumatic Loss Development**

Exhibit VI-C-1

Incurred Indemnity and Funeral Claim Counts for All Classes Combined (excl. USLH)

A. Indemnity Reported Incurred Claims as of 04/30/19																				
Report	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	263	240	227	241	196	219	203	156	163	193	170	168	175	169	149	258	161	140	159	150
2	269	250	238	244	196	227	228	163	164	206	193	177	182	195	171	286	181	147	168	
3	272	252	237	246	197	230	229	165	164	203	195	177	188	199	174	289	184	149		
4	274	254	237	246	198	231	230	166	164	205	195	177	189	200	175	290	186			
5	274	254	237	246	199	231	230	166	164	204	195	177	189	200	175	290				
6	274	254	237	246	199	231	230	166	164	204	195	177	189	200	175					
7	274	254	237	246	199	231	230	166	164	204	195	177	189	201						
8	274	254	237	246	199	231	230	166	164	204	195	177	189							
9	274	254	237	246	199	231	230	166	164	204	195	177	189							
10	274	254	237	246	199	231	230	166	164	204	195									
11	274	254	237	246	199	231	230	166	164	204										
12	274	254	237	246	199	231	230	166	164											
13	274	254	237	246	199	231	230	166												
14	274	254	237	246	199	231	230													
15	274	254	237	246	199	231														
16	274	254	237	246	199															
17	274	254	237	246																
18	274	254	237																	
19	274	254																		
20	274																			

B. Annual Claim Count Development																			
1:2									1.0674	1.1353	1.0536	1.0400	1.1538	1.1477	1.1085	1.1242	1.0500	1.0566	
2:3								1.0000	0.9854	1.0104	1.0000	1.0330	1.0205	1.0175	1.0105	1.0166	1.0136		
3:4								1.0061	1.0099	1.0000	1.0000	1.0053	1.0050	1.0057	1.0035	1.0109			
4:5							1.0000	1.0000	1.0000	0.9951	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			
5:6						1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				
6:7					1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0050					
7:8				1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000						
8:9			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000						
9:10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000							
10:11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000								
11:12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000									
12:13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000										
13:14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000											
14:15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000												
15:16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000													
16:17	1.0000	1.0000	1.0000	1.0000	1.0000														
17:18	1.0000	1.0000	1.0000																
18:19	1.0000	1.0000																	
19:20	1.0000																		

C. Summary																			
	10 Year	6 Year	10 Year	10 Year	6 Year	6 Year	Average												
	Straight	Straight	Weighted	Average	Average	Weighted	of Middle												
	Average	Average	Average	ex. Hi&Lo	ex. Hi&Lo	Average	Four	Selected											
1:2	1.0937	1.1068	1.0941	1.0929	1.1093	1.1081	1.1007	1.1007					1.1222	2018	168				
2:3	1.0108	1.0186	1.0105	1.0111	1.0171	1.0181	1.0143	1.0143					1.0196	2017	171				
3:4	1.0046	1.0051	1.0046	1.0044	1.0049	1.0050	1.0048	1.0048					1.0052	2016	150				
4:5	0.9995	1.0000	0.9995	1.0000	1.0000	1.0000	0.9999	1.0004					1.0004	2015	186				
5:6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2014	290				
6:7	1.0005	1.0008	1.0005	1.0000	1.0000	1.0009	1.0005	1.0000					1.0000	2013	175				
7:8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2012	201				
8:9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2011	189				
9:10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2010	177				
10:11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2009	195				
11:12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2008	204				
12:13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2007	164				
13:14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2006	166				
14:15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2005	230				
15:16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2004	231				
16:17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2003	199				
17:18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2002	246				
18:19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2001	237				
19:20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	2000	254				
														1999	274				

Source: A. Loss Development Data: CMCRB Database as of 04/30/19 - Validated 08/06/19

B. Annual Loss Development Ratios

C. Summary of Straight Averages for 10 and 6 years.

Weighted Averages for 10 and 6 years,
Straight Averages for 10 and 6 years excluding highest and lowest,
Average of middle 4 of above 6 averages.

Coal Mine Compensation Rating Bureau

Exhibit VI-C-2

Traumatic Loss Development

Medical Only Claim Counts for All Classes Combined (excl. USLH)

A. Medical Only Reported Incurred Claims Valued as of 04/30/19

Report	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	641	488	519	487	453	516	476	456	488	523	479	559	628	563	472	592	402	295	321	297
2	640	500	536	499	462	524	479	453	494	527	469	560	632	554	477	583	399	304	327	
3	641	503	539	500	461	523	480	451	495	528	469	559	627	553	478	581	397	303		
4	641	497	535	500	461	522	479	450	495	527	469	559	627	553	478	580	396			
5	643	497	535	500	461	522	479	450	495	528	469	559	627	553	478	581				
6	643	498	535	500	461	522	479	450	495	528	469	559	627	553	479					
7	643	498	535	500	461	522	479	450	495	528	469	559	627	552						
8	643	498	535	500	461	522	479	450	495	528	469	559	627							
9	643	498	535	500	461	522	479	450	495	528	469	559								
10	643	498	535	500	461	522	479	450	495	528	469									
11	643	498	535	500	461	522	479	450	495	528										
12	643	498	535	500	461	522	479	450	495											
13	643	498	535	500	461	522	479	450												
14	643	498	535	500	461	522	479													
15	643	498	535	500	461	522														
16	643	498	535	500	461															
17	643	498	535	500																
18	643	498	535																	
19	643	498																		
20	643																			

B. Annual Claim Count Development

1:2										1.0076	0.9791	1.0018	1.0064	0.9840	1.0106	0.9848	0.9925	1.0305	1.0187
2:3									1.0020	1.0019	1.0000	0.9982	0.9921	0.9982	1.0021	0.9966	0.9950	0.9967	
3:4								0.9978	1.0000	0.9981	1.0000	1.0000	1.0000	1.0000	1.0000	0.9983	0.9975		
4:5							1.0000	1.0000	1.0000	1.0019	1.0000	1.0000	1.0000	1.0000	1.0000	1.0017			
5:6						1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0021				
6:7					1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9982					
7:8				1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000						
8:9			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000							
9:10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000								
10:11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000									
11:12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000										
12:13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000											
13:14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000												
14:15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000													
15:16	1.0000	1.0000	1.0000	1.0000	1.0000														
16:17	1.0000	1.0000	1.0000	1.0000															
17:18	1.0000	1.0000	1.0000																
18:19	1.0000	1.0000																	
19:20	1.0000																		

C. Summary

	10 Year Straight Average	6 Year Straight Average	10 Year Weighted Average	10 Year Average ex. Hi&Lo	6 Year Average ex. Hi&Lo	6 Year Weighted Average	Average of Middle Four	Selected	Cumulative	Acc. Year	Ultimate
1:2	1.0016	1.0035	0.9996	1.0008	1.0017	0.9996	1.0009	1.0000	1.0000	2018	297
2:3	0.9983	0.9968	0.9982	0.9986	0.9966	0.9966	0.9975	1.0000	1.0000	2017	327
3:4	0.9992	0.9993	0.9992	0.9993	0.9996	0.9994	0.9993	1.0000	1.0000	2016	303
4:5	1.0004	1.0003	1.0004	1.0002	1.0000	1.0003	1.0003	1.0000	1.0000	2015	396
5:6	1.0002	1.0004	1.0002	1.0000	1.0000	1.0003	1.0002	1.0000	1.0000	2014	581
6:7	0.9998	0.9997	0.9998	1.0000	1.0000	0.9997	0.9998	1.0000	1.0000	2013	479
7:8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2012	552
8:9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2011	627
9:10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2010	559
10:11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2009	469
11:12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2008	528
12:13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2007	495
13:14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2006	450
14:15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2005	479
15:16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2004	522
16:17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2003	461
17:18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2002	500
18:19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2001	535
19:20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2000	498
										1999	643

Medical Only claims are defined as claims with Medical Incurred dollars greater than zero and Indemnity Incurred dollars equal to zero.

Source: A. Loss Development Data: CMCRB Database as of 04/30/19 - Validated 08/06/19

B. Annual Loss Development Ratios

C. Summary of Straight Averages for 10 and 6 years,

Weighted Averages for 10 and 6 years,
Straight Averages for 10 and 6 years excluding highest and lowest,
Average of middle 4 of above 6 averages.

PAB
Effective Date - April 01, 2020
198,327.982003

**Coal Mine Compensation Rating Bureau
Traumatic Loss Development**

Exhibit VI-C-3

Medical Only Incurred for All Classes Combined (excl. USLH)

A. Medical Only Reported Incurred Losses Valued as of 04/30/19																				
Report	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	458,539	315,407	291,102	326,965	344,009	440,355	393,342	475,073	645,531	538,996	499,273	689,845	830,417	740,247	657,505	844,733	693,513	566,845	708,070	617,296
2	407,349	296,698	341,613	354,474	343,651	489,659	395,971	492,413	667,028	564,408	475,294	712,909	864,057	723,464	724,288	817,585	644,826	559,034	748,018	
3	409,094	300,203	340,771	351,193	342,029	499,930	570,553	464,396	651,680	574,474	487,309	732,324	846,540	709,906	754,367	819,307	617,302	541,639		
4	409,095	304,117	341,085	343,963	346,252	499,000	577,565	464,210	654,006	561,921	487,349	732,324	850,074	710,429	754,990	806,211	611,456			
5	409,426	304,601	341,085	345,393	346,252	499,175	577,565	464,210	657,948	569,251	487,454	732,324	851,341	710,507	755,607	807,295				
6	409,426	305,104	341,085	345,393	346,252	499,175	577,565	464,210	663,201	578,077	487,454	732,324	851,341	710,586	756,064					
7	409,426	305,104	341,085	345,393	346,252	499,175	577,565	464,210	663,201	584,120	487,454	732,324	851,341	680,951						
8	405,010	305,104	347,675	345,393	346,252	499,182	439,393	464,210	663,201	586,976	487,454	732,324	851,341							
9	405,010	305,104	347,675	345,393	346,318	499,182	439,393	464,210	663,201	593,200	487,454	732,331								
10	405,010	305,104	347,675	345,393	346,318	499,182	439,463	464,210	663,201	600,587	488,067									

B. Annual Loss Development

1:2										1.0471	0.9520	1.0334	1.0405	0.9773	1.1016	0.9679	0.9298	0.9862	1.0564
2:3									0.9770	1.0178	1.0253	1.0272	0.9797	0.9813	1.0415	1.0021	0.9573	0.9689	
3:4								0.9996	1.0036	0.9781	1.0001	1.0000	1.0042	1.0007	1.0008	0.9840	0.9905		
4:5							1.0000	1.0000	1.0060	1.0130	1.0002	1.0000	1.0015	1.0001	1.0008	1.0013			
5:6						1.0000	1.0000	1.0000	1.0000	1.0080	1.0155	1.0000	1.0000	1.0001	1.0006				
6:7					1.0000	1.0000	1.0000	1.0000	1.0000	1.0105	1.0000	1.0000	1.0000	0.9583					
7:8				1.0000	1.0000	1.0000	0.7608	1.0000	1.0000	1.0049	1.0000	1.0000	1.0000						
8:9			1.0000	1.0000	1.0002	1.0000	1.0000	1.0000	1.0000	1.0106	1.0000	1.0000							
9:10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0002	1.0000	1.0000	1.0125	1.0013								

C. Summary

	10 Year Straight Average	6 Year Straight Average	10 Year Weighted Average	10 Year Average ex. Hi&Lo	6 Year Average ex. Hi&Lo	6 Year Weighted Average	Average of Middle Four	Selected	Cumulative	Acc. Year	Ultimate
1:2	1.0092	1.0032	1.0095	1.0076	0.9970	1.0015	1.0054	1.0054	1.0054	2018	620,629
2:3	0.9978	0.9885	0.9973	0.9974	0.9830	0.9898	0.9933	1.0000	1.0000	2017	748,018
3:4	0.9962	0.9967	0.9963	0.9974	0.9980	0.9968	0.9968	1.0000	1.0000	2016	541,639
4:5	1.0023	1.0007	1.0022	1.0012	1.0006	1.0007	1.0012	1.0000	1.0000	2015	611,456
5:6	1.0024	1.0027	1.0023	1.0011	1.0002	1.0023	1.0020	1.0000	1.0000	2014	807,295
6:7	0.9969	0.9948	0.9960	1.0000	1.0000	0.9941	0.9969	1.0000	1.0000	2013	756,064
7:8	0.9766	1.0008	0.9756	1.0000	1.0000	1.0008	0.9943	1.0000	1.0000	2012	680,951
8:9	1.0011	1.0018	1.0013	1.0000	1.0000	1.0018	1.0010	1.0000	1.0000	2011	851,341
9:10	1.0014	1.0023	1.0018	1.0002	1.0004	1.0026	1.0015	1.0000	1.0000	2010	732,331

Source: A. Loss Development Data: CMCRB Database as of 04/30/19 - Validated 08/06/19

B. Annual Loss Development Ratios

C. Summary of Straight Averages for 10 and 6 years,

Coal Mine Compensation Rating Bureau
Traumatic - Medical Losses
Summary of Adjustments to Development Factors for Act 44[#]

Report	Accident Year																										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1	0.9773	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
2	0.9908	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
3	0.9961	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		

Adjustments to development factors applicable to medical loss evaluated as of 04/30/2019
Act 44 became effective in 1993.

Source: Unity adjustments for Accident Years 1995 and subsequent
Adjustments for Accident Year 1994 from prior filing (Proposal CM-2-2018) – Exhibit VI-D Page 2

Coal Mine Compensation Rating Bureau
Traumatic - Medical Losses
Derivation of Act 44 Adjustments for Various Accident Years and Sample Payment Patterns

Pages 2 through 15 are reserved for future use.

**Coal Mine Compensation Rating Bureau
Traumatic Loss Development
Paid Losses for All Classes Combined**

Exhibit VI-E

Indemnity and Funeral Reported Paid Losses as of 04/30/19

Report	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1			1,519,950	1,745,062	1,453,835	2,265,522	1,499,127	1,585,758	2,123,723	1,424,937	1,477,485	1,883,649	1,490,981	1,524,765	1,786,240	2,050,254	1,899,710	4,015,185	2,666,351	2,517,576	2,656,641	2,186,695
2		3,416,410	3,017,821	3,311,393	3,447,824	4,498,717	2,589,720	3,607,906	4,763,116	3,031,492	2,973,005	3,608,322	2,864,778	3,435,863	3,977,654	5,436,521	4,482,404	7,405,014	6,101,619	5,232,352	5,222,275	
3	4,858,303	5,057,380	4,474,822	5,285,169	5,249,852	6,269,556	4,097,105	5,068,968	6,595,737	3,990,338	4,078,233	5,798,309	4,380,163	4,339,688	6,103,091	7,383,427	6,081,014	10,801,053	7,572,770	6,951,711		
4	5,469,765	5,832,214	6,135,793	5,944,494	6,234,883	7,427,776	5,182,592	5,951,422	7,770,869	4,714,994	5,032,592	6,658,499	4,536,641	6,078,298	7,555,055	8,102,574	6,502,458	11,716,598	9,243,177			
5	6,279,802	6,733,975	6,807,415	6,698,701	6,774,208	8,517,965	5,654,435	6,488,204	8,470,539	4,894,518	5,362,003	6,986,131	4,912,891	6,374,543	7,923,836	8,850,340	6,652,885	12,157,797				
6	7,170,191	7,213,884	7,415,056	7,237,063	6,969,310	9,582,098	6,009,319	6,696,634	8,926,585	4,966,788	5,648,220	7,214,898	5,041,132	6,690,310	8,262,491	9,105,598	7,003,338					
7	7,497,940	7,570,855	7,496,955	7,283,059	7,402,247	9,706,503	6,156,138	6,907,738	9,168,385	4,991,574	5,900,930	7,644,898	5,082,350	7,001,167	8,313,908	9,298,463						
8	7,533,377	7,822,684	7,575,369	7,329,084	7,611,242	10,138,868	6,524,987	6,965,528	9,422,725	5,014,153	5,986,526	7,907,461	5,123,568	7,146,676	8,347,645							
9	7,615,032	8,111,694	7,654,237	7,462,119	7,653,900	10,368,436	6,705,837	7,020,184	9,810,124	5,059,383	6,164,246	8,052,763	5,164,786	7,433,505								
10	7,701,086	8,184,230	7,731,940	7,468,382	7,721,764	10,619,368	6,755,866	7,139,264	9,993,283	5,160,329	6,244,573	8,342,088	5,206,003									
11	7,791,027	8,357,349	7,805,017	7,474,646	7,789,732	10,873,650	6,839,005	7,190,739	10,178,581	5,422,689	6,340,857	8,901,130										
12	8,001,766	8,408,704	7,879,189	7,480,909	7,855,086	11,009,570	6,873,904	7,236,947	10,392,475	5,671,285	6,488,602											
13	8,057,267	8,460,058	8,038,850	7,481,735	7,919,766	11,120,644	6,908,899	7,276,930	10,542,895	5,694,209												
14	8,118,370	8,717,825	8,050,069	7,481,735	8,081,870	11,269,601	6,946,798	7,319,605	10,679,371													
15	8,170,070	8,731,745	8,050,069	7,481,735	8,115,379	11,305,361	6,981,697	7,362,281														
16	8,264,818	8,742,665	8,050,069	7,481,735	8,142,053	11,400,129	7,016,692															
17	8,297,379	8,753,585	8,050,069	7,481,735	8,205,378	11,418,631																
18	8,329,900	8,764,505	8,050,069	7,481,735	8,226,812																	
19	8,366,436	8,772,505	8,050,069	7,481,735																		
20	8,407,385	8,772,260	8,050,069																			

Medical Reported Paid Losses as of 04/30/19

Report	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1			1,804,774	1,676,127	1,421,461	2,013,689	1,481,566	2,435,389	2,520,705	1,948,500	3,239,013	2,201,565	1,934,714	2,751,976	3,211,934	3,607,221	2,405,205	3,932,999	2,543,986	2,330,259	3,485,615	3,818,681
2		2,809,039	2,438,735	2,184,303	2,027,699	2,673,510	2,121,377	3,067,832	3,289,523	2,697,293	4,228,737	3,040,747	2,474,907	3,388,757	4,428,864	4,556,072	3,576,391	5,142,203	3,295,697	3,381,307	4,550,558	
3	2,949,746	3,069,291	2,657,295	2,352,615	2,236,309	3,007,596	2,326,077	3,293,472	3,433,690	2,989,067	4,505,191	3,288,243	2,729,947	3,681,854	4,791,312	4,910,148	3,732,065	5,725,513	3,579,670	3,601,813		
4	3,057,875	3,187,684	2,844,763	2,491,759	2,326,207	3,216,844	2,429,794	3,868,121	3,535,900	3,075,764	4,755,842	3,434,618	2,838,307	4,050,370	4,980,927	5,036,044	3,783,913	5,806,872	3,711,776			
5	3,213,618	3,334,465	3,021,424	2,617,138	2,425,392	3,378,060	2,544,069	3,923,267	3,673,096	3,157,818	4,895,811	3,482,499	2,888,987	4,182,550	5,232,645	5,071,629	3,837,635	5,825,434				
6	3,474,497	3,457,200	3,075,426	2,673,929	2,495,415	3,495,984	2,582,303	3,963,617	3,920,165	3,202,045	5,005,959	3,502,704	2,911,117	4,258,152	5,334,986	5,142,197	3,895,586					
7	3,596,616	3,495,355	3,097,474	2,698,511	2,581,983	3,544,378	2,683,561	4,005,779	4,000,731	3,238,455	5,123,649	3,511,257	2,933,165	4,295,252	5,480,157	5,165,531						
8	3,648,054	3,506,028	3,138,912	2,715,033	2,622,094	3,699,439	2,709,624	4,053,658	4,067,412	3,238,035	5,214,054	3,521,293	2,960,275	4,307,948	5,547,144							
9	3,735,279	3,530,921	3,214,245	2,725,884	2,671,237	3,711,954	2,751,055	4,069,440	4,101,236	3,301,685	5,294,667	3,531,557	2,993,791	4,313,892								
10	3,787,156	3,552,363	3,235,670	2,764,209	2,715,237	3,727,842	2,775,526	4,099,493	4,121,749	3,378,839	5,339,901	3,544,208	3,030,936									
11	3,998,545	3,612,059	3,271,628	2,785,789	2,768,418	3,738,687	2,801,700	4,156,729	4,152,472	3,500,778	5,404,879	3,552,431										
12	4,026,401	3,625,447	3,339,216	2,791,316	2,821,879	3,760,085	2,830,668	4,186,218	4,188,666	3,554,600	5,505,708											
13	4,068,692	3,640,675	3,530,763	2,794,972	2,865,653	3,783,035	2,860,666	4,197,884	4,398,535	3,591,568												
14	4,106,625	3,686,245	3,531,885	2,799,305	2,899,480	3,795,599	2,889,252	4,212,622	4,408,224													
15	4,152,798	3,716,598	3,532,238	2,823,807	2,925,169	3,944,740	2,926,491	4,228,643														
16	4,235,368	3,733,612	3,532,944	2,831,581	2,939,820	3,961,842	2,943,126															
17	4,268,527	3,750,418	3,533,634	2,872,279	3,006,814	3,961,842																
18	4,309,577	3,764,284	3,533,807	2,872,279	3,017,086																	
19	4,343,956	3,772,745	3,534,720	2,872,279																		
20	4,370,845	3,774,660	3,535,038																			

Source: CMC8B Database as of 04/30/19 - Validated 08/06/19

Coal Mine Compensation Rating Bureau
Average Severity from Before Act 57 through Stages to After Act 57

Exhibit VII-A
Page 1
Underground Anthracite

	<u>State O.D.</u>			<u>Federal Excess O.D.</u>		
	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>
<u>(a) After AMA Guidelines</u>				<u>(a) After AMA Guidelines</u>		
(1) Number of Claims	# 9			# 9		
(2) Average Amounts	\$787,252	\$447,311	\$787,252	\$117,642	\$269,233	\$117,642
(3) Index (Base)	100%		100.0000%	100%		100.0000%
<u>(b) Social Security Offset</u>				<u>(b) Social Security Onset</u>		
(1) Total (including above)	-	-	-	\$125,347	\$269,233	\$125,347
(2) Difference- Social Security (Federal= b-1 minus a-2)	\$65,264	\$0	\$65,264	7,705	0	7,705
(3) Index (to a(2))	8.2901%	0.0000%	8.2901%	6.5495%	0.0000%	6.5495%
(4) Complement	91.7099%	100.0000%	91.7099%	93.4505%	100.0000%	93.4505%
<u>(c) Pension Offset (after Social Security Offset)</u>				<u>(c) Pension Onset</u>		
(1) Total (including above)	-	-	-	\$164,752	\$276,545	\$164,752
(2) Difference	\$120,792	\$54,808	\$120,792	39,405	7,312	39,405
(Federal= c-1 minus b-1)						
(3) % Pension (VII-G, P. 2)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
(4) Net Pension	15,099	6,851	15,099	4,926	914	4,926
(5) Index (to a-2)	1.9179%	1.5316%	1.9179%	4.1870%	0.3395%	4.1870%
(6) Complement	98.0821%	98.4684%	98.0821%			
<u>(d) Combined Social Security and Pension Offsets</u>				<u>(d) Combined Social Sec, Pension Onsets</u>		
(1) Average Amounts	\$80,363	\$6,851	\$80,363	\$12,631	\$914	\$12,631
(b-2 plus c-4)						
(2) Index (to a-2)	10.2080%	1.5316%	10.2080%			10.7365%
(3) Complement	89.7920%	98.4684%	89.7920%	Factor		110.7365%
(4) Total Average	706,889	440,460	706,889			130,273
<u>(e) Wage Level Decrease</u>				<u>(e) Wage Level Increase</u>		
(1) Percentage from Exhibit VII-G, Page 1			0.0000%			
(2) Complement			100.0000%			
(3) Dollar Decrease			0	Dollar Increase		\$0
(4) Factor						100.0000%
<u>(f) Combined Social Security, Pension and Wage Level</u>				<u>(f) Combined Percentage</u>		
(1) Percentage level Excl. AMA Guidelines (d-3 times e-2)			89.7920%	(d-3) times (e-4)		110.7365%
(2) AMA Guidelines (a-3)			<u>100.0000%</u>			<u>100.0000%</u>
(3) Full Effect of Act 57 (1 X 2)			89.7920%			110.7365%
(4) Percentage Decrease			10.2080%	Increase		10.7365%
<u>(g) Combined Dollar Effect</u>						
(1) (d-1) plus (e-3) Decrease			\$80,363	Increase		\$12,631
(2) Average after Act 57 (a-2 plus or minus g-1)			\$706,889			\$130,273

Weighted Level = 100% Base Scenario plus 0% 'All Permanent Partial' Scenario.

Source: Exhibit VII-E, Exhibit IX-A & Exhibit VII-G, Page 1 and Page 2.

Coal Mine Compensation Rating Bureau
Average Severity from Before Act 57 through Stages to After Act 57

Exhibit VII-A
Page 2
Underground Bituminous

	<u>State O.D.</u>			<u>Federal Excess O.D.</u>		
	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>
<u>(a) After AMA Guidelines</u>				<u>(a) After AMA Guidelines</u>		
(1) Number of Claims	# 61			# 61		
(2) Average Amounts	\$307,965	\$273,551	\$307,965	\$233,231	\$247,213	\$233,231
(3) Index (Base)	100%		100.0000%	100%		100.0000%
<u>(b) Social Security Offset</u>				<u>(b) Social Security Onset</u>		
(1) Total (including above)	-	-	-	\$240,466	\$253,830	\$240,466
(2) Difference- Social Security (Federal= b-1 minus a-2)	\$25,750	\$16,172	\$25,750	7,235	6,617	7,235
(3) Index (to a(2))	8.3613%	5.9119%	8.3613%	3.1021%	2.6766%	3.1021%
(4) Complement	91.6387%	94.0881%	91.6387%	96.8979%	97.3234%	96.8979%
<u>(c) Pension Offset (after Social Security Offset)</u>				<u>(c) Pension Onset</u>		
(1) Total (including above)	-	-	-	\$268,881	\$276,445	\$268,881
(2) Difference	\$79,364	\$70,063	\$79,364	28,415	22,615	28,415
(Federal= c-1 minus b-1)						
(3) % Pension (VII-G, P. 2)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
(4) Net Pension	9,921	8,758	9,921	3,552	2,827	3,552
(5) Index (to a-2)	3.2213%	3.2016%	3.2213%	1.5229%	1.1435%	1.5229%
(6) Complement	96.7787%	96.7984%	96.7787%			
<u>(d) Combined Social Security and Pension Offsets</u>				<u>(d) Combined Social Sec, Pension Onsets</u>		
(1) Average Amounts (b-2 plus c-4)	\$35,671	\$24,930	\$35,671	\$10,787	\$9,444	\$10,787
(2) Index (to a-2)	11.5826%	9.1134%	11.5826%			4.6250%
(3) Complement	88.4174%	90.8866%	88.4174%	Factor		104.6250%
(4) Total Average	272,295	248,621	272,295			244,018
<u>(e) Wage Level Decrease</u>				<u>(e) Wage Level Increase</u>		
(1) Percentage from Exhibit VII-G, Page 1			0.0000%			
(2) Complement			100.0000%			
(3) Dollar Decrease			0	Dollar Increase		\$0
(4) Factor						100.0000%
<u>(f) Combined Social Security, Pension and Wage Level</u>				<u>(f) Combined Percentage</u>		
(1) Percentage level Excl. AMA Guidelines (d-3 times e-2)			88.4174%			104.6250%
(2) AMA Guidelines (a-3)			<u>100.0000%</u>			<u>100.0000%</u>
(3) Full Effect of Act 57 (1 X 2)			88.4174%			104.6250%
(4) Percentage Decrease			11.5826%	Increase		4.6250%
<u>(g) Combined Dollar Effect</u>						
(1) (d-1) plus (e-3)			\$35,671	Increase		\$10,787
(2) Average after Act 57 (a-2 plus or minus g-1)			\$272,295			\$244,018

Weighted Level = 100% Base Scenario plus 0% 'All Permanent Partial' Scenario.

Source: Exhibit VII-E, Exhibit IX-A & Exhibit VII-G, Page 1 and Page 2.

Coal Mine Compensation Rating Bureau
Average Severity from Before Act 57 through Stages to After Act 57

Exhibit VII-A
Page 3
Surface Anthracite

	<u>State O.D.</u>			<u>Federal Excess O.D.</u>		
	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>
<u>(a) After AMA Guidelines</u>				<u>(a) After AMA Guidelines</u>		
(1) Number of Claims	# 37			# 37		
(2) Average Amounts	\$533,892	\$360,614	\$533,892	\$63,234	\$138,945	\$63,234
(3) Index (Base)	100%		100.0000%	100%		100.0000%
<u>(b) Social Security Offset</u>				<u>(b) Social Security Onset</u>		
(1) Total (including above)	-	-	-	\$66,210	\$138,983	\$66,210
(2) Difference- Social Security (Federal= b-1 minus a-2)	\$14,410	\$4,165	\$14,410	2,976	38	2,976
(3) Index (to a(2))	2.6990%	1.1550%	2.6990%	4.7063%	0.0273%	4.7063%
(4) Complement	97.3010%	98.8450%	97.3010%	95.2937%	99.9727%	95.2937%
<u>(c) Pension Offset (after Social Security Offset)</u>				<u>(c) Pension Onset</u>		
(1) Total (including above)	-	-	-	\$83,095	\$151,465	\$83,095
(2) Difference	\$107,372	\$78,357	\$107,372	16,885	12,482	16,885
(Federal= c-1 minus b-1)						
(3) % Pension (VII-G, P. 2)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
(4) Net Pension	13,422	9,795	13,422	2,111	1,560	2,111
(5) Index (to a-2)	2.5139%	2.7161%	2.5139%	3.3378%	1.1229%	3.3378%
(6) Complement	97.4861%	97.2839%	97.4861%			
<u>(d) Combined Social Security and Pension Offsets</u>				<u>(d) Combined Social Sec. Pension Onsets</u>		
(1) Average Amounts (b-2 plus c-4)	\$27,832	\$13,960	\$27,832	\$5,087	\$1,598	\$5,087
(2) Index (to a-2)	5.2129%	3.8711%	5.2129%			8.0441%
(3) Complement	94.7871%	96.1289%	94.7871%	Factor		108.0441%
(4) Total Average	506,061	346,654	506,061			68,321
<u>(e) Wage Level Decrease</u>				<u>(e) Wage Level Increase</u>		
(1) Percentage from Exhibit VII-G, Page 1			0.0000%			
(2) Complement			100.0000%			
(3) Dollar Decrease			0	Dollar Increase		\$0
(4) Factor						100.0000%
<u>(f) Combined Social Security, Pension and Wage Level</u>				<u>(f) Combined Percentage</u>		
(1) Percentage level Excl. AMA Guidelines (d-3 times e-2)			94.7871%			108.0441%
(2) AMA Guidelines (a-3)			<u>100.0000%</u>			<u>100.0000%</u>
(3) Full Effect of Act 57 (1 X 2)			94.7871%			108.0441%
(4) Percentage Decrease			5.2129%	Increase		8.0441%
<u>(g) Combined Dollar Effect</u>						
(1) (d-1) plus (e-3)			\$27,832	Increase		\$5,087
(2) Average after Act 57 (a-2 plus or minus g-1)			\$506,061			\$68,321

Weighted Level = 100% Base Scenario plus 0% 'All Permanent Partial' Scenario.

Source: Exhibit VII-E, Exhibit IX-A & Exhibit VII-G, Page 1 and Page 2.

Coal Mine Compensation Rating Bureau
Average Severity from Before Act 57 through Stages to After Act 57

Exhibit VII-A
Page 4
Surface Bituminous

	<u>State O.D.</u>			<u>Federal Excess O.D.</u>		
	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>
<u>(a) After AMA Guidelines</u>				<u>(a) After AMA Guidelines</u>		
(1) Number of Claims	# 21			# 21		
(2) Average Amounts	\$411,918	\$283,070	\$411,918	\$199,557	\$250,438	\$199,557
(3) Index (Base)	100%		100.0000%	100%		100.0000%
<u>(b) Social Security Offset</u>				<u>(b) Social Security Onset</u>		
(1) Total (including above)	-	-	-	\$206,776	\$253,572	\$206,776
(2) Difference- Social Security (Federal= b-1 minus a-2)	\$32,234	\$7,254	\$32,234	7,219	3,134	7,219
(3) Index (to a(2))	7.8253%	2.5626%	7.8253%	3.6175%	1.2514%	3.6175%
(4) Complement	92.1747%	97.4374%	92.1747%	96.3825%	98.7486%	96.3825%
<u>(c) Pension Offset (after Social Security Offset)</u>				<u>(c) Pension Onset</u>		
(1) Total (including above)	-	-	-	\$241,373	\$275,426	\$241,373
(2) Difference	\$74,566	\$47,704	\$74,566	34,597	21,854	34,597
(Federal= c-1 minus b-1)						
(3) % Pension (VII-G, P. 2)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
(4) Net Pension	9,321	5,963	9,321	4,325	2,732	4,325
(5) Index (to a-2)	2.2628%	2.1065%	2.2628%	2.1671%	1.0908%	2.1671%
(6) Complement	97.7372%	97.8935%	97.7372%			
<u>(d) Combined Social Security and Pension Offsets</u>				<u>(d) Combined Social Sec. Pension Onsets</u>		
(1) Average Amounts (b-2 plus c-4)	\$41,555	\$13,217	\$41,555	\$11,544	\$5,866	\$11,544
(2) Index (to a-2)	10.0881%	4.6692%	10.0881%			5.7846%
(3) Complement	89.9119%	95.3308%	89.9119%	Factor		105.7846%
(4) Total Average	370,363	269,853	370,363			211,101
<u>(e) Wage Level Decrease</u>				<u>(e) Wage Level Increase</u>		
(1) Percentage from Exhibit VII-G, Page 1			0.0000%			
(2) Complement			100.0000%			
(3) Dollar Decrease			0	Dollar Increase		\$0
(4) Factor						100.0000%
<u>(f) Combined Social Security, Pension and Wage Level</u>				<u>(f) Combined Percentage</u>		
(1) Percentage level Excl. AMA Guidelines (d-3 times e-2)			89.9119%			105.7846%
(2) AMA Guidelines (a-3)			<u>100.0000%</u>			<u>100.0000%</u>
(3) Full Effect of Act 57 (1 X 2)			89.9119%			105.7846%
(4) Percentage Decrease			10.0881%	Increase		5.7846%
<u>(g) Combined Dollar Effect</u>						
(1) (d-1) plus (e-3)			\$41,555	Increase		\$11,544
(2) Average after Act 57 (a-2 plus or minus g-1)			\$370,363			\$211,101

Weighted Level = 100% Base Scenario plus 0% 'All Permanent Partial' Scenario.

Source: Exhibit VII-E, Exhibit IX-A & Exhibit VII-G, Page 1 and Page 2.

Coal Mine Compensation Rating Bureau
Average Severity from Before Act 57 through Stages to After Act 57

Exhibit VII-A

Page 5

Other Classes

For Information - NOT USED

	<u>State O.D.</u>			<u>Federal Excess O.D.</u>		
	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>	<u>Base</u>	<u>All PP</u>	<u>Weighted 100%-0%</u>
<u>(a) After AMA Guidelines</u>				<u>(a) After AMA Guidelines</u>		
(1) Number of Claims	# 14			# 14		
(2) Average Amounts	\$306,563	\$234,748	\$306,563	\$221,217	\$241,832	\$221,217
(3) Index (Base)	100%		100.0000%	100%		100.0000%
<u>(b) Social Security Offset</u>				<u>(b) Social Security Onset</u>		
(1) Total (including above)	-	-	-	\$232,409	\$249,728	\$232,409
(2) Difference- Social Security	\$21,848	\$10,790	\$21,848	11,192	7,896	11,192
(Federal= b-1 minus a-2)						
(3) Index (to a(2))	7.1268%	4.5964%	7.1268%	5.0593%	3.2651%	5.0593%
(4) Complement	92.8732%	95.4036%	92.8732%	94.9407%	96.7349%	94.9407%
<u>(c) Pension Offset (after Social Security Offset)</u>				<u>(c) Pension Onset</u>		
(1) Total (including above)	-	-	-	\$246,679	\$259,717	\$246,679
(2) Difference	\$78,640	\$54,803	\$78,640	14,270	9,989	14,270
(Federal= c-1 minus b-1)						
(3) % Pension (VII-G, P. 2)	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
(4) Net Pension	9,830	6,850	9,830	1,784	1,249	1,784
(5) Index (to a-2)	3.2065%	2.9182%	3.2065%	0.8063%	0.5163%	0.8063%
(6) Complement	96.7935%	97.0818%	96.7935%			
<u>(d) Combined Social Security and Pension Offsets</u>				<u>(d) Combined Social Sec. Pension Onsets</u>		
(1) Average Amounts	\$31,678	\$17,640	\$31,678	\$12,976	\$9,145	\$12,976
(b-2 plus c-4)						
(2) Index (to a-2)	10.3333%	7.5146%	10.3333%			5.8656%
(3) Complement	89.6667%	92.4854%	89.6667%	Factor		105.8656%
(4) Total Average	274,885	217,108	274,885			234,193
<u>(e) Wage Level Decrease</u>				<u>(e) Wage Level Increase</u>		
(1) Percentage from Exhibit VII-G, Page 1			0.0000%			
(2) Complement			100.0000%			
(3) Dollar Decrease			0	Dollar Increase		\$0
(4) Factor						100.0000%
<u>(f) Combined Social Security, Pension and Wage Level</u>				<u>(f) Combined Percentage</u>		
(1) Percentage level Excl. AMA Guidelines (d-3 times e-2)			89.6667%			105.8656%
(2) AMA Guidelines (a-3)			<u>100.0000%</u>			<u>100.0000%</u>
(3) Full Effect of Act 57 (1 X 2)			89.6667%			105.8656%
(4) Percentage Decrease			10.3333%	Increase		5.8656%
<u>(g) Combined Dollar Effect</u>						
(1) (d-1) plus (e-3)			\$31,678	Increase		\$12,976
(2) Average after Act 57 (a-2 plus or minus g-1)			\$274,885			\$234,193

Weighted Level = 100% Base Scenario plus 0% 'All Permanent Partial' Scenario.

Source: Exhibit VII-E, Exhibit IX-A & Exhibit VII-G, Page 1 and Page 2.

COAL MINE COMPENSATION RATING BUREAU
State Occupational Disease Classification Credibility

Exhibit VII-B-1-A

Classification	Code	(1)	(2)	(3)	(4)	(5) (6) Credibility		(7)	(8)	(9)	(10)
		Estimated Miner Years 2009-2018	Claim Frequency per 100 Miner Years			Expected Awarded	Factor	Claim Frequency Indicated w/ Credibility	Change in Indication	10 Year 2009-2018 Payroll	Claim Frequency Per \$100 of Payroll
			Indicated (Eff 4/1/2019)	Trended to 4/1/2020	Indicated (Eff 4/1/2020)	Claims			After Cred.		
Underground: Anthracite	1011	131.5	0.929777	0.929777	1.825621	1.223	0.166	1.078487	16.0%	6,417,168	0.221003
Bituminous	1002	22,328.2	0.126368	0.126368	0.165708	28.216	0.797	0.157722	24.8%	1,667,335,520	0.021121
Surface: Anthracite	1016	4,026.2	0.131369	0.131369	0.063123	5.289	0.345	0.107824	-17.9%	206,924,146	0.020980
Bituminous	1013	<u>10,975.3</u>	<u>0.031664</u>	0.031664	<u>0.063421</u>	<u>3.475</u>	0.280	<u>0.040556</u>	<u>28.1%</u>	<u>550,891,651</u>	0.008080
Four Standard Classifications		37,461.2	0.101980	0.101980	0.130541	38.203		0.121264	21.1%	2,431,568,485	0.018682
Coke	1017	920.8	0.012329	0.012329	0.010143	0.114	0.051	0.012218	-0.9%	47,001,059	0.002394
Auger	1019	149.2	0.025262	0.025262	0.010223	0.038	0.029	0.024826	-1.7%	7,513,947	0.004930
Co-Gen: Anthracite	1022	1,866.4	0.026430	0.026430	0.010147	0.493	0.105	0.024720	-6.5%	95,757,324	0.004818
Bituminous	1024	2,001.1	0.037065	0.037065	0.010139	0.742	0.129	0.033592	-9.4%	103,333,762	0.006505
Prep Plants: Anthracite	1026	1,494.5	0.241999	0.241999	0.311481	3.617	0.285	0.261801	8.2%	76,934,433	0.050856
Bituminous	1028	<u>4,198.2</u>	<u>0.028259</u>	0.028259	<u>0.046949</u>	<u>1.186</u>	0.163	<u>0.031305</u>	<u>10.8%</u>	<u>311,405,965</u>	0.004220
Other Classes		10,630.2	0.058223		0.067045	6.189		0.061241	2.4%	641,946,490	0.010141
Total		48,091.4	0.092308		0.116506	44.392		0.107996	17.0%	3,073,514,975	0.016898

Source: (1) Estimated Miner Years from Exhibit VII-B-2
(2) Exhibit VII-B-1-B Col. 10
(3) Approved claim frequency trended to 4/1/2020 @ 0.0%
(4) Indicated Frequency - Exhibit VII-B-2; totals and subtotals are based on class frequencies weighted with 10 year estimated miner years.
(5) Expected Awarded Claims = (1) x (2) / 100
(6) Factor Z = ((5) / 44.392)^0.5
(7)=(4)*(6)+((3)*(1-(6)))
(8)=(7)/(2)-1 Totals and subtotals are weighted with 10 year estimated miner years.
(9) From Exhibit X-A
(10)=(7) x (1) / ((9) x 100) / 1,000,000

COAL MINE COMPENSATION RATING BUREAU
State Occupational Disease Classification Credibility

Exhibit VII-B-1-B

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Approved Claim Freq.	Payroll	Expected Awarded Claims 2008-2017	Estimated Miner Years	Estimated Miner Years	Adjustment	Average Weekly Wage	Payroll	Estimated Miner Years	Frequency Per 100
<u>Classification</u>	<u>Code</u>	<u>4/1/2019</u>	<u>2008-2017</u>	<u>(1) x (2)</u>	<u>2009-2018</u>	<u>2018</u>	<u>Factor</u>	<u>2008</u>	<u>2008</u>	<u>2008-2017</u>	<u>Miner Years</u>
Underground: Anthracite	1011	0.195274	8,370,535	1.634548	131.5	3.2	1.072	807	2,136,713	175.8	0.929777
	Bituminous 1002	0.017266	1,588,989,812	27.435498	22,328.2	2,176.6	1.549	807	101,353,977	21,710.8	0.126368
Surface: Anthracite	1016	0.026111	204,200,933	5.331891	4,026.2	344.4	1.072	807	16,954,313	4,058.7	0.131369
	Bituminous 1013	0.006445	<u>588,679,702</u>	<u>3.794041</u>	<u>10,975.3</u>	<u>617.2</u>	1.072	807	<u>73,054,482</u>	11,982.1	0.031664
Four Standard Classifications			2,390,240,982	38.195978	37,461.2	3,141.4			193,499,485	37,927.4	
	Coke 1017	0.002498	52,305,410	0.130659	920.8	78.0	1.072	807	9,761,146	1,059.8	0.012329
	Auger 1019	0.005209	9,442,379	0.049185	149.2	9.8	1.072	807	2,488,558	194.7	0.025262
Co-Gen: Anthracite	1022	0.005280	92,124,171	0.486416	1,866.4	202.9	1.072	807	7,958,335	1,840.4	0.026430
	Bituminous 1024	0.007351	99,805,713	0.733672	2,001.1	210.0	1.072	807	8,468,561	1,979.4	0.037065
Prep Plants: Anthracite	1026	0.048208	73,682,115	3.552067	1,494.5	168.8	1.072	807	6,390,767	1,467.8	0.241999
	Bituminous 1028	0.003889	<u>300,602,668</u>	<u>1.169044</u>	<u>4,198.2</u>	<u>388.2</u>	1.549	807	<u>21,250,256</u>	<u>4,136.9</u>	0.028259
Other Classes			627,962,456		10,630.2	1,057.7			56,317,623	10,679.0	
Total			3,018,203,438		48,091.4	4,199.1			249,817,108	48,606.4	

Source: (1) Approved Claim Frequency (4/1/19): See Exhibit III from filing effective 4/1/2019 (See Exhibit X-F)

(2) 10 years Payroll(2008-2017): See Exhibit X-A-1

(3) Expected Awarded Claims = (1)x(2) / 1,000,000

(4) Estimated Miner Years 2009-2018: See Exhibit VII-B-2

(5) Estimated Miner Years 2018: See Exhibit VII-B-2

(6) Wage Adjustment Factor was derived from CMCRB data. See Exhibit X-G

(7) Average Weekly Wage 2008: See Exhibit XII-D

(8) Payroll 2008: See Exhibit X-A-1

(9) Estimated Miner Years 2008-2017 =(4)-(5)+(8)/((6)x(7)x52)

(10) Frequency Per 100 Miner Years = (3)/((9)/100))

STATE OCCUPATIONAL DISEASE FREQUENCY
WITH FEDERAL EXCESS FREQUENCY

COKE (1017)

IBNR Factor adjusted by 0.4000										0.971	EXPECTED	Statewide	Adjustment	Estimated	Frequency	
YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR +	AWARD	Payroll	AWARDED	ULTIMATE	Average	Factor	Miner	Years	Claims per 100	Weighted
						PENDING	RATIO				Weekly Wage				Miner Years	Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	5,173,552	0.000000		836	1.072		111.0	0.000000	
2010	0	0	0	0	0.0000	0.0000	0.000000	5,435,658	0.000000		845	1.072		115.4	0.000000	
2011	0	0	0	0	0.0000	0.0000	0.000000	3,599,086	0.000000		858	1.072		75.3	0.000000	
2012	0	0	0	0	0.0011	0.0011	0.001068	5,738,105	0.001068		888	1.072		115.9	0.000922	
2013	0	0	0	0	0.0032	0.0032	0.003107	4,791,910	0.003107		917	1.072		93.7	0.003316	
2014	0	0	0	0	0.0059	0.0059	0.005729	4,464,398	0.005729		932	1.072		85.9	0.006669	
2015	0	0	0	0	0.0091	0.0091	0.008836	4,340,376	0.008836		951	1.072		81.9	0.010789	
2016	0	0	0	0	0.0141	0.0141	0.013691	4,435,066	0.013691		978	1.072		81.4	0.016820	
2017	0	0	0	0	0.0223	0.0223	0.021653	4,566,113	0.021653		995	1.072		82.3	0.026310	
2018	0	0	0	0	0.0294	0.0294	0.028547	4,456,795	0.028547		1,025	1.072		78.0	0.036599	
TOTAL	0	0	0	0	0.0851	0.0851	0.082632	47,001,059	0.082632					920.8	0.101425	
Average: State Frequency																0.010143
Federal Excess Frequency (times 40.0%)																0.004057

AUGER (1019)

IBNR Factor adjusted by 0.4000										0.971	EXPECTED	Statewide	Adjustment	Estimated	Frequency	
YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR +	AWARD	Payroll	AWARDED	ULTIMATE	Average	Factor	Miner	Years	Claims per 100	Weighted
						PENDING	RATIO				Weekly Wage				Miner Years	Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	926,163	0.000000		836	1.072		19.9	0.000000	
2010	0	0	0	0	0.0000	0.0000	0.000000	806,696	0.000000		845	1.072		17.1	0.000000	
2011	0	0	0	0	0.0000	0.0000	0.000000	1,176,255	0.000000		858	1.072		24.6	0.000000	
2012	0	0	0	0	0.0002	0.0002	0.000194	808,208	0.000194		888	1.072		16.3	0.001191	
2013	0	0	0	0	0.0007	0.0007	0.000680	1,025,399	0.000680		917	1.072		20.1	0.003382	
2014	0	0	0	0	0.0011	0.0011	0.001068	806,976	0.001068		932	1.072		15.5	0.006891	
2015	0	0	0	0	0.0012	0.0012	0.001165	582,619	0.001165		951	1.072		11.0	0.010593	
2016	0	0	0	0	0.0012	0.0012	0.001165	372,496	0.001165		978	1.072		6.8	0.017135	
2017	0	0	0	0	0.0022	0.0022	0.002136	449,009	0.002136		995	1.072		8.1	0.026373	
2018	0	0	0	0	0.0037	0.0037	0.003593	560,126	0.003593		1,025	1.072		9.8	0.036660	
TOTAL	0	0	0	0	0.0103	0.0103	0.010001	7,513,947	0.010001					149.2	0.102225	
Average: State Frequency																0.010223
Federal Excess Frequency (times 40.0%)																0.004089

ANTHRACITE CO-GEN (1022)

IBNR Factor adjusted by 0.4000										0.971	EXPECTED	Statewide	Adjustment	Estimated	Frequency	
YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR +	AWARD	Payroll	AWARDED	ULTIMATE	Average	Factor	Miner	Years	Claims per 100	Weighted
						PENDING	RATIO				Weekly Wage				Miner Years	Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	8,004,644	0.000000		836	1.072		171.8	0.000000	
2010	0	0	0	0	0.0000	0.0000	0.000000	8,481,228	0.000000		845	1.072		180.1	0.000000	
2011	0	0	0	0	0.0000	0.0000	0.000000	11,720,035	0.000000		858	1.072		245.0	0.000000	
2012	0	0	0	0	0.0021	0.0021	0.002039	10,273,004	0.002039		888	1.072		207.5	0.000983	
2013	0	0	0	0	0.0055	0.0055	0.005341	8,342,651	0.005341		917	1.072		163.2	0.003272	
2014	0	0	0	0	0.0119	0.0119	0.011555	9,060,883	0.011555		932	1.072		174.4	0.006626	
2015	0	0	0	0	0.0220	0.0220	0.021362	10,469,089	0.021362		951	1.072		197.5	0.010816	
2016	0	0	0	0	0.0287	0.0287	0.027868	8,994,602	0.027868		978	1.072		165.0	0.016890	
2017	0	0	0	0	0.0431	0.0431	0.041850	8,819,700	0.041850		995	1.072		159.0	0.026321	
2018	0	0	0	0	0.0764	0.0764	0.074184	11,591,488	0.074184		1,025	1.072		202.9	0.036562	
TOTAL	0	0	0	0	0.1897	0.1897	0.184199	95,757,324	0.184199					1,866.4	0.101470	
Average: State Frequency																0.010147
Federal Excess Frequency (times 40.0%)																0.004059

BITUMINOUS CO-GEN (1024)

IBNR Factor adjusted by 0.4000										0.971	EXPECTED	Statewide	Adjustment	Estimated	Frequency	
YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR +	AWARD	Payroll	AWARDED	ULTIMATE	Average	Factor	Miner	Years	Claims per 100	Weighted
						PENDING	RATIO				Weekly Wage				Miner Years	Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	7,866,413	0.000000		836	1.072		168.8	0.000000	
2010	0	0	0	0	0.0000	0.0000	0.000000	8,732,701	0.000000		845	1.072		185.4	0.000000	
2011	0	0	0	0	0.0000	0.0000	0.000000	9,102,411	0.000000		858	1.072		190.3	0.000000	
2012	0	0	0	0	0.0018	0.0018	0.001748	9,047,745	0.001748		888	1.072		182.8	0.000956	
2013	0	0	0	0	0.0068	0.0068	0.006603	10,355,884	0.006603		917	1.072		202.6	0.003259	
2014	0	0	0	0	0.0154	0.0154	0.014953	11,721,184	0.014953		932	1.072		225.6	0.006628	
2015	0	0	0	0	0.0247	0.0247	0.023984	11,748,205	0.023984		951	1.072		221.6	0.010823	
2016	0	0	0	0	0.0361	0.0361	0.035053	11,327,552	0.035053		978	1.072		207.8	0.016869	
2017	0	0	0	0	0.0558	0.0558	0.054182	11,435,057	0.054182		995	1.072		206.2	0.026276	
2018	0	0	0	0	0.0791	0.0791	0.076806	11,996,610	0.076806		1,025	1.072		210.0	0.036574	
TOTAL	0	0	0	0	0.2197	0.2197	0.213329	103,333,762	0.213329					2,001.1	0.101385	
Average: State Frequency																0.010139
Federal Excess Frequency (times 40.0%)																0.004056

Source: Claim counts - CMCRB OD Database as of 08/06/2019

IBNR: Exhibit VII-C-6, p.4

Payroll: Exhibit X-A

The Award Ratios for all classes were set equal to the Grand Total Award Ratio calculated on Exhibit VII-B-2 Page 3.

The Grand Total Award Ratio is equal to Awarded ÷ (Awarded plus Denied) = 34 / [34 + 01] = 0.971

The Wage Adjustment Factor was derived from CMCRB data. See Exhibit X-G

Estimated Miner Years = Payroll / (SAWW x Adj. Factor x 52)

Frequency per 100 Miner Years = (Expected Ult. Awarded / Est. Miner Years) x 100

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Run Date: September 18, 2019 - 09:15:49 AM

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Effective Date - April 01, 2020

507,339,550.613766

STATE OCCUPATIONAL DISEASE FREQUENCY
WITH FEDERAL EXCESS FREQUENCY

ANTHRACITE PREP PLANT (1026)

IBNR Factor adjusted by 1.0000

YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR + PENDING	0.971 AWARD RATIO	Payroll	EXPECTED ULTIMATE AWARDED	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	6,749,748	0.000000	836	1.072	144.8	0.000000	
2010	1	1	0	0	0.0000	0.0000	0.000000	5,762,086	1.000000	845	1.072	122.3	0.817661	
2011	0	0	0	0	0.0000	0.0000	0.000000	7,236,583	0.000000	858	1.072	151.3	0.000000	
2012	0	0	0	0	0.0043	0.0043	0.004175	8,671,140	0.004175	888	1.072	175.2	0.002383	
2013	0	0	0	0	0.0136	0.0136	0.013206	8,265,665	0.013206	917	1.072	161.7	0.008167	
2014	1	1	0	0	0.0271	0.0271	0.026314	8,234,771	1.026314	932	1.072	158.5	0.647517	
2015	1	1	0	0	0.0400	0.0400	0.038840	7,606,274	1.038840	951	1.072	143.5	0.723930	
2016	0	0	0	0	0.0559	0.0559	0.054279	7,018,927	0.054279	978	1.072	128.7	0.042175	
2017	1	1	0	0	0.0946	0.0946	0.091857	7,746,154	1.091857	995	1.072	139.7	0.781572	
2018	0	0	0	0	0.1589	0.1589	0.154292	9,643,085	0.154292	1,025	1.072	168.8	0.091405	
TOTAL	4	4	0	0	0.3944	0.3944	0.382962	76,934,433	4.382962			1,494.5	3.114810	
Average: State Frequency														0.311481
Federal Excess Frequency (times 40.0%)														0.124592

BITUMINOUS PREP PLANT (1028)

IBNR Factor adjusted by 0.4000

YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR + PENDING	0.971 AWARD RATIO	Payroll	EXPECTED ULTIMATE AWARDED	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	19,828,012	0.000000	836	1.549	294.5	0.000000	
2010	0	0	0	0	0.0000	0.0000	0.000000	26,313,130	0.000000	845	1.549	386.6	0.000000	
2011	0	0	0	0	0.0000	0.0000	0.000000	35,155,068	0.000000	858	1.549	508.7	0.000000	
2012	0	0	0	0	0.0068	0.0068	0.006603	34,211,729	0.006603	888	1.549	478.3	0.001380	
2013	0	0	0	0	0.0226	0.0226	0.021945	34,253,697	0.021945	917	1.549	463.7	0.004732	
2014	0	0	0	0	0.0573	0.0573	0.055638	43,520,040	0.055638	932	1.549	579.7	0.009598	
2015	0	0	0	0	0.0706	0.0706	0.068553	33,564,176	0.068553	951	1.549	438.2	0.015644	
2016	1	0	1	0	0.0755	1.0755	1.044311	23,689,882	1.044311	978	1.549	300.7	0.347293	
2017	0	0	0	0	0.1407	0.1407	0.136620	28,816,678	0.136620	995	1.549	359.6	0.037992	
2018	0	0	0	0	0.2113	0.2113	0.205172	32,053,553	0.205172	1,025	1.549	388.2	0.052852	
TOTAL	1	0	1	0	0.5848	1.5848	1.538841	311,405,965	1.538841			4,198.2	0.469491	
Average: State Frequency														0.046949
Federal Excess Frequency (times 40.0%)														0.018780

TOTAL OTHER CLASSES

YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR + PENDING	0.971 AWARD RATIO	Payroll	EXPECTED ULTIMATE AWARDED	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	48,548,532	0.000000	836		910.8	0.000000	
2010	1	1	0	0	0.0000	0.0000	0.000000	55,531,499	1.000000	845		1,006.9	0.099315	
2011	0	0	0	0	0.0000	0.0000	0.000000	67,989,438	0.000000	858		1,195.2	0.000000	
2012	0	0	0	0	0.0163	0.0163	0.015827	68,749,931	0.015827	888		1,176.0	0.001346	
2013	0	0	0	0	0.0524	0.0524	0.050880	67,035,206	0.050880	917		1,105.0	0.004605	
2014	1	1	0	0	0.1187	0.1187	0.115258	77,808,252	1.115258	932		1,239.6	0.089969	
2015	1	1	0	0	0.1676	0.1676	0.162740	68,310,739	1.162740	951		1,093.7	0.106312	
2016	1	0	1	0	0.2115	1.2115	1.176367	55,838,525	1.176367	978		890.4	0.132117	
2017	1	1	0	0	0.3587	0.3587	0.348298	61,832,711	1.348298	995		954.9	0.141198	
2018	0	0	0	0	0.5588	0.5588	0.542595	70,301,657	0.542595	1,025		1,057.7	0.051299	
TOTAL	5	4	1	0	1.4840	2.4840	2.411964	641,946,490	6.411964			10,630.2	0.626161	
Average: State Frequency														0.062616
Federal Excess Frequency (times 40.0%)														0.025046

GRAND TOTAL

YEAR	REPORTED	AWARDED	PENDING	DENIED	IBNR	IBNR + PENDING	0.971 AWARD RATIO	Payroll	EXPECTED ULTIMATE AWARDED	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0000	0.0000	0.000000	229,462,394	0.000000	836		4,123.3	0.000000	
2010	1	1	0	0	0.0000	0.0000	0.000000	269,231,509	1.000000	845		4,723.9	0.021169	
2011	5	5	0	0	0.0000	0.0000	0.000000	324,841,755	5.000000	858		5,609.4	0.089136	
2012	6	5	1	0	0.1392	1.1392	1.106163	326,146,817	6.106163	888		5,420.2	0.112656	
2013	8	5	2	1	0.4103	2.4103	2.340401	300,963,743	7.340401	917		4,779.3	0.153587	
2014	8	8	0	0	1.4803	1.4803	1.437352	423,814,574	9.437352	932		6,291.9	0.149992	
2015	6	5	1	0	2.0293	3.0293	2.941470	350,172,362	7.941470	951		5,153.2	0.154108	
2016	5	4	1	0	2.1708	3.1708	3.078798	254,559,392	7.078798	978		3,696.4	0.191505	
2017	1	1	0	0	3.9197	3.9197	3.805980	289,193,784	4.805980	995		4,094.7	0.117371	
2018	1	0	1	0	6.8115	7.8115	7.584947	305,514,975	7.584947	1,025		4,199.1	0.180633	
TOTAL	41	34	6	1	16.9610	22.9610	22.295112	3,073,514,975	56.295112			48,091.4	1.170157	
Average: State Frequency														0.117016
Federal Excess Frequency (times 40.0%)														0.046806

Source: Claim counts - CMCRB OD Database as of 08/06/2019

IBNR: Exhibit VII-C-6, p.4

Payroll: Exhibit X-A

The Award Ratios for all classes were set equal to the Grand Total Award Ratio calculated on Exhibit VII-B-2 Page 3.

The Grand Total Award Ratio is equal to Awarded ÷ (Awarded plus Denied) = 34 / [34 + 01] = 0.971

The Wage Adjustment Factor is derived from CMCRB data. See Exhibit X-G

Estimated Miner Years = Payroll / (\$AWW x Adj. Factor x 52)

Frequency per 100 Miner Years = [Expected Ult. Awarded / Est. Miner Years] x 100

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Run Date: September 18, 2019 - 09:15:49 AM

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Effective Date - April 01, 2020

8,207,850,524.677730

Exhibit VII-C-3

Reported Claims

Year

Incremental Changes

Payroll	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(\$Millions)	29,476.12	30,103.39	30,210.45	20,888.99	16,192.17	17,783.14	17,376.29	18,441.14	16,807.81	13,940.80	12,251.26	12,166.21	12,359.73	12,140.91	11,946.38	14,555.58	16,954.31	14,645.46	14,295.29	12,034.60	26,295.91	22,449.82	20,466.08	24,218.78	20,873.61	21,167.07	19,677.53
Payroll	29,476.12	30,103.39	30,210.45	20,888.99	16,192.17	17,783.14	17,376.29	18,441.14	16,807.81	13,940.80	12,251.26	12,166.21	12,359.73	12,140.91	11,946.38	14,555.58	16,954.31	14,645.46	14,295.29	12,034.60	26,295.91	22,449.82	20,466.08	24,218.78	20,873.61	21,167.07	19,677.53

IBNR Claims

Source: Coal Mine Compensation Rating Bureau Database as of 4-30-2019
Payrolls: Exhibit X-A-2

PAB
Effective Date - April 01, 2020
112,205.714020

Exhibit VII-C-4

Reported Claims

Months	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
12	1	1	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
24	3	2	4	1	2	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
36	4	2	5	2	3	2	1	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0
48	4	2	5	3	3	3	1	2	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	2	0	0	0
60	4	2	5	3	3	3	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
72	4	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
84	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
96	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
108	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
120	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
132	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
144	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
156	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
168	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
180	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
192	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
204	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
216	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
228	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0
240	5	3	5	3	3	4	1	2	0	0	0	0	0	1	0	0	0	0	0	1	2	0	1	0	0	0	0

[illegible]

IBNR Claims																				
Cumulative Factor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00101	0.00289	0.00532	0.00809
Times Payroll	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04134	0.08418	0.17631	0.28531

PAB
Effective Date - April 01, 2020
113,018.865720

Exhibit VII-C-5

Reported Claims

Year

Months	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
12	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
24	1	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	1	
36	1	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1	0	0	1	0	0	0	0	0	1		
48	1	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1	0	0	1	0	0	0	1		1		
60	1	1	0	0	0	1	0	0	1	0	1	1	1	0	1	1	0	0	1	0	0	0					
72	1	1	0	0	0	1	0	1	1	0	1	1	1	0	1	1	0	0	1	0	0	0		1			
84	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	0	0						
96	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	0	0						
108	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	0	0						
120	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1	0						
132	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
144	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
156	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
168	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
180	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
192	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
204	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
216	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
228	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							
240	1	1	0	0	0	2	0	1	1	0	1	1	1	0	1	1	0	0	1	1							

12-24

[illegible][illegible][illegible]

File: K:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-07-C.xlsm]VII-C-5
Run Date: September 17, 2019 - 02:38:39 PM

Exhibit VII-C-6

[illegible][illegible]

IBNR Claims																				
Cumulative Factor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00050	0.00165	0.00329	0.00526	0.00797	0.01221	0.01648
times Payroll	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.16307	0.49659	1.39435	1.84191	2.02884	3.53106	5.02852

PAB
Effective Date - April 01, 2020
120,176.650700

**COAL MINE COMPENSATION RATING BUREAU
STATE OCCUPATIONAL DISEASE
ALL CLASSIFICATIONS**

Exhibit VII-C-7

IBNR By Class

		CLASSIFICATION					
A. IBNR Factor		<u>Coke</u>	<u>Auger</u>	<u>Co-Gen</u>	<u>Co-Gen</u>	<u>Anthracite</u>	<u>Bituminous</u>
	<u>Year</u>	<u>1017</u>	<u>1019</u>	<u>1022</u>	<u>1024</u>	<u>Prep Plant</u>	<u>Prep Plant</u>
						<u>1026</u>	<u>1028</u>
	2009	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2011	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2012	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
	2013	0.00165	0.00165	0.00165	0.00165	0.00165	0.00165
	2014	0.00329	0.00329	0.00329	0.00329	0.00329	0.00329
	2015	0.00526	0.00526	0.00526	0.00526	0.00526	0.00526
	2016	0.00797	0.00797	0.00797	0.00797	0.00797	0.00797
	2017	0.01221	0.01221	0.01221	0.01221	0.01221	0.01221
	2018	0.01648	0.01648	0.01648	0.01648	0.01648	0.01648
B. Adjustment Factor		0.40000	0.40000	0.40000	0.40000	1.00000	0.40000
C. Payroll Per \$1M							
	2009	5.17355	0.92616	8.00464	7.86641	6.74975	19.82801
	2010	5.43566	0.80670	8.48123	8.73270	5.76209	26.31313
	2011	3.59909	1.17626	11.72004	9.10241	7.23658	35.15507
	2012	5.73811	0.80821	10.27300	9.04775	8.67114	34.21173
	2013	4.79191	1.02540	8.34265	10.35588	8.26567	34.25370
	2014	4.46440	0.80698	9.06088	11.72118	8.23477	43.52004
	2015	4.34038	0.58262	10.46909	11.74821	7.60627	33.56418
	2016	4.43507	0.37250	8.99460	11.32755	7.01893	23.68988
	2017	4.56611	0.44901	8.81970	11.43506	7.74615	28.81668
	2018	4.45680	0.56013	11.59149	11.99661	9.64309	32.05355
D. IBNR							
	2009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2012	0.0011	0.0002	0.0021	0.0018	0.0043	0.0068
	2013	0.0032	0.0007	0.0055	0.0068	0.0136	0.0226
	2014	0.0059	0.0011	0.0119	0.0154	0.0271	0.0573
	2015	0.0091	0.0012	0.0220	0.0247	0.0400	0.0706
	2016	0.0141	0.0012	0.0287	0.0361	0.0559	0.0755
	2017	0.0223	0.0022	0.0431	0.0558	0.0946	0.1407
	2018	0.0294	0.0037	0.0764	0.0791	0.1589	0.2113

Source: IBNR Factor - Exhibit VII-C-6
Adjustment Factor - Judgement
Payrolls: Exhibit X-A-2
IBNR = A times B times C

**COAL MINE COMPENSATION RATING BUREAU
STATE OCCUPATIONAL DISEASE
ALL CLASSIFICATIONS**

Exhibit VII-C-8

IBNR By Class

		CLASSIFICATION					
A. IBNR Factor		<u>Coke</u>	<u>Auger</u>	<u>Anthracite</u> <u>Co-Gen</u>	<u>Bituminous</u> <u>Co-Gen</u>	<u>Anthracite</u> <u>Prep Plant</u>	<u>Bituminous</u> <u>Prep Plant</u>
	<u>Year</u>	<u>1017</u>	<u>1019</u>	<u>1022</u>	<u>1024</u>	<u>1026</u>	<u>1028</u>
	1999	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2004	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2005	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2006	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	2008	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
B. Adjustment Factor		0.40000	0.40000	0.40000	0.40000	1.00000	0.40000
C. Payroll Per \$1M							
	1999	12.29348	1.13689	3.60431	1.49428	1.23112	10.69178
	2000	12.09257	1.20588	4.47346	1.87072	1.31947	8.57476
	2001	10.37583	1.42913	5.23447	2.12133	3.60965	10.15503
	2002	10.48501	1.15084	6.35854	2.38612	3.78169	12.64983
	2003	11.53408	1.10222	7.13766	3.05252	3.72130	14.75232
	2004	12.04913	1.05880	7.35151	6.37448	4.40665	18.06729
	2005	12.86098	1.02654	7.85529	8.52475	5.17007	17.69036
	2006	12.73739	1.06683	8.40539	9.39758	4.88588	17.05097
	2007	13.66993	1.12116	9.16045	10.78921	5.75644	18.89519
	2008	9.76115	2.48856	7.95834	8.46856	6.39077	21.25026
D. IBNR							
	1999	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: IBNR Factor - Exhibit VII-C-6
Adjustment Factor - Judgement
Payrolls: Exhibit X-A-2
IBNR = A times B times C

State O.D. Severity- Before Act 57

Underground Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O.D. Severity- Before Act 57

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Commutated and Compromised- As Settled		Total Awarded- Permanent plus Commutated/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	899,611	-	-	-	-	-	-	-	-
-	-	-	1	144,876	-	-	-	-	-	-
-	-	-	1	213,043	-	-	-	-	-	-
-	-	-	1	457,424	-	-	-	-	-	-
-	-	-	1	89,601	-	-	-	-	-	-
-	-	-	1	187,942	-	-	-	-	-	-
-	-	-	1	357,414	-	-	-	-	-	-
-	-	-	1	150,546	-	-	-	-	-	-
1	926,598	-	-	-	-	-	-	-	-	-
1	1,173,206	-	-	-	-	-	-	-	-	-
1	1,647,885	-	-	-	-	-	-	-	-	-
-	-	1	507,048	-	-	-	-	-	-	-
-	-	1	137,135	-	-	-	-	-	-	-
1	1,246,067	-	-	-	-	-	-	-	-	-
-	-	1	194,736	-	-	-	-	-	-	-
-	-	1	44,440	-	-	-	-	-	-	-
1	1,573,348	-	-	-	-	-	-	-	-	-
-	-	1	95,836	-	-	-	-	-	-	-
-	-	1	173,818	-	-	-	-	-	-	-
-	-	1	44,241	-	-	-	-	-	-	-
-	-	1	169,598	-	-	-	-	-	-	-
-	-	1	662,859	-	-	-	-	-	-	-
-	-	1	253,015	-	-	-	-	-	-	-
-	-	1	136,241	-	-	-	-	-	-	-
-	-	1	197,718	-	-	-	-	-	-	-
-	-	1	120,166	-	-	-	-	-	-	-
-	-	1	129,184	-	-	-	-	-	-	-
-	-	1	130,702	-	-	-	-	-	-	-
-	-	1	126,630	-	-	-	-	-	-	-
-	-	1	135,618	-	-	-	-	-	-	-
-	-	1	133,436	-	-	-	-	-	-	-
-	-	1	159,811	-	-	-	-	-	-	-
-	-	1	133,807	-	-	-	-	-	-	-
-	-	1	265,569	-	-	-	-	-	-	-
-	-	1	152,054	-	-	-	-	-	-	-
-	-	1	226,624	-	-	-	-	-	-	-
-	-	1	573,805	-	-	-	-	-	-	-
-	-	1	266,159	-	-	-	-	-	-	-
-	-	1	128,001	-	-	-	-	-	-	-
-	-	1	140,773	-	-	-	-	-	-	-
-	-	1	111,154	-	-	-	-	-	-	-
-	-	1	103,854	-	-	-	-	-	-	-
-	-	1	250,449	-	-	-	-	-	-	-
-	-	1	41,733	-	-	-	-	-	-	-
-	-	1	89,372	-	-	-	-	-	-	-
-	-	1	162,854	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	1,176,636	-	-
-	-	1	310,157	-	-	-	-	-	-	-
-	-	1	187,908	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	772,149	-	-
-	-	1	246,003	-	-	-	-	-	-	-
1	1,140,063	-	-	-	-	-	-	-	-	-
-	-	1	132,740	-	-	-	-	-	-	-
-	-	1	85,437	-	-	-	-	-	-	-
-	-	1	89,677	-	-	-	-	-	-	-
-	-	1	36,290	-	-	-	-	-	-	-
-	-	1	86,760	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	1,109,831	-	-
-	-	-	-	-	-	-	1	1,232,214	-	-
-	-	-	-	-	-	-	1	1,243,575	-	-
-	-	1	228,049	-	-	-	-	-	-	-
(i) Total	# 7	\$8,606,778	# 49	\$9,202,304	# 56	\$17,809,082	# 5	\$5,534,407	# 61	\$23,343,489
(ii) Average		\$1,229,540		\$187,802		\$318,019		\$1,106,881		\$382,680
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$1,229,540		\$187,802						
(ii) Difference (Col. 2 minus Col. 1)						(\$1,041,738)				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Total	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$1,106,881		\$1,106,881						
(ii) C/C Difference		\$0		(\$1,041,738)						
(iii) (e-i) + (e-ii)		\$1,106,881		\$65,144						
(iv) Total		\$691,801		\$285,004						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$976,805		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$8,606,778	\$1,229,540	# 0.6250	\$691,801	\$1,106,881	# 7.6250	\$9,298,579	\$1,219,486	
(ii) Comm./Comp.	# 49	\$9,202,304	\$187,802	# 4.3750	\$285,004	\$65,144	# 53.3750	\$9,487,307	\$177,748	
(iii) Total	# 56	\$17,809,082	\$318,019	# 5.0000	\$976,805	\$195,361	# 61.0000	\$18,785,886	\$307,965	
(iv) Average Severity before Adjustment									\$382,680	
(v) Impact									(\$74,715)	

Source: Exhibit IX-A

State O.D. Severity- Before Act 57

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O.D. Severity- Before Act 57

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O.D. Severity- Before Act 57

Other Classes

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Social Security Offset

Underground Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Social Security Offset

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Committed and Compromised- As Settled		Total Awarded- Permanent plus Committed/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	-	-	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	61,274			-	-		
	1	-	-	-			-	-		
	1	-	-	-			-	-		
	1	330,748	-	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	1	-	-	-			-	-		
	-	-	1	27,442			-	-		
	-	-	1	-			-	-		
	1	308,743	-	-			-	-		
	-	-	1	-			-	-		
	-	-	1	90			-	-		
	-	-	1	47,247			-	-		
	-	-	1	82,208			-	-		
	-	-	1	-			-	-		
	-	-	1	57,191			-	-		
	-	-	1	-			-	-		
	-	-	1	33,189			-	-		
	-	-	1	24,979			-	-		
	-	-	1	-			-	-		
	-	-	1	2,378			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	30,619			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	47,245			-	-		
	-	-	1	-			-	-		
	-	-	1	50,763			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			1	-		
	-	-	1	40,090			-	-		
	-	-	1	-			1	-		
	-	-	1	31,148			-	-		
	1	-	-	-			-	-		
	-	-	1	2,360			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			-	-		
	-	-	1	-			1	369,698		
	-	-	1	-			1	-		
	-	-	1	-			1	287,623		
	-	-	1	80,206			-	-		
(i) Total	# 7	\$639,491	# 49	\$618,429	# 56	\$1,257,920	# 5	\$657,322	# 61	\$1,915,242
(ii) Average		\$91,356		\$12,621		\$22,463		\$131,464		\$31,397
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$91,356		\$12,621						
(ii) Difference (Col. 2 minus Col. 1)						(\$78,735)				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Number	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$131,464		\$131,464						
(ii) C/C Difference		\$0		(\$78,735)						
(iii) (e-i) + (e-ii)		\$131,464		\$52,730						
(iv) Total		\$82,165		\$230,692						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$312,857		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$639,491	\$91,356	# 0.6250	\$82,165	\$131,464	# 7.6250	\$721,656	\$94,643	
(ii) Comm/Comp.	# 49	\$618,429	\$12,621	# 4.3750	\$230,692	\$52,730	# 53.3750	\$849,121	\$15,909	
(iii) Total	# 56	\$1,257,920	\$22,463	# 5.0000	\$312,857	\$62,571	# 61.0000	\$1,570,777	\$25,750	
(iv) Average Severity before Adjustment										\$31,397
(v) Impact										(\$5,647)

Source: Exhibit IX-A

State O. D. Severity- Social Security Offset

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

State O. D. Severity- Social Security Offset

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Social Security Offset

Other Classes

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Private Pension Offset

Underground Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

State O. D. Severity- Private Pension Offset

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Commutated and Compromised- As Settled		Total Awarded- Permanent plus Commutated/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	377,961	-	-	-	-	-	-	-	-
-	-	-	1	100,559	-	-	-	-	-	-
-	-	-	1	149,297	-	-	-	-	-	-
-	-	-	1	132,286	-	-	-	-	-	-
-	-	-	1	50,833	-	-	-	-	-	-
-	-	-	1	49,072	-	-	-	-	-	-
-	-	-	1	23,592	-	-	-	-	-	-
-	-	-	1	99,200	-	-	-	-	-	-
1	244,225	-	-	-	-	-	-	-	-	-
1	373,052	-	-	-	-	-	-	-	-	-
1	334,259	-	-	-	-	-	-	-	-	-
-	-	1	154,888	-	-	-	-	-	-	-
-	-	1	28,472	-	-	-	-	-	-	-
1	306,317	-	-	-	-	-	-	-	-	-
-	-	1	117	-	-	-	-	-	-	-
-	-	1	14,655	-	-	-	-	-	-	-
1	266,030	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	83,888	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	131	-	-	-	-	-	-	-
-	-	1	99,523	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	61	-	-	-	-	-	-	-
-	-	1	72,822	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	57,321	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	74,743	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	140,687	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	136,993	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	159,298	-	-	-	-	-	-	-
-	-	1	60,446	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	68,331	-	-	-	-	-	-	-
-	-	1	53,239	-	-	-	-	-	-	-
-	-	1	5,847	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	44,273	-	-	-	-	-	-	-
-	-	1	88,721	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	310,038	-	-
-	-	1	114,075	-	-	-	-	-	-	-
-	-	1	-	-	-	-	1	236,921	-	-
-	-	1	5,995	-	-	-	-	-	-	-
1	249,116	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-
-	-	1	3,657	-	-	-	-	-	-	-
-	-	1	47,573	-	-	-	-	-	-	-
-	-	-	-	-	-	-	1	357,650	-	-
-	-	-	-	-	-	-	1	573,441	-	-
-	-	-	-	-	-	-	1	240,772	-	-
-	-	1	5,371	-	-	-	-	-	-	-
(i) Total	# 7	\$2,150,960	# 49	\$2,125,967	# 56	\$4,276,928	# 5	\$1,718,823	# 61	\$5,995,751
(ii) Average		\$307,280		\$43,387		\$76,374		\$343,765		\$98,291
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$307,280		\$43,387						
(ii) Difference (Col. 2 minus Col. 1)						(\$263,893)				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Number	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$343,765		\$343,765						
(ii) C/C Difference		\$0		(\$263,893)						
(iii) (e-i) + (e-ii)		\$343,765		\$79,872						
(iv) Total		\$214,853		\$349,439						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$564,291		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$2,150,960	\$307,280	# 0.6250	\$214,853	\$343,765	# 7.6250	\$2,365,813	\$310,271	
(ii) Comm/Comp.	# 49	\$2,125,967	\$43,387	# 4.3750	\$349,439	\$79,872	# 53.3750	\$2,475,406	\$46,378	
(iii) Total	# 56	\$4,276,928	\$76,374	# 5.0000	\$564,291	\$112,858	# 61.0000	\$4,841,219	\$79,364	
(iv) Average Severity before Adjustment										\$98,291
(v) Impact										(\$18,927)

Source: Exhibit IX-A

State O. D. Severity- Private Pension Offset

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Private Pension Offset

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

State O. D. Severity- Private Pension Offset

Other Classes

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

Federal Excess Before Offsets

Underground Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Federal Excess Before Offsets

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Commuted and Compromised- As Settled		Total Awarded- Permanent plus Commuted/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	-	-	-	-	-	-	-	-	-
-	-	-	1	206,932	-	-	-	-	-	-
-	-	-	1	209,135	-	-	-	-	-	-
-	-	-	1	258,795	-	-	-	-	-	-
-	-	-	1	223,221	-	-	-	-	-	-
-	-	-	1	223,352	-	-	-	-	-	-
-	-	-	1	270,516	-	-	-	-	-	-
-	-	-	1	203,220	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	235,701	-	-	-	-	-	-
-	-	-	1	100,817	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	280,192	-	-	-	-	-	-
-	-	-	1	238,657	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	443,126	-	-	-	-	-	-
-	-	-	1	264,194	-	-	-	-	-	-
-	-	-	1	471,387	-	-	-	-	-	-
-	-	-	1	279,249	-	-	-	-	-	-
-	-	-	1	266,584	-	-	-	-	-	-
-	-	-	1	531,122	-	-	-	-	-	-
-	-	-	1	415,913	-	-	-	-	-	-
-	-	-	1	258,036	-	-	-	-	-	-
-	-	-	1	182,169	-	-	-	-	-	-
-	-	-	1	281,047	-	-	-	-	-	-
-	-	-	1	306,118	-	-	-	-	-	-
-	-	-	1	240,573	-	-	-	-	-	-
-	-	-	1	690,759	-	-	-	-	-	-
-	-	-	1	359,110	-	-	-	-	-	-
-	-	-	1	101,082	-	-	-	-	-	-
-	-	-	1	536,780	-	-	-	-	-	-
-	-	-	1	208,120	-	-	-	-	-	-
-	-	-	1	360,869	-	-	-	-	-	-
-	-	-	1	260,591	-	-	-	-	-	-
-	-	-	1	475,920	-	-	-	-	-	-
-	-	-	1	170,372	-	-	-	-	-	-
-	-	-	1	249,797	-	-	-	-	-	-
-	-	-	1	116,982	-	-	-	-	-	-
-	-	-	1	215,893	-	-	-	-	-	-
-	-	-	1	263,047	-	-	-	-	-	-
-	-	-	1	290,693	-	-	-	-	-	-
-	-	-	1	133,496	-	-	-	-	-	-
-	-	-	1	106,460	-	-	-	-	-	-
-	-	-	1	93,335	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	243,712	-	-	-	-	-	-
-	-	-	1	131,144	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	288,321	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	359,726	-	-	-	-	-	-
-	-	-	1	45,103	-	-	-	-	-	-
-	-	-	1	101,093	-	-	-	-	-	-
-	-	-	1	329,346	-	-	-	-	-	-
-	-	-	1	270,540	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	268,583	-	-	-	-	-	-
(i) Total	# 7	\$0	# 49	\$13,060,928	# 56	\$13,060,928	# 5	\$0	# 61	\$13,060,928
(ii) Average		\$0		\$266,550		\$233,231		\$0		\$214,114
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$0		\$266,550						
(ii) Difference (Col. 2 minus Col. 1)						\$266,550				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Number	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$0		\$0						
(ii) C/C Difference		\$0		\$266,550						
(iii) (e-i) + (e-ii)		\$0		\$266,550						
(iv) Total		\$0		\$1,166,154						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$1,166,154		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$0	\$0	# 0.6250	\$0	\$0	# 7.6250	\$0	\$0	
(ii) Comm/Comp.	# 49	\$13,060,928	\$266,550	# 4.3750	\$1,166,154	\$266,550	# 53.3750	\$14,227,082	\$266,550	
(iii) Total	# 56	\$13,060,928	\$233,231	# 5.0000	\$1,166,154	\$233,231	# 61.0000	\$14,227,082	\$233,231	
(iv) Average Severity before Adjustment										\$214,114
(v) Impact										\$19,117

Source: Exhibit IX-A

Federal Excess Before Offsets

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Federal Excess Before Offsets

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

Federal Excess Before Offsets

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Federal Excess After Social Security Offset

Underground Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

Federal Excess After Social Security Offset

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Committed and Compromised- As Settled		Total Awarded- Permanent plus Committed/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	-	-	-	-	-	-	-	-	-
-	-	-	1	206,932	-	-	-	-	-	-
-	-	-	1	209,135	-	-	-	-	-	-
-	-	-	1	258,795	-	-	-	-	-	-
-	-	-	1	223,221	-	-	-	-	-	-
-	-	-	1	223,352	-	-	-	-	-	-
-	-	-	1	286,384	-	-	-	-	-	-
-	-	-	1	203,220	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
1	2,985	-	-	-	-	-	-	-	-	-
-	-	-	1	235,701	-	-	-	-	-	-
-	-	-	1	100,817	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	304,405	-	-	-	-	-	-
-	-	-	1	238,657	-	-	-	-	-	-
1	2,907	-	-	-	-	-	-	-	-	-
-	-	-	1	443,126	-	-	-	-	-	-
-	-	-	1	264,194	-	-	-	-	-	-
-	-	-	1	471,478	-	-	-	-	-	-
-	-	-	1	325,510	-	-	-	-	-	-
-	-	-	1	266,584	-	-	-	-	-	-
-	-	-	1	531,122	-	-	-	-	-	-
-	-	-	1	415,913	-	-	-	-	-	-
-	-	-	1	305,635	-	-	-	-	-	-
-	-	-	1	182,169	-	-	-	-	-	-
-	-	-	1	314,183	-	-	-	-	-	-
-	-	-	1	331,075	-	-	-	-	-	-
-	-	-	1	240,573	-	-	-	-	-	-
-	-	-	1	690,759	-	-	-	-	-	-
-	-	-	1	361,488	-	-	-	-	-	-
-	-	-	1	101,082	-	-	-	-	-	-
-	-	-	1	536,780	-	-	-	-	-	-
-	-	-	1	208,120	-	-	-	-	-	-
-	-	-	1	391,258	-	-	-	-	-	-
-	-	-	1	260,591	-	-	-	-	-	-
-	-	-	1	475,920	-	-	-	-	-	-
-	-	-	1	170,372	-	-	-	-	-	-
-	-	-	1	249,797	-	-	-	-	-	-
-	-	-	1	157,166	-	-	-	-	-	-
-	-	-	1	215,893	-	-	-	-	-	-
-	-	-	1	263,047	-	-	-	-	-	-
-	-	-	1	321,552	-	-	-	-	-	-
-	-	-	1	133,496	-	-	-	-	-	-
-	-	-	1	106,460	-	-	-	-	-	-
-	-	-	1	93,335	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	243,712	-	-	-	-	-	-
-	-	-	1	156,229	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	307,520	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-
-	-	-	1	362,086	-	-	-	-	-	-
-	-	-	1	45,103	-	-	-	-	-	-
-	-	-	1	101,093	-	-	-	-	-	-
-	-	-	1	329,346	-	-	-	-	-	-
-	-	-	1	270,540	-	-	-	-	-	-
-	-	-	-	-	-	-	1	3,157	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	-	-	-	-	1	4,272	-	-
-	-	-	1	322,345	-	-	-	-	-	-
(i) Total	# 7	\$5,892	# 49	\$13,457,269	# 56	\$13,463,162	# 5	\$7,428	# 61	\$13,470,590
(ii) Average		\$842		\$274,638		\$240,414		\$1,486		\$220,829
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$842		\$274,638						
(ii) Difference (Col. 2 minus Col. 1)						\$273,796				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Number	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$1,486		\$1,486						
(ii) C/C Difference		\$0		\$273,796						
(iii) (e-i) + (e-ii)		\$1,486		\$275,282						
(iv) Total		\$929		\$1,204,359						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$1,205,287		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$5,892	\$842	# 0.6250	\$929	\$1,486	# 7.6250	\$6,821	\$895	
(ii) Comm/Comp.	# 49	\$13,457,269	\$274,638	# 4.3750	\$1,204,359	\$275,282	# 53.3750	\$14,661,628	\$274,691	
(iii) Total	# 56	\$13,463,162	\$240,414	# 5.0000	\$1,205,287	\$241,057	# 61.0000	\$14,668,449	\$240,466	
(iv) Average Severity before Adjustment										\$220,829
(v) Impact										\$19,637

Source: Exhibit IX-A

Federal Excess After Social Security Offset

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A

Federal Excess After Social Security Offset

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Federal Excess After Social Security Offset

Other Classes

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Exhibit VII-E-f

Federal Excess After Social Security and Private Pension Offsets

Underground Anthracite

Awarded- Permanent Basis		Commuted and Compromised- As Settled		Total Awarded- Permanent plus Commuted/Comp.		Pending, on Permanent Basis		Total Claims	
(1)		(2)		(3) = (1) + (2)		(4)		(5)	
Count	Amount	Count	Amount	Count	Amount	Count	Amount	Count	Amount

f. Calculation of Impact of Adjustment

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Effective Date - April 01, 2020
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Federal Excess After Social Security and Private Pension Offsets

Underground Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

	Awarded- Permanent Basis		Commuted and Compromised- As Settled		Total Awarded- Permanent plus Commuted/Comp.		Pending, on Permanent Basis		Total Claims	
	(1) Count	Amount	(2) Count	Amount	(3) = (1) + (2) Count	Amount	(4) Count	Amount	(5) Count	Amount
a. Numbers and Amounts										
(i) List	1	-	-	-	-	-	-	-	-	-
-	-	-	1	306,256	-	-	-	-	-	-
-	-	-	1	311,645	-	-	-	-	-	-
-	-	-	1	258,795	-	-	-	-	-	-
-	-	-	1	274,055	-	-	-	-	-	-
-	-	-	1	237,099	-	-	-	-	-	-
-	-	-	1	305,643	-	-	-	-	-	-
-	-	-	1	301,554	-	-	-	-	-	-
1	3	-	-	-	-	-	-	-	-	-
1	44	-	-	-	-	-	-	-	-	-
1	141,494	-	-	-	-	-	-	-	-	-
-	-	-	1	235,701	-	-	-	-	-	-
-	-	-	1	110,099	-	-	-	-	-	-
1	0	-	-	-	-	-	-	-	-	-
-	-	-	1	304,521	-	-	-	-	-	-
-	-	-	1	253,311	-	-	-	-	-	-
1	95,577	-	-	-	-	-	-	-	-	-
-	-	-	1	443,126	-	-	-	-	-	-
-	-	-	1	342,979	-	-	-	-	-	-
-	-	-	1	471,478	-	-	-	-	-	-
-	-	-	1	325,641	-	-	-	-	-	-
-	-	-	1	268,158	-	-	-	-	-	-
-	-	-	1	531,122	-	-	-	-	-	-
-	-	-	1	415,913	-	-	-	-	-	-
-	-	-	1	305,696	-	-	-	-	-	-
-	-	-	1	254,990	-	-	-	-	-	-
-	-	-	1	314,183	-	-	-	-	-	-
-	-	-	1	331,075	-	-	-	-	-	-
-	-	-	1	297,748	-	-	-	-	-	-
-	-	-	1	690,759	-	-	-	-	-	-
-	-	-	1	361,488	-	-	-	-	-	-
-	-	-	1	156,283	-	-	-	-	-	-
-	-	-	1	536,780	-	-	-	-	-	-
-	-	-	1	277,344	-	-	-	-	-	-
-	-	-	1	391,258	-	-	-	-	-	-
-	-	-	1	349,239	-	-	-	-	-	-
-	-	-	1	475,920	-	-	-	-	-	-
-	-	-	1	247,196	-	-	-	-	-	-
-	-	-	1	309,981	-	-	-	-	-	-
-	-	-	1	157,166	-	-	-	-	-	-
-	-	-	1	284,224	-	-	-	-	-	-
-	-	-	1	316,286	-	-	-	-	-	-
-	-	-	1	327,333	-	-	-	-	-	-
-	-	-	1	133,496	-	-	-	-	-	-
-	-	-	1	150,733	-	-	-	-	-	-
-	-	-	1	155,719	-	-	-	-	-	-
-	-	-	-	-	-	-	1	0	-	-
-	-	-	1	261,370	-	-	-	-	-	-
-	-	-	1	156,229	-	-	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-
-	-	-	1	313,405	-	-	-	-	-	-
1	0	-	-	-	-	-	-	-	-	-
-	-	-	1	362,086	-	-	-	-	-	-
-	-	-	1	45,103	-	-	-	-	-	-
-	-	-	1	101,093	-	-	-	-	-	-
-	-	-	1	333,003	-	-	-	-	-	-
-	-	-	1	318,113	-	-	-	-	-	-
-	-	-	-	-	-	-	1	152,684	-	-
-	-	-	-	-	-	-	1	2,484	-	-
-	-	-	-	-	-	-	1	101,491	-	-
-	-	-	1	327,678	-	-	-	-	-	-
(i) Total	# 7	\$237,119	# 49	\$14,740,075	# 56	\$14,977,194	# 5	\$256,659	# 61	\$15,233,853
(ii) Average		\$33,874		\$300,818		\$267,450		\$51,332		\$249,735
b. Percentage of Awarded and Commuted/Compromised within Total Awarded										
(i) Number	# 7		# 49		# 56					
(ii) Percentage	12.5000%		87.5000%		100%					
c. Difference Between Average Awarded Permanent Claim and Average Commuted/Compromised Claim										
(i) Average		\$33,874		\$300,818						
(ii) Difference (Col. 2 minus Col. 1)						\$266,944				
d. Pending claims Split into Awarded and Commuted/Comp using Awarded Mix										
(i) Awarded Mix	12.5000%		87.5000%							
(ii) Number	# 0.6250		# 4.3750				# 5			
e. Pending Average from Above: Commuted and Compromised less Awarded Difference										
(i) Pending Ave.		\$51,332		\$51,332						
(ii) C/C Difference		\$0		\$266,944						
(iii) (e-i) + (e-ii)		\$51,332		\$318,276						
(iv) Total		\$32,082		\$1,392,456						
(d-ii) x (e-iii)										
(v) Total of (e-iv)								\$1,424,538		
f. Calculation of Impact of Adjustment										
	Awarded			Pending			Total			
	Count	Amount	Average	Count	Amount	Average	Count	Amount	Average	
(i) Permanent	# 7	\$237,119	\$33,874	# 0.6250	\$32,082	\$51,332	# 7.6250	\$269,201	\$35,305	
(ii) Comm/Comp.	# 49	\$14,740,075	\$300,818	# 4.3750	\$1,392,456	\$318,276	# 53.3750	\$16,132,531	\$302,249	
(iii) Total	# 56	\$14,977,194	\$267,450	# 5.0000	\$1,424,538	\$284,908	# 61.0000	\$16,401,732	\$268,881	
(iv) Average Severity before Adjustment										\$249,735
(v) Impact										\$19,146

Source: Exhibit IX-A

Federal Excess After Social Security and Private Pension Offsets

Surface Anthracite

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

Exhibit VII-E-f

Surface Bituminous

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

Source: Exhibit IX-A

Federal Excess After Social Security and Private Pension Offsets

Other Classes

Adjustment to Severity for Possible Commutation/Compromise of Pending Claims

[illegible]

Source: Exhibit IX-A.

COAL MINE COMPENSATION RATING BUREAU
Wage Level Adjustment to Current Level
 State Occupational Disease Model

Exhibit VII-G
 Page 1

a) Average Weekly Wage (\$smoothed):

	Year	U/G Anthracite	U/G Bituminous	Surface Anthracite	Surface Bituminous	Wage Level Decrease
Pre Act 57:	1990	\$515.82	682.13	483.48	517.18	5.1817%
	1991	532.25	706.01	497.65	534.10	5.1817%
	1992	549.20	730.72	512.24	551.57	5.1817%
	1993	566.69	756.30	527.26	569.62	5.1817%
	1994	584.74	782.77	542.72	588.26	5.1817%
	1995	603.37	810.18	558.63	607.51	5.1817%
Mixed Pre & Post Act 57:	1996	622.58	838.54	575.01	627.38	3.3220% ***
Post Act 57:	1997	642.41 *	867.89 *	591.87 *	647.91	0.0%
	1998	662.87 *	898.27 *	609.22 *	669.11	0.0%
	1999	683.98 *	929.72 *	627.08 *	691.00	0.0%
	2000	705.77 *	962.26 *	645.46 *	713.61	0.0%
	2001	728.25 *	995.95 *	664.39 *	736.96	0.0%
	2002	751.44 *	1,030.81 *	683.86 *	761.08	0.0%
	2003	775.37 *	1,066.90 *	703.91 *	785.98	0.0%
	2004	800.07 *	1,104.25 *	724.55 *	811.69	0.0%
	2005	825.55 *	1,142.90 *	745.79 *	838.25	0.0%
	2006	851.84 *	1,182.91 *	767.66 *	865.68	0.0%
	2007	878.97 *	1,224.32 *	790.16 *	894.00	0.0%
	2008	906.96 *	1,267.18 *	813.33 *	923.26	0.0%
	2009	935.85 *	1,311.54 *	837.18 *	953.47	0.0%
	2010	965.66 *	1,357.45 *	861.72 *	984.66	0.0%
	2011	996.41 *	1,404.97 *	886.98 *	1,016.88	0.0%
	2012	1,028.15 *	1,454.15 *	912.99 *	1,050.15	0.0%
	2013	1,060.89 *	1,505.06 *	939.75 *	1,084.51	0.0%
	2014	1,094.68 *	1,557.74 *	967.30 *	1,120.00	0.0%
	2015	1,129.54 *	1,612.27 *	995.66 *	1,156.64	0.0%
	2016	1,165.52 *	1,668.71 *	1,024.85 *	1,194.49	0.0%
	2017	1,202.64 *	1,727.13 *	1,054.90 *	1,233.57	0.0%
	2018	1,240.94 *	1,787.59 *	1,085.83 *	1,273.93	0.0%
Average:						1.1866%

Projected to:

Pre Act 57:	4/1/2021	1,282.57	1,791.91	1,176.42	1,305.64
Post Act 57:	4/1/2021	1,216.11 *	1,699.06 *	1,115.46 *	1,237.99

b) Conversion Calculation:

Conversion Factor:		5.1817%	5.1817%	5.1817%	5.1817%	Note:
Post Act 57:	1996	\$590.32	\$795.09	\$545.21	\$594.87	Pre Act 57 times (1.0 - Factor)
Post Act 57:	1997	609.12	822.92	561.20	614.34	Pre Act 57 times (1.0 - Factor)
Post Act 57:	1998	628.52	851.73	577.65	634.44	Pre Act 57 times (1.0 - Factor)
Post Act 57:	1999	648.54	881.54	594.59	655.20	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2000	669.20	912.40	612.02	676.64	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2001	690.51	944.34	629.96	698.78	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2002	712.50	977.40	648.43	721.64	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2003	735.19	1,011.62	667.44	745.25	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2004	758.61	1,047.03	687.01	769.63	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2005	782.77	1,083.68	707.15	794.82	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2006	807.70	1,121.62	727.88	820.82	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2007	833.43	1,160.88	749.22	847.68	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2008	859.97	1,201.52	771.19	875.42	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2009	887.36	1,243.58	793.80	904.06	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2010	915.62	1,287.11	817.07	933.64	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2011	944.78	1,332.17	841.02	964.19	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2012	974.87	1,378.80	865.68	995.74	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2013	1,005.92	1,427.07	891.06	1,028.32	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2014	1,037.96	1,477.03	917.18	1,061.96	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2015	1,071.01	1,528.73	944.07	1,096.71	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2016	1,105.13	1,582.25	971.75	1,132.59	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2017	1,140.32	1,637.63	1,000.24	1,169.65	Pre Act 57 times (1.0 - Factor)
Post Act 57:	2018	1,176.64	1,694.96	1,029.56	1,207.92	Pre Act 57 times (1.0 - Factor)
Post Act 57:	4/1/2021	1,216.11	1,699.06	1,115.46	1,237.99	Pre Act 57 times (1.0 - Factor)

* Post Act 57 for 1997-2018 and Projected to 04/01/2021

** Post Act 57 applies to one 1996 case on or after 8-23-96 - Pre Act 57 applies to four 1996 cases on or before 8-22-96

*** Factor reflects that 234/365ths of 1996 was Pre Act 57.

Source: Average Weekly Wage (Smoothed) - Exhibit VII-H, pages 1, 2, 3 and 4 - Column (8)

Projected 04/01/2021 Weekly Wage - Exhibit VII-H, pages 1, 2, 3 and 4 - Column (6)

Wage level decrease - Exhibit VII-G, Page 2.

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 Effective Date - April 01, 2020
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COAL MINE COMPENSATION RATING BUREAU

WAGE LEVEL OFFSET (Act 57, Section 309) and PENSION PERCENTAGE

State Occupational Disease and Federal Excess

<u>Calculation of Wage Offset</u>		<u>Average Benefits</u>		State OD
		Before	After	Claim Count
		<u>Offset</u>	<u>Offset</u>	
(a) Wage Ranges				
Above	869.55	527.00	527.00	32
\$790.50 -	869.55	527.00	503.09	10
\$447.95 -	790.49	408.00	370.95	63
\$395.25 -	447.94	272.00	263.50	11
\$316.20 -	395.24	263.50	263.50	3
\$289.95 -	316.19	263.50	247.94	0
\$0.00 -	289.94	207.00	188.21	1
Average/Total		\$431.90	\$409.52	120

- (b) Selected State Indemnity Factor:
- (i) After ÷ Before ($\$409.52 \div \431.90) 94.8183%
 - (ii) Complement (1.0 minus 0.948183) 5.1817%
 - (iii) Reduced by 10% for Phase-in of Act 57 4.6635%
- (See Exhibit VII-G, Page 1)

Source:

Wage Ranges - Pennsylvania Compensation Rating Bureau
 Evaluation of SB801 Amendments to Section 309 of Act 57
 Above \$869.55 - Claims eligible for maximum under either wage calculation.
 \$790.50-869.55 - Claims at maximum under current but 2/3 of wage under proposed method.
 \$447.95-790.49 - Claims at 2/3 under either wage calculation.
 \$395.25-447.94 - Claims at 2/3 under current method but 50% of maximum under proposed method.
 \$316.20-395.24 - Claims at 50% under either method.
 \$289.95-316.19 - Claims at 50% under current method but 90% of maximum under proposed method.
 \$.00-289.94 - Claims at 90% under either method.
 Average Benefits Before and After Act 57
 State Claim Counts - Claimant wages from 1987 through 1996 Exposure Years from CMCRB database, projected to 1996 level.

Calculation of Pension Offset Percentage

	Estimates
(a) Union Membership	50.0%
(b) Pension Paid by Employers	50.0%
(c) Present Employer Directly Liable for Pension	50.0%
(d) Resulting Offset for State O.D.	12.5%

Sources: Percentage of Miners eligible: estimate.

COAL MINE COMPENSATION RATING BUREAU
Wage Level Adjustment to Current Level - State Occupational Disease Model
Anthracite Underground (1011)

Exhibit VII-H

Page 1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Statewide	Claimants'	(2) Adjusted		(3) Ex. High	(1) Adjusted	(5) & (6)	(8)
	Avg Wage	Actual Avg Wage	For Act 57	(3)/(1)	& Low	Wage Level	Adjusted Avg Wages	Exponentially Fitted Wages
1990	419.00	539.87	539.87	1.2885	539.87		539.87	515.82
1991	436.00	0.00				510.68	510.68	532.25
1992	455.00	608.33	608.33	1.3370	608.33		608.33	549.20
1993	475.00	419.67	419.67	0.8835 Low		556.37	556.37	566.69
1994	493.00	0.00				577.45	577.45	584.74
1995	509.00	0.00				596.19	596.19	603.37
1996	527.00	0.00				617.27	617.27	622.58
1997	542.00	0.00				634.84	634.84	642.41
1998	561.00	0.00				657.10	657.10	662.87
1999	588.00	501.00	528.38	0.8986	528.38		528.38	683.98
2000	611.00	0.00				715.66	715.66	705.77
2001	644.00	0.00				754.31	754.31	728.25
2002	662.00	0.00				775.40	775.40	751.44
2003	675.00	0.00				790.62	790.62	775.37
2004	690.00	0.00				808.19	808.19	800.07
2005	716.00	0.00				838.65	838.65	825.55
2006	745.00	0.00				872.61	872.61	851.84
2007	779.00	0.00				912.44	912.44	878.97
2008	807.00	0.00				945.23	945.23	906.96
2009	836.00	0.00				979.20	979.20	935.85
2010	845.00	0.00				989.74	989.74	965.66
2011	858.00	1400.00	1476.51	1.7209 High		1004.97	1004.97	996.41
2012	888.00	0.00				1040.11	1040.11	1028.15
2013	917.00	1009.57	1064.74	1.1611	1064.74		1064.74	1060.89
2014	932.00	0.00				1091.65	1091.65	1094.68
2015	951.00	0.00				1113.90	1113.90	1129.54
2016	978.00	0.00				1145.53	1145.53	1165.52
2017	995.00	0.00				1165.44	1165.44	1202.64
2018	1025.00	0.00				1200.58	1200.58	1240.94
2019	1049.00							
			High	1.7209				
			Low	0.8835				
			Average Ratio Claimant/State - High & Low	1.1713				

Projected

2020	1,075.00
2021	1,102.00
2022	1,130.00

Projected Avg. Wage at Claimants' Level

4/1/2021 1,095.00 $1,095.00 * 1.1713 =$ \$1,282.57

Act 57 Factor: 94.8183%

(1) Statewide average weekly wage

(2) CMCRR database, reported State OD average weekly wage

the reported wages were adjusted to pre-act 57 wage level by dividing them by the wage offset of (1.0 minus .051817)

(3)= Column (2) adjusted for Act 57

(4) =(3)/(1)

(5) Actual adjusted wages excluding High and Low

(6) Wage history based on State OD wages, except for high, low, and zeroes where \$AWW times average indices was used

(7) Adjusted Wages using Cols. (5) & (6)

(8) Fitted Wages using Regression on data in Col.(7)

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Effective Date - April 01, 2020

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COAL MINE COMPENSATION RATING BUREAU
Wage Level Adjustment to Current Level - State Occupational Disease Model
Bituminous Underground (1002)

Exhibit VII-H

Page 2

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Statewide	Claimants' Actual	(2) Adjusted		(3) Ex. High	(1) Adjusted	(5) & (6)	Exponentially
	Avg Wage	Avg Wage	For Act 57	(3)/(1)	& Low	Wage Level	Adjusted	Fitted
							Avg Wages	Wages
1990	419.00	779.92	779.92	1.8614	779.92		779.92	682.13
1991	436.00	827.00	827.00	1.8968	827.00		827.00	706.01
1992	455.00	652.04	652.04	1.4331	652.04		652.04	730.72
1993	475.00	729.40	729.40	1.5356	729.40		729.40	756.30
1994	493.00	1043.85	1043.85	2.1173	1043.85		1043.85	782.77
1995	509.00	1525.00	1525.00	2.9961 High		832.95	832.95	810.18
1996	527.00	706.64	706.64	1.3409	706.64		706.64	838.54
1997	542.00	672.19	708.92	1.3080	708.92		708.92	867.89
1998	561.00	1058.08	1115.90	1.9891	1115.90		1115.90	898.27
1999	588.00	675.00	711.89	1.2107	711.89		711.89	929.72
2000	611.00	901.03	950.27	1.5553	950.27		950.27	962.26
2001	644.00	604.79	637.84	0.9904 Low		1053.87	1053.87	995.95
2002	662.00	800.15	843.88	1.2747	843.88		843.88	1030.81
2003	675.00	1324.39	1396.77	2.0693	1396.77		1396.77	1066.90
2004	690.00	876.68	924.59	1.3400	924.59		924.59	1104.25
2005	716.00	912.44	962.30	1.3440	962.30		962.30	1142.90
2006	745.00	0.00				1219.15	1219.15	1182.91
2007	779.00	0.00				1274.79	1274.79	1224.32
2008	807.00	1164.02	1227.63	1.5212	1227.63		1227.63	1267.18
2009	836.00	0.00				1368.07	1368.07	1311.54
2010	845.00	0.00				1382.80	1382.80	1357.45
2011	858.00	1269.97	1339.37	1.5610	1339.37		1339.37	1404.97
2012	888.00	1326.96	1399.48	1.5760	1399.48		1399.48	1454.15
2013	917.00	1537.44	1621.46	1.7682	1621.46		1621.46	1505.06
2014	932.00	1473.55	1554.08	1.6675	1554.08		1554.08	1557.74
2015	951.00	1333.56	1406.44	1.4789	1406.44		1406.44	1612.27
2016	978.00	1465.73	1545.83	1.5806	1545.83		1545.83	1668.71
2017	995.00	0.00				1628.27	1628.27	1727.13
2018	1025.00	2500.00	2636.62	2.5723	2636.62		2636.62	1787.59
2019	1049.00							
			High	2.9961				
			Low	0.9904				
			Average Ratio Claimant/State - High & Low	1.6364				

Projected

2020	1,075.00
2021	1,102.00
2022	1,130.00

Projected Avg. Wage at Claimants' Level

4/1/2021 1,095.00 $1,095.00 * 1.6364 =$ \$1,791.91

Act 57 Factor: 94.8183%

(1) Statewide average weekly wage

(2) CMCRB database, reported State OD average weekly wage

the reported wages were adjusted to pre-act 57 wage level by dividing them by the wage offset of (1.0 minus .051817)

(3)= Column (2) adjusted for Act 57

(4) =(3)/(1)

(5) Actual adjusted wages excluding High and Low

(6) Wage history based on State OD wages, except for high, low, and zeroes where \$AWW times average indices was used

(7) Adjusted Wages using Cols. (5) & (6)

(8) Fitted Wages using Regression on data in Col.(7)

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Run Date: August 26, 2019 - 01:38:42 PM

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Effective Date - April 01, 2020

292,795.433454

COAL MINE COMPENSATION RATING BUREAU
Wage Level Adjustment to Current Level - State Occupational Disease Model
Anthracite Surface (1016)

Exhibit VII-H

Page 3

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Statewide	Claimants' Actual	(2) Adjusted		(3) Ex. High To	(1) Adjusted	(5) & (6)	Exponentially
	Avg Wage	Avg Wage	For Act 57	(3)/(1)	& Low	Wage Level	Adjusted	Fitted
							Avg Wages	Wages
1990	419.00	549.31	549.31	1.3110	549.31		549.31	483.48
1991	436.00	492.75	492.75	1.1302	492.75		492.75	497.65
1992	455.00	565.40	565.40	1.2426	565.40		565.40	512.24
1993	475.00	548.61	548.61	1.1550	548.61		548.61	527.26
1994	493.00	543.95	543.95	1.1033	543.95		543.95	542.72
1995	509.00	651.62	651.62	1.2802	651.62		651.62	558.63
1996	527.00	453.71	453.71	0.8609	453.71		453.71	575.01
1997	542.00	530.26	559.24	1.0318	559.24		559.24	591.87
1998	561.00	744.92	785.63	1.4004	785.63		785.63	609.22
1999	588.00	571.47	602.70	1.0250	602.70		602.70	627.08
2000	611.00	133.68	140.99	0.2307 Low		656.43	656.43	645.46
2001	644.00	517.49	545.77	0.8475	545.77		545.77	664.39
2002	662.00	589.00	621.19	0.9384	621.19		621.19	683.86
2003	675.00	633.40	668.01	0.9897	668.01		668.01	703.91
2004	690.00	1568.35	1654.06	2.3972 High		741.30	741.30	724.55
2005	716.00	575.91	607.38	0.8483	607.38		607.38	745.79
2006	745.00	0.00				800.39	800.39	767.66
2007	779.00	733.08	773.14	0.9925	773.14		773.14	790.16
2008	807.00	0.00				867.00	867.00	813.33
2009	836.00	0.00				898.16	898.16	837.18
2010	845.00	0.00				907.83	907.83	861.72
2011	858.00	466.84	492.35	0.5738	492.35		492.35	886.98
2012	888.00	0.00				954.02	954.02	912.99
2013	917.00	0.00				985.18	985.18	939.75
2014	932.00	0.00				1001.30	1001.30	967.30
2015	951.00	0.00				1021.71	1021.71	995.66
2016	978.00	1422.00	1499.71	1.5334	1499.71		1499.71	1024.85
2017	995.00	0.00				1068.98	1068.98	1054.90
2018	1025.00	0.00				1101.21	1101.21	1085.83
2019	1049.00							
			High	2.3972				
			Low	0.2307				
			Average Ratio Claimant/State - High & Low	1.0744				

Projected

2020	1,075.00
2021	1,102.00
2022	1,130.00

Projected Avg. Wage at Claimants' Level

4/1/2021 1,095.00 $1,095.00 * 1.0744 =$ \$1,176.42

Act 57 Factor: 94.8183%

(1) Statewide average weekly wage

(2) CMCRR database, reported State OD average weekly wage

the reported wages were adjusted to pre-act 57 wage level by dividing them by the wage offset of (1.0 minus .051817)

(3)= Column (2) adjusted for Act 57

(4) =(3)/(1)

(5) Actual adjusted wages excluding High and Low

(6) Wage history based on State OD wages, except for high, low, and zeroes where \$AWW times average indices was used

(7) Adjusted Wages using Cols. (5) & (6)

(8) Fitted Wages using Regression on data in Col.(7)

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Effective Date - April 01, 2020

228,303.664727

COAL MINE COMPENSATION RATING BUREAU
Wage Level Adjustment to Current Level - State Occupational Disease Model
Bituminous Surface (1013)

Exhibit VII-H

Page 4

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Statewide	Claimants' Actual	(2) Adjusted		(3) Ex. High	(1) Adjusted	(5) & (6)	Exponentially
	Avg Wage	Avg Wage	For Act 57	(3)/(1)	& Low	Wage Level	Adjusted	Fitted
							Avg Wages	Wages
1990	419.00	481.50	481.50	1.1492	481.50		481.50	517.18
1991	436.00	595.45	595.45	1.3657	595.45		595.45	534.10
1992	455.00	652.89	652.89	1.4349	652.89		652.89	551.57
1993	475.00	705.41	705.41	1.4851 High		566.37	566.37	569.62
1994	493.00	621.91	621.91	1.2615	621.91		621.91	588.26
1995	509.00	477.90	477.90	0.9389	477.90		477.90	607.51
1996	527.00	628.07	644.84	1.2236	644.84		644.84	627.38
1997	542.00	698.16	736.31	1.3585	736.31		736.31	647.91
1998	561.00	500.00	527.32	0.9400	527.32		527.32	669.11
1999	588.00	569.19	600.30	1.0209	600.30		600.30	691.00
2000	611.00	0.00				728.54	728.54	713.61
2001	644.00	0.00				767.88	767.88	736.96
2002	662.00	0.00				789.35	789.35	761.08
2003	675.00	0.00				804.85	804.85	785.98
2004	690.00	0.00				822.73	822.73	811.69
2005	716.00	676.00	712.94	0.9957	712.94		712.94	838.25
2006	745.00	0.00				888.31	888.31	865.68
2007	779.00	0.00				928.85	928.85	894.00
2008	807.00	0.00				962.24	962.24	923.26
2009	836.00	0.00				996.82	996.82	953.47
2010	845.00	0.00				1007.55	1007.55	984.66
2011	858.00	1111.56	1172.31	1.3663	1172.31		1172.31	1016.88
2012	888.00	1157.60	1220.86	1.3748	1220.86		1220.86	1050.15
2013	917.00	0.00				1093.40	1093.40	1084.51
2014	932.00	946.16	997.87	1.0707	997.87		997.87	1120.00
2015	951.00	734.85	775.01	0.8149 Low		1133.94	1133.94	1156.64
2016	978.00	0.00				1166.13	1166.13	1194.49
2017	995.00	0.00				1186.40	1186.40	1233.57
2018	1025.00	0.00				1222.17	1222.17	1273.93
2019	1049.00							
			High	1.4851				
			Low	0.8149				
			Average Ratio Claimant/State - High & Low	1.1924				

Projected

2020	1,075.00
2021	1,102.00
2022	1,130.00

Projected Avg. Wage at Claimants' Level

4/1/2021 1,095.00 $1,095.00 * 1.1924 =$ \$1,305.64

Act 57 Factor: 94.8183%

- (1) Statewide average weekly wage
(2) CMCRR database, reported State OD average weekly wage
the reported wages were adjusted to pre-act 57 wage level by dividing them by the wage offset of (1.0 minus .051817)
only one of the three claims in 1996 was adjusted by the pre-act 57 wage level
(3)= Column (2) adjusted for Act 57
(4) =(3)/(1)
(5) Actual adjusted wages excluding High and Low
(6) Wage history based on State OD wages, except for high, low, and zeroes where \$AWW times average indices was used
(7) Adjusted Wages using Cols. (5) & (6)
(8) Fitted Wages using Regression on data in Col.(7)

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Run Date: August 26, 2019 - 01:38:42 PM

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Effective Date - April 01, 2020
232,720.683456

Social Security - Cost of Living Adjustment History and Projection

The following annual cost of living percentage is used to adjust the Social Security benefit calculated at time of accident to retirement age.

<u>Year</u>	<u>Annual Changes</u>
1990	5.4%
1991	3.7%
1992	3.0%
1993	2.6%
1994	2.8%
1995	2.6%
1996	2.9%
1997	2.1%
1998	1.3%
1999	2.5%
2000	3.5%
2001	2.6%
2002	1.4%
2003	2.1%
2004	2.7%
2005	4.1%
2006	3.3%
2007	2.3%
2008	5.8%
2009	0.0%
2010	0.0%
2011	3.6%
2012	1.7%
2013	1.5%
2014	1.7%
2015	0.0%
2016	0.3%
2017	2.0%
2018	2.8%
2019	1.6%
Average All years	2.4%
Average latest 10 years	1.5%
Average latest 5 years	1.3%
Average latest 3 years	2.1%
Selected Annual Change Last Year's Selection was 2.5%	2.4%

Source: Social Security Administration Web Site

Social Security Formulas - Historic Primary Insurance Amounts (PIA) and Projections

The following projections are used to calculate the PIA (i.e., SS Benefit) in the SS Offset Model.

Monthly Wage Amounts Break Points:								
Year	90%		Plus 32%		Plus 15%		Annual SS Wage	
	of First:	Percent Change	of next:	Percent Change	of next:	Percent Change	Base	Percent Change
1990	356		1,789		2,130		51,300	
1991	370	3.9%	1,860	4.0%	2,220	4.2%	53,400	4.1%
1992	387	4.6%	1,946	4.6%	2,292	3.2%	55,500	3.9%
1993	401	3.6%	2,019	3.8%	2,380	3.8%	57,600	3.8%
1994	422	5.2%	2,123	5.2%	2,505	5.3%	60,600	5.2%
1995	426	0.9%	2,141	0.8%	2,533	1.1%	61,200	1.0%
1996	437	2.6%	2,198	2.7%	2,590	2.3%	62,700	2.5%
1997	455	4.1%	2,286	4.0%	2,709	4.6%	65,400	4.3%
1998	477	4.8%	2,398	4.9%	2,825	4.3%	68,400	4.6%
1999	505	5.9%	2,538	5.8%	3,007	6.4%	72,600	6.1%
2000	531	5.1%	2,671	5.2%	3,148	4.7%	76,200	5.0%
2001	561	5.6%	2,820	5.6%	3,319	5.4%	80,400	5.5%
2002	592	5.5%	2,975	5.5%	3,508	5.7%	84,900	5.6%
2003	606	2.4%	3,047	2.4%	3,597	2.5%	87,000	2.5%
2004	612	1.0%	3,077	1.0%	3,636	1.1%	87,900	1.0%
2005	627	2.5%	3,152	2.4%	3,721	2.3%	90,000	2.4%
2006	656	4.6%	3,299	4.7%	3,895	4.7%	94,200	4.7%
2007	680	3.7%	3,420	3.7%	4,025	3.3%	97,500	3.5%
2008	711	4.6%	3,577	4.6%	4,212	4.6%	102,000	4.6%
2009	744	4.6%	3,739	4.5%	4,417	4.9%	106,800	4.7%
2010	761	2.3%	3,825	2.3%	4,314	-2.3%	106,800	0.0%
2011	749	-1.6%	3,768	-1.5%	4,383	1.6%	106,800	0.0%
2012	767	2.4%	3,857	2.4%	4,551	3.8%	110,100	3.1%
2013	791	3.1%	3,977	3.1%	4,707	3.4%	113,700	3.3%
2014	816	3.2%	4,101	3.1%	4,833	2.7%	117,000	2.9%
2015	826	1.2%	4,154	1.3%	4,895	1.3%	118,500	1.3%
2016	856	3.6%	4,301	3.5%	4,718	-3.6%	118,500	0.0%
2017	885	3.4%	4,451	3.5%	5,264	11.6%	127,200	7.3%
2018	895	1.1%	4,502	1.1%	5,303	0.7%	128,400	0.9%
2019	926	3.5%	4,657	3.4%	5,492	3.6%	132,900	3.5%
2020	960	3.7%	4,825	3.6%	5,690	3.6%	137,700	3.6%
Average All years		3.4%		3.4%		3.4%		3.4%
Average latest 10 years		2.4%		2.4%		2.9%		2.6%
Average latest 5 years		3.1%		3.0%		3.2%		3.1%
Average latest 3 years		2.8%		2.7%		2.6%		2.7%
Last Year's Selection		2.5%		2.5%		2.5%		2.5%
Selection		2.5%		2.5%		2.5%		2.5%
Projections								
	Selected		Selected		Selected		Selected	
2020	960	Actual	4,825	Actual	5,690	Actual	137,700	Actual
2021	984	2.5%	4,946	2.5%	5,832	2.5%	141,100	2.5%
2022	1,009	2.5%	5,070	2.5%	5,978	2.5%	144,600	2.5%
Average Break Point		978		4,916		5,797		140,300
For Policies effective between 4-1-2020 and 4-1-2021								

Note: Weighted average of the three calendar years: 2020, 2021, 2022.

Weights: 2020	28.125%
2021	68.750%
2022	3.125%
	100.00%

Notes:

The above weights assume 1-year policies effective between 4-1-2020 and 4-1-2021

E.G.: 28.125% of the losses will occur between 4-1-2020 and 12-31-2020.

68.750% of the losses will occur between 1-1-2021 and 12-31-2021.

3.125% of the losses will occur between 1-1-2022 and 3-31-2022.

Source: Social Security Administration Web Site

PAB

Social Security Formulas - Primary Insurance Amount (PIA) Calculations
Example Calculations

I. Break Point Monthly Wage Amounts and Factors (Exhibit VII-J, Page 2)

Break Points (Projected to average accident date of 4-1-2021 with a 4-1-2020 filing effective date.)

	Yearly Maximum	Monthly Wages		
		First Break Point	Second Break Point	Third Break Point
Wage Amount:	140,300	978	4,916	5,797
Factor:		90%	32%	15%

II. Example Calculations

Example Number	Monthly Wage	Adjusted Monthly Wage (a)	PIA at each Breakpoint			Total PIA
			First (b)	Second (c)	Third (d)	
1	2,000	2,000	978	1,022	0	1,207
			90%	32%	15%	
			880	327	0	
2	4,000	4,000	978	3,022	0	1,847
			90%	32%	15%	
			880	967	0	
3	6,000	6,000	978	4,916	106	2,469
			90%	32%	15%	
			880	1,573	16	
4	8,000	8,000	978	4,916	2,106	2,769
			90%	32%	15%	
			880	1,573	316	
5	10,000	10,000	978	4,916	4,106	3,069
			90%	32%	15%	
			880	1,573	616	
6	12,000	11,692	978	4,916	5,797	3,323
			90%	32%	15%	
			880	1,573	870	

Notes:

- (a) Monthly Wage limited to Monthly Maximum (\$140,300/12 = \$11,692)
- (b) minimum of adjusted monthly wage and \$978
- (c) minimum of (adjusted monthly wage less \$978) and \$4,916
- (d) minimum of (adjusted monthly wage less \$978 less \$4,916) and \$5,797

Source: Exhibit VII-J, Page 2

Coal Mine Compensation Rating Bureau

Exhibit VII-L

Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Page 1

ANTHRACITE UNDERGROUND (0160)

Year	Counts				(5) Pending Awarded (3) * 30% # 0.00	(6) Denied Reopened # 0.15	(7) Denied Awarded # 0.03	(8) Ultimate Awarded (2)+(5)+(7) # 0.03	(9) Ultimate Denied (1)-(8) # 0.97	(10) IBNR # 0.0000	(11) IBNR Awarded (10)xAwd Ratio # 0.0000
	(1)	(2)	(3)	(4)							
	Reported # 1	Awarded # 0	Pending # 0	Denied # 1							
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	-	-
2013	1	1	-	-	-	-	-	1.00	-	-	-
2014	-	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-	0.0148	0.0052
Total	2	1	-	1	-	0.15	0.03	1.03	0.97	0.0148	0.0052

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded (8)+(11) # 0.0300	(\$M) # 1.8142	Frequency (12)/(13) 0.0165	Average Weekly Wage 588	Factor 1.072	Miner Years 55.3	Per 100 Miner Years 0.0542
1999	-	1.3702	-	611	1.072	40.2	-
2000	-	1.6365	-	644	1.072	45.6	-
2001	-	1.3865	-	662	1.072	37.6	-
2002	-	1.3543	-	675	1.072	36.0	-
2003	-	1.3453	-	690	1.072	35.0	-
2004	-	1.4176	-	716	1.072	35.5	-
2005	-	1.4425	-	745	1.072	34.7	-
2006	-	1.6625	-	779	1.072	38.3	-
2007	-	2.1367	-	807	1.072	47.5	-
2008	-	1.3359	-	836	1.072	28.7	-
2009	-	1.2996	-	845	1.072	27.6	-
2010	-	1.2579	-	858	1.072	26.3	-
2011	-	1.0293	-	888	1.072	20.8	-
2012	1.0000	0.3819	2.6185	917	1.072	7.5	13.3333
2013	-	0.2588	-	932	1.072	5.0	-
2014	-	0.2543	-	951	1.072	4.8	-
2015	-	0.1638	-	978	1.072	3.0	-
2016	-	0.2524	-	995	1.072	4.6	-
2017	0.0052	0.1833	0.0286	1,025	1.072	3.2	0.1638
Total	1.0352	21.9835	0.0471			537.2	0.1927

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau

Exhibit VII-L

Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Page 2

BITUMINOUS UNDERGROUND(0158)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 2	# 1	# 0	# 1	# 0.00	# 0.15	# 0.03	# 1.03	# 0.97	# 0.0000	# 0.0000
1999											
2000	3	1	-	2	-	0.30	0.06	1.06	1.94	-	-
2001	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2002	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2005	1	1	-	-	-	-	-	1.00	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	1	1	-	-	-	-	-	1.00	-	-	-
2011	2	2	-	-	-	-	-	2.00	-	-	-
2012	4	1	-	3	-	0.15	0.15	1.15	2.85	0.0492	0.0174
2013	6	-	1	5	0.30	0.25	0.25	0.55	5.45	0.1432	0.0508
2014	2	-	1	1	0.30	0.05	0.05	0.35	1.65	0.5446	0.1933
2015	3	-	2	1	0.60	0.05	0.05	0.65	2.35	0.7282	0.2584
2016	3	-	2	1	0.60	0.05	0.05	0.65	2.35	0.7214	0.2560
2017	-	-	-	-	-	-	-	-	-	1.2801	0.4543
2018	2	-	2	-	0.60	-	-	0.60	1.40	2.2621	0.8028
Total	35	9	8	18	2.40	1.20	0.84	12.24	22.76	5.7287	2.0331
Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)				
	Total	Payroll		Statewide		Estimated	Frequency				
	Awarded	(\$M)	Frequency	Average	Adjustment	Miner	Per 100				
	(8)+(11)		(12)/(13)	Weekly Wage	Factor	Years	Miner Years				
1999	# 1.0300	\$ 58.6852	0.0176	588	1.549	1,239.1	0.0831				
2000	1.0600	47.5206	0.0223	611	1.549	965.6	0.1098				
2001	1.0500	48.5226	0.0216	644	1.549	935.4	0.1123				
2002	0.0500	40.8380	0.0012	662	1.549	765.9	0.0065				
2003	-	36.4984	-	675	1.549	671.3	-				
2004	0.0500	46.0739	0.0011	690	1.549	829.0	0.0060				
2005	1.0000	66.2758	0.0151	716	1.549	1,149.2	0.0870				
2006	-	70.4659	-	745	1.549	1,174.3	-				
2007	-	79.9043	-	779	1.549	1,273.4	-				
2008	1.0500	101.3540	0.0104	807	1.549	1,559.2	0.0673				
2009	-	101.3481	-	836	1.549	1,505.1	-				
2010	1.0000	125.3936	0.0080	845	1.549	1,842.3	0.0543				
2011	2.0000	148.4857	0.0135	858	1.549	2,148.5	0.0931				
2012	1.1674	153.6189	0.0076	888	1.549	2,147.7	0.0544				
2013	0.6008	145.1463	0.0041	917	1.549	1,965.1	0.0306				
2014	0.5433	183.4320	0.0030	932	1.549	2,443.5	0.0222				
2015	0.9084	140.5703	0.0065	951	1.549	1,835.1	0.0495				
2016	0.9060	118.5455	0.0076	978	1.549	1,504.8	0.0602				
2017	0.4543	172.8008	0.0026	995	1.549	2,156.1	0.0211				
2018	1.4028	179.7466	0.0078	1,025	1.549	2,177.1	0.0644				
Total	14.2731	2,065.2265	0.0069			30,287.7	0.0471				

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

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Run Date: September 23, 2019 - 09:21:47 AM

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Effective Date - April 01, 2020

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Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 3

ANTHRACITE SURFACE(0153)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999											
2000	1	1	-	-	-	-	-	1.00	-	-	-
2001	1	1	-	-	-	-	-	1.00	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2004	1	1	-	-	-	-	-	1.00	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2007	2	-	-	2	-	0.10	0.10	0.10	1.90	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	1	-	1	-	0.30	-	-	0.30	0.70	-	-
2012	-	-	-	-	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-	-	-	-	-
2014	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2015	-	-	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-	0.0286	0.0102
2017	-	-	-	-	-	-	-	-	-	0.0737	0.0262
2018	-	-	-	-	-	-	-	-	-	0.1101	0.0391
Total	10	4	1	5	0.30	0.25	0.25	4.55	5.45	0.2125	0.0754

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded (8)+(11) # 0.0000	(\$M) \$ 18.4411	Frequency (12)/(13) -	Average Weekly Wage 588	Factor 1.072	Miner Years 562.6	Per 100 Miner Years -
1999							
2000	1.0000	16.8078	0.0595	611	1.072	493.5	0.2026
2001	1.0000	12.9237	0.0774	644	1.072	360.0	0.2778
2002	-	11.0466	-	662	1.072	299.3	-
2003	1.0500	11.9282	0.0880	675	1.072	317.0	0.3312
2004	1.0000	12.3597	0.0809	690	1.072	321.3	0.3112
2005	-	12.1409	-	716	1.072	304.2	-
2006	0.0500	12.0653	0.0041	745	1.072	290.5	0.0172
2007	0.1000	14.8666	0.0067	779	1.072	342.4	0.0292
2008	-	16.2202	-	807	1.072	360.6	-
2009	-	15.8935	-	836	1.072	341.0	-
2010	-	13.3192	-	845	1.072	282.8	-
2011	0.3000	19.5074	0.0154	858	1.072	407.9	0.0735
2012	-	24.7347	-	888	1.072	499.7	-
2013	-	20.7200	-	917	1.072	405.3	-
2014	0.0500	18.9113	0.0026	932	1.072	364.0	0.0137
2015	-	22.2344	-	951	1.072	419.4	-
2016	0.0102	19.2571	0.0005	978	1.072	353.2	0.0029
2017	0.0262	19.0946	0.0014	995	1.072	344.3	0.0076
2018	0.0391	18.3327	0.0021	1,025	1.072	320.9	0.0122
Total	4.6254	330.8050	0.0140			7,389.9	0.0626

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.
Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.
Col.(10): 40% of Exh. VII-C-1 thru VII-C-6
Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533
IBNR Award Ratio(2001 & Subseq.): 0.3549

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-07-L.xlsm]p 3

Run Date: September 23, 2019 - 09:21:47 AM

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Effective Date - April 01, 2020

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Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 4

BITUMINOUS SURFACE(0156)

Year	Counts				(5) Pending Awarded (3) * 30% # 0.00	(6) Denied Reopened # 0.15	(7) Denied Awarded # 0.03	(8) Ultimate Awarded (2)+(5)+(7) # 0.03	(9) Ultimate Denied (1)-(8) # 0.97	(10) IBNR # 0.0000	(11) IBNR Awarded (10)xAwd Ratio # 0.0000
	(1)	(2)	(3)	(4)							
	Reported # 1	Awarded # 0	Pending # 0	Denied # 1							
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	2	-	-	2	-	0.10	0.10	0.10	1.90	-	-
2013	-	-	-	-	-	-	-	-	-	-	-
2014	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2015	1	-	-	1	-	0.05	0.05	0.05	0.95	0.0165	0.0059
2016	-	-	-	-	-	-	-	-	-	0.0337	0.0120
2017	-	-	-	-	-	-	-	-	-	0.0705	0.0250
2018	-	-	-	-	-	-	-	-	-	0.1141	0.0405
Total	6	1	-	5	-	0.35	0.23	1.23	4.77	0.2349	0.0834

Year	(12) Total Awarded (8)+(11) # 0.0300	(13) Payroll (\$M) 54.1623	(14) Frequency (12)/(13) 0.0006	(15) Statewide Average Weekly Wage 588	(16) Adjustment Factor 1.072	(17) Estimated Miner Years 1,652.4	(18) Frequency Per 100 Miner Years 0.0018
1999	-	49.9356	-	611	1.072	1,466.1	-
2000	-	58.1513	-	644	1.072	1,619.9	-
2001	-	53.5021	-	662	1.072	1,449.8	-
2002	-	47.8737	-	675	1.072	1,272.3	-
2003	-	56.2173	-	690	1.072	1,461.6	-
2004	-	64.8716	-	716	1.072	1,625.3	-
2005	-	63.7985	-	745	1.072	1,536.2	-
2006	-	64.8081	-	779	1.072	1,492.4	-
2007	-	74.6012	-	807	1.072	1,658.3	-
2008	-	63.3067	-	836	1.072	1,358.5	-
2009	-	74.2552	-	845	1.072	1,576.4	-
2010	-	87.7305	-	858	1.072	1,834.3	-
2011	0.1000	77.8905	0.0013	888	1.072	1,573.5	0.0064
2012	-	62.7181	-	917	1.072	1,226.9	-
2013	1.0500	55.3686	0.0190	932	1.072	1,065.7	0.0985
2014	0.0559	42.0001	0.0013	951	1.072	792.3	0.0071
2015	0.0120	30.1312	0.0004	978	1.072	552.7	0.0022
2016	0.0250	34.2490	0.0007	995	1.072	617.5	0.0041
2017	0.0405	36.1104	0.0011	1,025	1.072	632.0	0.0064
2018	-	-	-	-	-	-	-
Total	1.3134	1,151.6820	0.0011			26,464.1	0.0050

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 5

FOUR STANDARD CLASSES

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAward Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
1999	# 4	# 1	# 0	# 3	# 0.00	# 0.45	# 0.09	# 1.09	# 2.91	# 0.0000	# 0.0000
2000	4	2	-	2	-	0.30	0.06	2.06	1.94	-	-
2001	3	2	-	1	-	0.05	0.05	2.05	0.95	-	-
2002	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2003	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2004	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2005	1	1	-	-	-	-	-	1.00	-	-	-
2006	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2007	2	-	-	2	-	0.10	0.10	0.10	1.90	-	-
2008	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	1	1	-	-	-	-	-	1.00	-	-	-
2011	3	2	1	-	0.30	-	-	2.30	0.70	-	-
2012	6	1	-	5	-	0.25	0.25	1.25	4.75	0.0492	0.0174
2013	7	1	1	5	0.30	0.25	0.25	1.55	5.45	0.1432	0.0508
2014	5	1	1	3	0.30	0.15	0.15	1.45	3.55	0.5446	0.1933
2015	4	-	2	2	0.60	0.10	0.10	0.70	3.30	0.7447	0.2643
2016	3	-	2	1	0.60	0.05	0.05	0.65	2.35	0.7837	0.2781
2017	-	-	-	-	-	-	-	-	-	1.4244	0.5055
2018	2	-	2	-	0.60	-	-	0.60	1.40	2.5011	0.8876
Total	53	15	9	29	2.70	1.95	1.35	19.05	33.95	6.1908	2.1971

Year	(12) Total Awarded (8)+(11)	(13) Payroll (\$M)	(14) Frequency (12)/(13)	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Per 100 Miner Years
1999	# 1.0900	\$ 133.1028	0.0082	588		3,509.4	0.0311
2000	2.0600	115.6342	0.0178	611		2,965.4	0.0695
2001	2.0500	121.2341	0.0169	644		2,960.9	0.0692
2002	0.0500	106.7732	0.0005	662		2,552.6	0.0020
2003	1.0500	97.6546	0.0108	675		2,296.6	0.0457
2004	1.0500	115.9962	0.0091	690		2,646.9	0.0397
2005	1.0000	144.7059	0.0069	716		3,114.2	0.0321
2006	0.0500	147.7722	0.0003	745		3,035.7	0.0016
2007	0.1000	161.2415	0.0006	779		3,146.5	0.0032
2008	1.0500	194.3121	0.0054	807		3,625.6	0.0290
2009	-	181.8842	-	836		3,233.3	-
2010	1.0000	214.2676	0.0047	845		3,729.1	0.0268
2011	2.3000	256.9815	0.0090	858		4,417.0	0.0521
2012	1.2674	257.2734	0.0049	888		4,241.7	0.0299
2013	1.6008	228.9663	0.0070	917		3,604.8	0.0444
2014	1.6433	257.9707	0.0064	932		3,878.2	0.0424
2015	0.9643	205.0591	0.0047	951		3,051.6	0.0316
2016	0.9281	168.0976	0.0055	978		2,413.7	0.0385
2017	0.5055	226.3968	0.0022	995		3,122.5	0.0162
2018	1.4876	234.3730	0.0063	1,025		3,133.2	0.0475
Total	21.2471	3,569.6970	0.0060			64,678.9	0.0329

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Sum of Pages 1 to 4

Col.(15): Exhibit XII-D

Col.(16): N/A

Col.(17): Total of 4 std. classes

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau

Exhibit VII-L

Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Page 6

COKE(0154)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0004	0.0002
2013	-	-	-	-	-	-	-	-	-	0.0013	0.0005
2014	-	-	-	-	-	-	-	-	-	0.0024	0.0008
2015	-	-	-	-	-	-	-	-	-	0.0036	0.0013
2016	-	-	-	-	-	-	-	-	-	0.0056	0.0020
2017	-	-	-	-	-	-	-	-	-	0.0089	0.0032
2018	-	-	-	-	-	-	-	-	-	0.0118	0.0042
Total	-	-	-	-	-	-	-	-	-	0.0340	0.0121

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Miner	Frequency
	Awarded (8)+(11)	(\$M)		Average Weekly Wage	Factor	Years	Per 100 Miner Years
1999	# 0.0000	\$ 12.2935	-	588	1.072	375.1	-
2000	-	12.0926	-	611	1.072	355.0	-
2001	-	10.3758	-	644	1.072	289.0	-
2002	-	10.4850	-	662	1.072	284.1	-
2003	-	11.5341	-	675	1.072	306.5	-
2004	-	12.0491	-	690	1.072	313.3	-
2005	-	12.8610	-	716	1.072	322.2	-
2006	-	12.7374	-	745	1.072	306.7	-
2007	-	13.6699	-	779	1.072	314.8	-
2008	-	9.7611	-	807	1.072	217.0	-
2009	-	5.1736	-	836	1.072	111.0	-
2010	-	5.4357	-	845	1.072	115.4	-
2011	-	3.5991	-	858	1.072	75.3	-
2012	0.0002	5.7381	0.0000	888	1.072	115.9	0.0001
2013	0.0005	4.7919	0.0001	917	1.072	93.7	0.0005
2014	0.0008	4.4644	0.0002	932	1.072	85.9	0.0010
2015	0.0013	4.3404	0.0003	951	1.072	81.9	0.0016
2016	0.0020	4.4351	0.0005	978	1.072	81.4	0.0025
2017	0.0032	4.5661	0.0007	995	1.072	82.3	0.0038
2018	0.0042	4.4568	0.0009	1,025	1.072	78.0	0.0054
Total	0.0121	164.8607	0.0001			4,004.5	0.0003

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-07-L.xlsm]p 6

Run Date: September 23, 2019 - 09:21:47 AM

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104,672.003895

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 7

AUGER(0157)

Year	Counts				(5) Pending Awarded (3) * 30% # 0.00	(6) Denied Reopened # 0.00	(7) Denied Awarded # 0.00	(8) Ultimate Awarded (2)+(5)+(7) # 0.00	(9) Ultimate Denied (1)-(8) # 0.00	(10) IBNR # 0.0000	(11) IBNR Awarded (10)xAwd Ratio # 0.0000
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0							
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0001	0.0000
2013	-	-	-	-	-	-	-	-	-	0.0003	0.0001
2014	-	-	-	-	-	-	-	-	-	0.0004	0.0002
2015	-	-	-	-	-	-	-	-	-	0.0005	0.0002
2016	-	-	-	-	-	-	-	-	-	0.0005	0.0002
2017	-	-	-	-	-	-	-	-	-	0.0009	0.0003
2018	-	-	-	-	-	-	-	-	-	0.0015	0.0005
Total	-	-	-	-	-	-	-	-	-	0.0041	0.0015

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded (8)+(11) # 0.0000	(\$M) \$ 1.1369	Frequency (12)/(13) -	Average Weekly Wage 588	Factor 1.072	Miner Years 34.7	Per 100 Miner Years -
1999	-	1.2059	-	611	1.072	35.4	-
2000	-	1.4291	-	644	1.072	39.8	-
2001	-	1.1508	-	662	1.072	31.2	-
2002	-	1.1022	-	675	1.072	29.3	-
2003	-	1.0588	-	690	1.072	27.5	-
2004	-	1.0265	-	716	1.072	25.7	-
2005	-	1.0668	-	745	1.072	25.7	-
2006	-	1.1212	-	779	1.072	25.8	-
2007	-	2.5068	-	807	1.072	55.7	-
2008	-	0.9470	-	836	1.072	20.3	-
2009	-	0.8275	-	845	1.072	17.6	-
2010	-	1.1763	-	858	1.072	24.6	-
2011	0.0000	0.8082	0.0000	888	1.072	16.3	0.0002
2012	0.0001	1.0469	0.0001	917	1.072	20.5	0.0005
2013	0.0002	0.8616	0.0002	932	1.072	16.6	0.0009
2014	0.0002	0.6548	0.0003	951	1.072	12.4	0.0014
2015	0.0002	0.3928	0.0004	978	1.072	7.2	0.0024
2016	0.0003	0.5663	0.0006	995	1.072	10.2	0.0031
2017	0.0005	0.5601	0.0009	1,025	1.072	9.8	0.0054
2018	0.0015	20.6465	0.0001			486.3	0.0003
Total							

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-07-L.xlsm]p 7

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Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 8

ANTHRACITE CO-GEN(0181)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0008	0.0003
2013	-	-	-	-	-	-	-	-	-	0.0022	0.0008
2014	-	-	-	-	-	-	-	-	-	0.0048	0.0017
2015	-	-	-	-	-	-	-	-	-	0.0088	0.0031
2016	-	-	-	-	-	-	-	-	-	0.0115	0.0041
2017	-	-	-	-	-	-	-	-	-	0.0172	0.0061
2018	-	-	-	-	-	-	-	-	-	0.0306	0.0108
Total	1	-	-	1	-	0.05	0.05	0.05	0.95	0.0759	0.0269

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded (8)+(11)	(\$M)	(12)/(13)	Average Weekly Wage	Factor	Miner Years	Per 100 Miner Years
1999	# 0.0000	\$ 3.6043	-	588	1.072	110.0	-
2000	-	4.4735	-	611	1.072	131.3	-
2001	-	4.6618	-	644	1.072	129.9	-
2002	-	5.6588	-	662	1.072	153.3	-
2003	0.0500	7.0096	0.0071	675	1.072	186.3	0.0268
2004	-	7.3515	-	690	1.072	191.1	-
2005	-	7.8553	-	716	1.072	196.8	-
2006	-	8.4125	-	745	1.072	202.6	-
2007	-	9.1867	-	779	1.072	211.6	-
2008	-	7.5214	-	807	1.072	167.2	-
2009	-	7.5347	-	836	1.072	161.7	-
2010	-	7.9580	-	845	1.072	168.9	-
2011	-	10.9816	-	858	1.072	229.6	-
2012	0.0003	9.3118	0.0000	888	1.072	188.1	0.0002
2013	0.0008	7.6308	0.0001	917	1.072	149.3	0.0005
2014	0.0017	8.3609	0.0002	932	1.072	160.9	0.0010
2015	0.0031	9.5548	0.0003	951	1.072	180.2	0.0017
2016	0.0041	7.9533	0.0005	978	1.072	145.9	0.0028
2017	0.0061	7.7936	0.0008	995	1.072	140.5	0.0044
2018	0.0108	10.0184	0.0011	1,025	1.072	175.3	0.0062
Total	0.0769	152.8333	0.0005			3,380.5	0.0023

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 9

BITUMINOUS CO-GEN(0182)

Year	Counts				(5) Pending Awarded (3) * 30% # 0.00	(6) Denied Reopened # 0.00	(7) Denied Awarded # 0.00	(8) Ultimate Awarded (2)+(5)+(7) # 0.00	(9) Ultimate Denied (1)-(8) # 0.00	(10) IBNR # 0.0000	(11) IBNR Awarded (10)xAwd Ratio # 0.0000
	(1)	(2)	(3)	(4)							
	Reported # 0	Awarded # 0	Pending # 0	Denied # 0							
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0007	0.0003
2013	-	-	-	-	-	-	-	-	-	0.0027	0.0010
2014	-	-	-	-	-	-	-	-	-	0.0062	0.0022
2015	-	-	-	-	-	-	-	-	-	0.0099	0.0035
2016	-	-	-	-	-	-	-	-	-	0.0144	0.0051
2017	-	-	-	-	-	-	-	-	-	0.0223	0.0079
2018	-	-	-	-	-	-	-	-	-	0.0316	0.0112
Total	1	-	-	1	-	0.05	0.05	0.05	0.95	0.0879	0.0312

Year	(12) Total Awarded (8)+(11) # 0.0000	(13) Payroll (\$M) \$ 1.4943	(14) Frequency (12)/(13) -	(15) Statewide Average Weekly Wage 588	(16) Adjustment Factor 1.072	(17) Estimated Miner Years 45.6	(18) Frequency Per 100 Miner Years -
1999	-	1.8707	-	611	1.072	54.9	-
2000	-	2.1213	-	644	1.072	59.1	-
2001	-	2.3861	-	662	1.072	64.7	-
2002	-	3.0525	-	675	1.072	81.1	-
2003	-	6.3745	-	690	1.072	165.7	-
2004	-	8.5248	-	716	1.072	213.6	-
2005	-	9.4236	-	745	1.072	226.9	-
2006	0.0500	10.8291	0.0046	779	1.072	249.4	0.0200
2007	-	8.4819	-	807	1.072	188.5	-
2008	-	7.8664	-	836	1.072	168.8	-
2009	-	8.7327	-	845	1.072	185.4	-
2010	-	9.1024	-	858	1.072	190.3	-
2011	0.0003	9.0477	0.0000	888	1.072	182.8	0.0001
2012	0.0010	10.3559	0.0001	917	1.072	202.6	0.0005
2013	0.0022	11.7212	0.0002	932	1.072	225.6	0.0010
2014	0.0035	11.7482	0.0003	951	1.072	221.6	0.0016
2015	0.0051	11.3276	0.0005	978	1.072	207.8	0.0025
2016	0.0079	11.4351	0.0007	995	1.072	206.2	0.0038
2017	0.0112	11.9966	0.0009	1,025	1.072	210.0	0.0053
2018	0.0812	157.8926	0.0005			3,350.6	0.0024
Total							

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau

Exhibit VII-L

Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Page 10

ANTHRACITE PREP PLANT(0183)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	1	1	-	-	-	-	-	1.00	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0017	0.0006
2013	-	-	-	-	-	-	-	-	-	0.0054	0.0019
2014	1	-	-	1	-	0.05	0.05	0.05	0.95	0.0108	0.0038
2015	1	1	-	-	-	-	-	1.00	-	0.0160	0.0057
2016	-	-	-	-	-	-	-	-	-	0.0224	0.0079
2017	-	-	-	-	-	-	-	-	-	0.0378	0.0134
2018	-	-	-	-	-	-	-	-	-	0.0636	0.0226
Total	4	2	-	2	-	0.10	0.10	2.10	1.90	0.1578	0.0560

Year	(12) Total Awarded (8)+(11)	(13) Payroll (\$M)	(14) Frequency (12)/(13)	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Per 100 Miner Years
	# 0.0000	\$ 1.2311	-	588	1.072	37.6	-
	-	1.3195	-	611	1.072	38.7	-
1999	-	2.2163	-	644	1.072	61.7	-
2000	-	2.3228	-	662	1.072	62.9	-
2001	-	3.4080	-	675	1.072	90.6	-
2002	-	4.4067	-	690	1.072	114.6	-
2003	-	5.1701	-	716	1.072	129.5	-
2004	-	4.8859	-	745	1.072	117.6	-
2005	0.0500	5.8173	0.0086	779	1.072	134.0	0.0373
2006	-	5.7335	-	807	1.072	127.5	-
2007	-	6.2646	-	836	1.072	134.4	-
2008	1.0000	4.8769	0.2050	845	1.072	103.5	0.9662
2009	-	6.1233	-	858	1.072	128.0	-
2010	0.0006	7.5690	0.0001	888	1.072	152.9	0.0004
2011	0.0019	7.0749	0.0003	917	1.072	138.4	0.0014
2012	0.0538	6.5215	0.0083	932	1.072	125.5	0.0429
2013	1.0057	6.1966	0.1623	951	1.072	116.9	0.8603
2014	0.0079	5.5430	0.0014	978	1.072	101.7	0.0078
2015	0.0134	6.0568	0.0022	995	1.072	109.2	0.0123
2016	0.0226	6.8883	0.0033	1,025	1.072	120.6	0.0187
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	2.1560	99.6261	0.0216	-	-	2,145.8	0.1005

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-07-L.xlsm]p 10

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100,855.600756

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 11

BITUMINOUS PREP PLANT(0184)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999											
2000	1	-	-	1	-	0.15	0.03	0.03	0.97	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0027	0.0010
2013	-	-	-	-	-	-	-	-	-	0.0090	0.0032
2014	-	-	-	-	-	-	-	-	-	0.0229	0.0081
2015	-	-	-	-	-	-	-	-	-	0.0282	0.0100
2016	-	-	-	-	-	-	-	-	-	0.0302	0.0107
2017	-	-	-	-	-	-	-	-	-	0.0563	0.0200
2018	-	-	-	-	-	-	-	-	-	0.0845	0.0300
Total	1	-	-	1	-	0.15	0.03	0.03	0.97	0.2339	0.0830

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded (8)+(11)	(\$M)	(12)/(13)	Average Weekly Wage	Factor	Miner Years	Per 100 Miner Years
1999	# 0.0000	\$ 10.6918	-	588	1.549	225.7	-
2000	0.0300	8.5748	0.0035	611	1.549	174.2	0.0172
2001	-	10.1550	-	644	1.549	195.8	-
2002	-	10.0945	-	662	1.549	189.3	-
2003	-	10.1952	-	675	1.549	187.5	-
2004	-	13.4602	-	690	1.549	242.2	-
2005	-	16.5483	-	716	1.549	286.9	-
2006	-	17.0510	-	745	1.549	284.1	-
2007	-	18.8952	-	779	1.549	301.1	-
2008	-	21.2503	-	807	1.549	326.9	-
2009	-	19.8280	-	836	1.549	294.5	-
2010	-	26.3131	-	845	1.549	386.6	-
2011	-	35.1551	-	858	1.549	508.7	-
2012	0.0010	34.2117	0.0000	888	1.549	478.3	0.0002
2013	0.0032	33.6400	0.0001	917	1.549	455.4	0.0007
2014	0.0081	31.8544	0.0003	932	1.549	424.3	0.0019
2015	0.0100	24.3206	0.0004	951	1.549	317.5	0.0032
2016	0.0107	20.0794	0.0005	978	1.549	254.9	0.0042
2017	0.0200	28.8167	0.0007	995	1.549	359.6	0.0056
2018	0.0300	32.0536	0.0009	1,025	1.549	388.2	0.0077
Total	0.1130	423.1889	0.0003			6,281.7	0.0018

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.
Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.
Col.(10): 40% of Exh. VII-C-1 thru VII-C-6
Col.(13): Exh. X-A

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)
times 1000000

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

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Run Date: September 23, 2019 - 09:21:47 AM

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Effective Date - April 01, 2020

109,759.735119

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 12

TOTAL OTHER CLASSES

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00	# 0.00	# 0.00	# 0.0000	# 0.0000
1999											
2000	1	-	-	1	-	0.15	0.03	0.03	0.97	-	-
2001	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-
2003	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2004	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-
2007	2	-	-	2	-	0.10	0.10	0.10	1.90	-	-
2008	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	1	1	-	-	-	-	-	1.00	-	-	-
2011	-	-	-	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-	-	0.0065	0.0023
2013	-	-	-	-	-	-	-	-	-	0.0210	0.0074
2014	1	-	-	1	-	0.05	0.05	0.05	0.95	0.0475	0.0169
2015	1	1	-	-	-	-	-	1.00	-	0.0670	0.0238
2016	-	-	-	-	-	-	-	-	-	0.0846	0.0300
2017	-	-	-	-	-	-	-	-	-	0.1435	0.0509
2018	-	-	-	-	-	-	-	-	-	0.2235	0.0793
Total	7	2	-	5	-	0.35	0.23	2.23	4.77	0.5936	0.2107

Year	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	Total	Payroll	Frequency	Statewide	Adjustment	Estimated	Frequency
	Awarded	(\$M)		Average		Miner	Per 100
	(8)+(11)		(12)/(13)	Weekly Wage	Factor	Years	Miner Years
1999	# 0.0000	\$ 30.4519	-	588		828.7	-
2000	0.0300	29.5370	0.0010	611		789.5	0.0038
2001	-	30.9593	-	644		775.3	-
2002	-	32.0980	-	662		785.5	-
2003	0.0500	36.3016	0.0014	675		881.3	0.0057
2004	-	44.7008	-	690		1,054.4	-
2005	-	51.9860	-	716		1,174.7	-
2006	-	53.5772	-	745		1,163.6	-
2007	0.1000	59.5194	0.0017	779		1,236.7	0.0081
2008	-	55.2550	-	807		1,082.8	-
2009	-	47.6143	-	836		890.7	-
2010	1.0000	54.1439	0.0185	845		977.4	0.1023
2011	-	66.1378	-	858		1,156.5	-
2012	0.0023	66.6865	0.0000	888		1,134.3	0.0002
2013	0.0074	64.5404	0.0001	917		1,059.9	0.0007
2014	0.0669	63.7840	0.0010	932		1,038.8	0.0064
2015	1.0238	56.8154	0.0180	951		930.5	0.1100
2016	0.0300	49.7312	0.0006	978		798.9	0.0038
2017	0.0509	59.2346	0.0009	995		798.0	0.0056
2018	0.0793	65.9738	0.0012	1,025		981.9	0.0081
Total	2.4407	1,019.0481	0.0024			19,649.4	0.0124

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Sum of Pages 6 to 11

Col.(15): Exhibit XII-D

Col.(16): N/A

Col.(17): Total of other classes

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533
IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau
Federal Excess Occupational Disease After Administration / Law Change Frequencies by Classification

Exhibit VII-L

Page 13

GRAND TOTAL

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR	(11) IBNR Awarded (10)xAwd Ratio
	(1)	(2)	(3)	(4)							
	Reported	Awarded	Pending	Denied							
1999	# 4	# 1	# 0	# 3	# 0.00	# 0.45	# 0.09	# 1.09	# 2.91	# 0.0000	# 0.0000
2000	5	2	-	3	-	0.45	0.09	2.09	2.91	-	-
2001	3	2	-	1	-	0.05	0.05	2.05	0.95	-	-
2002	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2003	3	1	-	2	-	0.10	0.10	1.10	1.90	-	-
2004	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2005	1	1	-	-	-	-	-	1.00	-	-	-
2006	1	-	-	1	-	0.05	0.05	0.05	0.95	-	-
2007	4	-	-	4	-	0.20	0.20	0.20	3.80	-	-
2008	2	1	-	1	-	0.05	0.05	1.05	0.95	-	-
2009	-	-	-	-	-	-	-	-	-	-	-
2010	2	2	-	-	-	-	-	2.00	-	-	-
2011	3	2	1	-	0.30	-	-	2.30	0.70	-	-
2012	6	1	-	5	-	0.25	0.25	1.25	4.75	0.0557	0.0198
2013	7	1	1	5	0.30	0.25	0.25	1.55	5.45	0.1641	0.0582
2014	6	1	1	4	0.30	0.20	0.20	1.50	4.50	0.5921	0.2101
2015	5	1	2	2	0.60	0.10	0.10	1.70	3.30	0.8117	0.2881
2016	3	-	2	1	0.60	0.05	0.05	0.65	2.35	0.8683	0.3082
2017	-	-	-	-	-	-	-	-	-	1.5679	0.5564
2018	2	-	2	-	0.60	-	-	0.60	1.40	2.7246	0.9670
Total	60	17	9	34	2.70	2.30	1.58	21.28	38.72	6.7844	2.4078

Year	(12) Total Awarded (8)+(11)	(13) Payroll (\$M)	(14) Frequency (12)/(13)	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Per 100 Miner Years
1999	# 1.0900	\$ 163.5547	0.0067	588		4,338.1	0.0251
2000	2.0900	145.1712	0.0144	611		3,754.9	0.0557
2001	2.0500	152.1934	0.0135	644		3,736.2	0.0549
2002	0.0500	138.8712	0.0004	662		3,338.1	0.0015
2003	1.1000	133.9562	0.0082	675		3,177.9	0.0346
2004	1.0500	160.6970	0.0065	690		3,701.3	0.0284
2005	1.0000	196.6919	0.0051	716		4,288.9	0.0233
2006	0.0500	201.3494	0.0002	745		4,199.3	0.0012
2007	0.2000	220.7609	0.0009	779		4,383.2	0.0046
2008	1.0500	249.5671	0.0042	807		4,708.4	0.0223
2009	-	229.4985	-	836		4,124.0	-
2010	2.0000	268.4115	0.0075	845		4,706.5	0.0425
2011	2.3000	323.1193	0.0071	858		5,573.5	0.0413
2012	1.2698	323.9599	0.0039	888		5,376.0	0.0236
2013	1.6082	293.5067	0.0055	917		4,664.7	0.0345
2014	1.7101	321.7547	0.0053	932		4,917.0	0.0348
2015	1.9881	261.8745	0.0076	951		3,982.1	0.0499
2016	0.9582	217.8288	0.0044	978		3,212.6	0.0298
2017	0.5564	285.6314	0.0019	995		4,030.5	0.0138
2018	1.5670	300.3468	0.0052	1,025		4,115.1	0.0381
Total	23.6878	4,588.7451	0.0052			84,328.3	0.0281

Sources: Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.15)xCol.(4);2000 & Prior
(0.05)xCol.(4);2001 & Subseq.

Col.(7): (0.20)xCol.(6);2000 & Prior
(1.00)xCol.(6);2001 & Subseq.

Col.(10): 40% of Exh. VII-C-1 thru VII-C-6

Col.(13): Sum of Pages 5 & 12

Col.(15): Exhibit XII-D

Col.(16): N/A

Col.(17): Total of all classes

Col.(18): (12) / (17) x 100

IBNR Award Ratio(2000 & Prior): 0.3533

IBNR Award Ratio(2001 & Subseq.): 0.3549

Coal Mine Compensation Rating Bureau
Summary of Individual Claim Detail for Federal Basic
Claims from Exposure Years 1990 to 2018

Federal Basic Severities

	Indemnity	Medical	Total
Underground Anthracite Class 160			
Total	7,199,462	1,179,318	8,378,779
Number of Claims	19	19	19
Average	378,919	62,069	440,988
Underground Bituminous Class 158			
Total	24,431,606	4,531,201	28,962,807
Number of Claims	73	73	73
Average	334,680	62,071	396,751
Surface Anthracite Class 153			
Total	12,977,140	2,182,520	15,159,660
Number of Claims	41	41	41
Average	316,516	53,232	369,748
Surface Bituminous Class 156			
Total	20,132,295	3,597,594	23,729,889
Number of Claims	65	65	65
Average	309,728	55,348	365,075
Four Standard Classes Combined			
Total	64,740,503	11,490,632	76,231,135
Number of Claims	198	198	198
Average	326,972	58,033	385,006
Other Classes			
Total	3,392,046	616,095	4,008,141
Number of Claims	11	11	11
Average	308,368	56,009	364,376
All Classes Combined			
Total	68,132,549	12,106,728	80,239,276
Number of Claims	209	209	209
Average	325,993	57,927	383,920

Source: Exhibit IX-B

PAB

FEDERAL BASIC OCCUPATIONAL DISEASE

ANTHRACITE UNDERGROUND (0160)

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.200 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	1	0	0	0	1	0.1340	0.1340	0.026806	1,335,866	0.026806	1.072	28.7	0.093401	
2010	0	0	0	0	0	0.2025	0.2025	0.040498	1,299,588	0.040498	1.072	27.6	0.146732	
2011	2	0	0	2	2	0.2674	0.2674	0.053476	1,257,944	0.053476	1.072	26.3	0.203331	
2012	0	0	0	0	0	0.2772	0.2772	0.055446	1,029,260	0.055446	1.072	20.8	0.266567	
2013	2	0	0	2	2	0.1262	0.1262	0.025242	381,876	0.025242	1.072	7.5	0.336560	
2014	0	0	0	0	0	0.1014	0.1014	0.020272	258,809	0.020272	1.072	5.0	0.405440	
2015	0	0	0	0	0	0.1207	0.1207	0.024144	254,336	0.024144	1.072	4.8	0.503000	
2016	0	0	0	0	0	0.0918	0.0918	0.018364	163,760	0.018364	1.072	3.0	0.612133	
2017	0	0	0	0	0	0.1792	0.1792	0.035842	252,383	0.035842	1.072	4.6	0.779174	
2018	0	0	0	0	0	0.1671	0.1671	0.033426	183,346	0.033426	1.025	3.2	1.044563	
TOTAL	5	0	0	5	5	1.6676	1.6676	0.333516	6,417,168	0.333516		131.5	4.390901	
AVERAGE													0.439090	

BITUMINOUS UNDERGROUND (0158)

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.031 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	5	0	0	5	6.5501	6.5501	0.203054	101,348,140	0.203054	836	1.549	1,505.1	0.013491	
2010	5	0	1	4	9.2553	10.2553	0.317914	125,393,576	0.317914	845	1.549	1,842.3	0.017256	
2011	6	1	0	5	12.3347	12.3347	0.382376	148,485,709	1.382376	858	1.549	2,148.5	0.064341	
2012	5	0	0	5	14.9287	14.9287	0.462789	153,618,908	0.462789	888	1.549	2,147.7	0.021548	
2013	4	1	0	3	16.2767	16.2767	0.504578	145,146,253	1.504578	917	1.549	1,965.1	0.076565	
2014	15	0	1	14	23.5747	24.5747	0.761815	183,431,952	0.761815	932	1.549	2,443.5	0.031177	
2015	18	0	3	15	20.4909	23.4909	0.728219	140,570,275	0.728219	951	1.549	1,835.1	0.039683	
2016	7	0	0	7	19.5351	19.5351	0.605588	118,545,477	0.605588	978	1.549	1,504.8	0.040244	
2017	4	0	1	3	33.3609	34.3609	1.065189	172,800,836	1.065189	995	1.549	2,156.1	0.049403	
2018	3	0	1	2	40.0260	41.0260	1.271805	179,746,573	1.271805	1,025	1.549	2,177.1	0.058417	
TOTAL	72	2	7	63	196.3331	203.3331	6.303327	1,469,087,699	8.303327			19,725.3	0.412125	0.041213
AVERAGE														

ANTHRACITE SURFACE (0153)

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.182 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	2	1	0	1	0.6580	0.6580	0.119754	15,893,528	0.119754	836	1.072	341.0	0.328374	
2010	2	0	0	2	0.6573	0.6573	0.119629	13,319,185	0.119629	845	1.072	282.8	0.042301	
2011	1	0	0	1	1.1293	1.1293	0.205531	19,507,428	0.205531	858	1.072	407.9	0.050388	
2012	1	0	0	1	1.6778	1.6778	0.305352	24,734,711	0.305352	888	1.072	499.7	0.061107	
2013	3	1	2	0	1.6448	3.6448	0.663345	20,720,014	1.663345	917	1.072	405.3	0.410398	
2014	1	0	0	1	1.7410	1.7410	0.316858	18,911,339	0.316858	932	1.072	364.0	0.087049	
2015	1	0	0	1	2.3431	2.3431	0.426437	22,234,350	0.426437	951	1.072	419.4	0.101678	
2016	2	0	1	1	2.3282	3.3282	0.605729	19,257,107	0.605729	978	1.072	353.2	0.171497	
2017	1	0	0	1	2.7256	2.7256	0.496054	19,094,634	0.496054	995	1.072	344.3	0.144076	
2018	0	0	0	0	3.1158	3.1158	0.567081	18,332,737	0.567081	1,025	1.072	320.9	0.176716	
TOTAL	14	2	3	9	18.0207	21.0207	3.825769	192,005,033	5.825769			3,738.5	1.573584	0.157358
AVERAGE														

BITUMINOUS SURFACE (0156)

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.154 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	1	0	0	1	2.0246	2.0246	0.311781	63,306,695	0.311781	836	1.072	1,358.5	0.022950	
2010	2	0	1	1	2.8024	3.8024	0.585568	74,255,177	0.585568	845	1.072	1,576.4	0.037146	
2011	4	0	1	3	3.8663	4.8663	0.749407	87,730,506	0.749407	858	1.072	1,834.3	0.040855	
2012	9	2	1	6	3.9420	4.9420	0.761074	77,890,500	2.761074	888	1.072	1,573.5	0.175473	
2013	4	0	1	3	3.5862	4.5862	0.706278	62,718,061	0.706278	917	1.072	1,226.9	0.057566	
2014	3	1	1	1	3.5331	4.5331	0.698093	55,368,615	1.698093	932	1.072	1,065.7	0.159341	
2015	7	1	0	6	2.9606	2.9606	0.455931	42,000,092	1.455931	951	1.072	792.3	0.183760	
2016	0	0	0	0	2.3267	2.3267	0.358316	30,131,218	0.358316	978	1.072	552.7	0.064830	
2017	1	0	0	1	3.0639	3.0639	0.471842	34,248,962	0.471842	995	1.072	617.5	0.076412	
2018	0	0	0	0	3.7035	3.7035	0.570337	36,110,426	0.570337	1,025	1.072	632.0	0.090243	
TOTAL	31	4	5	22	31.8093	36.8093	5.668628	563,760,252	9.668628			11,229.8	0.908576	0.090858
AVERAGE														

FOUR STANDARD CLASSES

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.075 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	9	1	0	8	9.3667	9.3667	0.702503	181,884,229	1.661395	836		3,233.3	0.051384	
2010	9	0	2	7	12.9175	14.9175	1.118811	214,267,526	1.063609	845		3,729.1	0.028522	
2011	13	1	1	11	17.5977	18.5977	1.394825	256,981,587	2.390790	858		4,417.0	0.054127	
2012	15	2	1	12	20.8257	21.8257	1.636929	257,273,379	3.584662	888		4,241.7	0.084510	
2013	13	2	3	8	21.6339	24.6339	1.847541	228,966,204	3.899442	917		3,604.8	0.108174	
2014	19	1	2	16	28.9501	30.9501	2.321256	257,970,715	2.797038	932		3,878.2	0.072122	
2015	26	1	3	22	25.9153	28.9153	2.168468	205,059,053	2.634731	951		3,051.6	0.086339	
2016	9	0	1	8	24.2818	25.2818	1.896138	168,097,562	1.587998	978		2,413.7	0.065791	
2017	6	0	1	5	39.3296	40.3296	3.024722	226,396,815	2.068927	995		3,122.5	0.066259	
2018	3	0	1	2	47.0124	48.0124	3.600932	234,373,082	2.442650	1,025		3,133.2	0.077960	
TOTAL	122	8	15	99	247.8307	262.8307	16.131240	2,231,270,152	24.131240			34,825.1	0.695188	
AVERAGE													0.069519	0.071192

Source: Claim counts - CMCRB OD Database as of 4/30/2019

IBNR: Exhibit VIII-C

Payroll: Exhibit X-A

The Award Ratio is equal to Awarded ÷ (Awarded plus Denied). Other Classes use the Total Award Ratio: 0.071=08 / [08 + 104]

The Wage Adjustment Factor was derived from CMCRB data. See Exhibit X-G

Estimated Miner Years = Payroll / (SAWW x Adj. Factor x 52)

Frequency per 100 Miner Years = (Expected Ult. Awarded / Est. Miner Years) x 100

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Effective Date - April 01, 2020

8,925,369,956.798560

FEDERAL BASIC OCCUPATIONAL DISEASE

COKE (0154)

IBNR Factor adjusted by 0.2000

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0540	0.0540	0.003834	5,173,552	0.003834	836	1.072	111.0	0.003454	
2010	0	0	0	0	0.0640	0.0640	0.004544	5,435,658	0.004544	845	1.072	115.4	0.003938	
2011	0	0	0	0	0.0473	0.0473	0.003358	3,599,086	0.003358	858	1.072	75.3	0.004460	
2012	0	0	0	0	0.0838	0.0838	0.005950	5,738,105	0.005950	888	1.072	115.9	0.005134	
2013	0	0	0	0	0.0780	0.0780	0.005538	4,791,910	0.005538	917	1.072	93.7	0.005910	
2014	0	0	0	0	0.0816	0.0816	0.005794	4,464,398	0.005794	932	1.072	85.9	0.006745	
2015	0	0	0	0	0.0882	0.0882	0.006262	4,340,376	0.006262	951	1.072	81.9	0.007646	
2016	0	0	0	0	0.0998	0.0998	0.007086	4,435,066	0.007086	978	1.072	81.4	0.008705	
2017	0	0	0	0	0.1129	0.1129	0.008016	4,566,113	0.008016	995	1.072	82.3	0.009740	
2018	0	0	0	0	0.1207	0.1207	0.008570	4,456,795	0.008570	1,025	1.072	78.0	0.010987	
TOTAL	0	0	0	0	0.8303	0.8303	0.058951	47,001,059	0.058951			920.8	0.066719	
AVERAGE													0.006672	

AUGER (0157)

IBNR Factor adjusted by 0.4000

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.0198	0.0198	0.001406	946,963	0.001406	836	1.072	20.3	0.006925	
2010	1	0	1	0	0.0195	1.0195	0.072385	827,496	0.072385	845	1.072	17.6	0.411276	
2011	0	0	0	0	0.0309	0.0309	0.002194	1,176,255	0.002194	858	1.072	24.6	0.008918	
2012	1	0	0	1	0.0236	0.0236	0.001676	808,208	0.001676	888	1.072	16.3	0.010280	
2013	0	0	0	0	0.0341	0.0341	0.002421	1,046,947	0.002421	917	1.072	20.5	0.011810	
2014	0	0	0	0	0.0315	0.0315	0.002237	861,590	0.002237	932	1.072	16.6	0.013473	
2015	0	0	0	0	0.0266	0.0266	0.001889	654,766	0.001889	951	1.072	12.4	0.015231	
2016	0	0	0	0	0.0177	0.0177	0.001257	392,776	0.001257	978	1.072	7.2	0.017454	
2017	0	0	0	0	0.0280	0.0280	0.001988	566,324	0.001988	995	1.072	10.2	0.019490	
2018	0	0	0	0	0.0303	0.0303	0.002151	560,126	0.002151	1,025	1.072	9.8	0.021952	
TOTAL	2	0	1	1	0.2620	1.2620	0.089602	7,841,451	0.089602			155.5	0.536809	
AVERAGE													0.053681	

ANTHRACITE CO-GEN (0181)

IBNR Factor adjusted by 0.5000

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.1966	0.1966	0.013959	7,534,735	0.013959	836	1.072	161.7	0.008632	
2010	0	0	0	0	0.2342	0.2342	0.016628	7,958,048	0.016628	845	1.072	168.9	0.009845	
2011	0	0	0	0	0.3611	0.3611	0.025638	10,981,642	0.025638	858	1.072	229.6	0.011166	
2012	1	0	0	1	0.3398	0.3398	0.024126	9,311,812	0.024126	888	1.072	188.1	0.012826	
2013	1	0	0	1	0.3106	0.3106	0.022053	7,630,762	0.022053	917	1.072	149.3	0.014771	
2014	0	0	0	0	0.3820	0.3820	0.027122	8,360,898	0.027122	932	1.072	160.9	0.016856	
2015	0	0	0	0	0.4855	0.4855	0.034471	9,554,806	0.034471	951	1.072	180.2	0.019129	
2016	0	0	0	0	0.4475	0.4475	0.031773	7,953,309	0.031773	978	1.072	145.9	0.021777	
2017	0	0	0	0	0.4820	0.4820	0.034222	7,793,558	0.034222	995	1.072	140.5	0.024357	
2018	0	0	0	0	0.6780	0.6780	0.048138	10,018,416	0.048138	1,025	1.072	175.3	0.027460	
TOTAL	2	0	0	2	3.9173	3.9173	0.278128	87,097,986	0.278128			1,700.4	0.166819	
AVERAGE													0.016682	

BITUMINOUS CO-GEN (0182)

IBNR Factor adjusted by 0.5000

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.2053	0.2053	0.014576	7,866,413	0.014576	836	1.072	168.8	0.008635	
2010	0	0	0	0	0.2570	0.2570	0.018247	8,732,701	0.018247	845	1.072	185.4	0.009842	
2011	0	0	0	0	0.2993	0.2993	0.021250	9,102,411	0.021250	858	1.072	190.3	0.011167	
2012	0	0	0	0	0.3302	0.3302	0.023444	9,047,745	0.023444	888	1.072	182.8	0.012825	
2013	0	0	0	0	0.4216	0.4216	0.029934	10,355,884	0.029934	917	1.072	202.6	0.014775	
2014	0	0	0	0	0.5355	0.5355	0.038021	11,721,184	0.038021	932	1.072	225.6	0.016853	
2015	0	0	0	0	0.5970	0.5970	0.042387	11,748,205	0.042387	951	1.072	221.6	0.019128	
2016	0	0	0	0	0.6373	0.6373	0.045248	11,327,552	0.045248	978	1.072	207.8	0.021775	
2017	0	0	0	0	0.7071	0.7071	0.050204	11,435,057	0.050204	995	1.072	206.2	0.024347	
2018	0	0	0	0	0.8119	0.8119	0.057645	11,996,610	0.057645	1,025	1.072	210.0	0.027450	
TOTAL	0	0	0	0	4.8022	4.8022	0.340956	103,333,762	0.340956			2,001.1	0.166797	
AVERAGE													0.016680	

Source: Claim counts - CMCRB OD Database as of 4/30/2019

IBNR: Exhibit VIII-C

Payroll- Exhibit X-A

The Award Ratio is equal to Awarded ÷ (Awarded plus Denied). Other Classes use the Total Award Ratio: 0.071=08 / [08 + 104]

The Wage Adjustment Factor was derived from CMCRB data. See Exhibit X-G

Estimated Miner Years = Payroll / (SAWW x Adj. Factor x 52)

Frequency per 100 Miner Years = [Expected Ult. Awarded / Est. Miner Years] x 100

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FEDERAL BASIC OCCUPATIONAL DISEASE

ANTHRACITE PREP PLANT (0183)

IBNR Factor adjusted by 1.0000

Year	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	Weighted Frequency
2009	0	0	0	0	0.3269	0.3269	0.023210	6,264,606	0.023210	836	1.072	134.4	0.017269	
2010	0	0	0	0	0.2871	0.2871	0.020384	4,876,927	0.020384	845	1.072	103.5	0.019695	
2011	0	0	0	0	0.4027	0.4027	0.028592	6,123,259	0.028592	858	1.072	128.0	0.022337	
2012	0	0	0	0	0.5524	0.5524	0.039220	7,569,023	0.039220	888	1.072	152.9	0.025651	
2013	1	0	1	0	0.5760	1.5760	0.111896	7,074,886	0.111896	917	1.072	138.4	0.080850	
2014	0	0	0	0	0.5959	0.5959	0.042309	6,521,541	0.042309	932	1.072	125.5	0.03712	
2015	0	0	0	0	0.6298	0.6298	0.044716	6,196,596	0.044716	951	1.072	116.9	0.038251	
2016	0	0	0	0	0.6237	0.6237	0.044283	5,542,968	0.044283	978	1.072	101.7	0.043542	
2017	0	0	0	0	0.7491	0.7491	0.053186	6,056,810	0.053186	995	1.072	109.2	0.048705	
2018	0	0	0	0	0.9324	0.9324	0.066200	6,888,320	0.066200	1,025	1.072	120.6	0.054893	
TOTAL	1	0	1	0	5.6760	6.6760	0.473996	63,114,936	0.473996			1,231.1	0.384905	
Average													0.038491	

BITUMINOUS PREP PLANT (0184)

IBNR Factor adjusted by 0.5000

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	1	0	0	1	0.5174	0.5174	0.036735	19,828,012	0.036735	836	1.549	294.5	0.012474	
2010	0	0	0	0	0.7745	0.7745	0.054990	26,313,130	0.054990	845	1.549	386.6	0.014224	
2011	1	0	0	1	1.1559	1.1559	0.082069	35,155,068	0.082069	858	1.549	508.7	0.016133	
2012	0	0	0	0	1.2484	1.2484	0.088636	34,211,729	0.088636	888	1.549	478.3	0.018532	
2013	0	0	0	0	1.3695	1.3695	0.097235	33,639,969	0.097235	917	1.549	455.4	0.021351	
2014	2	0	2	0	1.4553	3.4553	0.245326	31,854,431	0.245326	932	1.549	424.3	0.057819	
2015	0	0	0	0	1.2359	1.2359	0.087749	24,320,608	0.087749	951	1.549	317.5	0.027637	
2016	0	0	0	0	1.1297	1.1297	0.080209	20,079,401	0.080209	978	1.549	254.9	0.031467	
2017	0	0	0	0	1.7820	1.7820	0.126522	28,816,678	0.126522	995	1.549	359.6	0.035184	
2018	0	0	0	0	2.1694	2.1694	0.154027	32,053,553	0.154027	1,025	1.549	388.2	0.039677	
TOTAL	4	0	2	2	12.8380	14.8380	1.053498	286,272,579	1.053498			3,868.0	0.274498	
Average													0.027450	

TOTAL OTHER CLASSES

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	1	0	0	1	1.3200	1.3200	0.093720	47,614,281	0.093720	836		890.7	0.010522	
2010	1	0	1	0	1.6363	2.6363	0.187177	54,143,960	0.187177	845		977.4	0.019151	
2011	1	0	0	1	2.2972	2.2972	0.163101	66,137,721	0.163101	858		1,156.5	0.014103	
2012	2	0	0	2	2.5782	2.5782	0.183052	66,686,622	0.183052	888		1,134.3	0.016138	
2013	2	0	1	1	2.7898	3.7898	0.269076	64,540,358	0.269076	917		1,059.9	0.025387	
2014	2	0	2	0	3.0818	5.0818	0.360808	63,784,042	0.360808	932		1,038.8	0.034733	
2015	0	0	0	0	3.0630	3.0630	0.217473	56,815,357	0.217473	951		930.5	0.023372	
2016	0	0	0	0	2.9557	2.9557	0.209855	49,731,072	0.209855	978		798.9	0.026268	
2017	0	0	0	0	3.8611	3.8611	0.274138	59,234,540	0.274138	995		908.0	0.030191	
2018	0	0	0	0	4.7427	4.7427	0.336732	65,973,820	0.336732	1,025		981.9	0.034294	
TOTAL	9	0	4	5	28.3258	32.3258	2.295132	594,661,773	2.295132			9,876.9	0.234159	
Average													0.023416	0.023266

GRAND TOTAL

YEAR	Reported	Awarded	Pending	Denied	IBNR	IBNR + Pending	0.071 Award Ratio	Payroll	Expected Ultimate Awarded	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years	
2009	10	1	0	9	10.6867	10.6867	0.758756	229,498,510	1.755115	836		4,124.0	0.042559	
2010	10	0	3	7	14.5538	17.5538	1.246318	268,411,486	1.250786	845		4,706.5	0.026576	
2011	14	1	1	12	19.8949	20.8949	1.483535	323,119,308	2.553891	858		5,573.5	0.045822	
2012	17	2	1	14	23.4039	24.4039	1.732678	323,960,001	3.767714	888		5,376.0	0.070084	
2013	15	2	4	9	24.4237	28.4237	2.018081	293,506,562	4.168518	917		4,664.7	0.089363	
2014	21	1	4	16	32.0319	36.0319	2.558263	321,754,757	3.157846	932		4,917.0	0.064223	
2015	26	1	3	22	28.9783	31.9783	2.270459	261,874,410	2.852204	951		3,982.1	0.071626	
2016	9	0	1	8	27.2375	28.2375	2.004865	217,828,634	1.797852	978		3,212.6	0.055963	
2017	6	0	1	5	43.1907	44.1907	3.137541	285,631,355	2.343065	995		4,030.5	0.058133	
2018	3	0	1	2	51.7551	52.7551	3.745614	300,346,902	2.779381	1,025		4,115.1	0.067541	
TOTAL	131	8	19	104	276.1565	295.1565	20.956112	2,825,931,925	26.426372			44,702.0	0.591890	
Average													0.059189	0.060603

Source: Claim counts - CMCRB OD Database as of 4/30/2019

IBNR: Exhibit VIII-C

Payroll: Exhibit X-A

The Award Ratio is equal to Awarded ÷ (Awarded plus Denied). Other Classes use the Total Award Ratio: 0.071=08 / [08 + 104]

The Wage Adjustment Factor was derived from CMCRB data. See Exhibit X-G

Estimated Miner Years = Payroll / (SAWW x Adj. Factor x 52)

Frequency per 100 Miner Years = (Expected Ult. Awarded / Est. Miner Years) x 100

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Exhibit VIII-C-1

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

Reported Churns		Incremental Frequency and IBNR																									
		Year																									
Months	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
12	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
24	1	2	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
36	1	2	1	0	0	0	0	0	1	2	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0
48	1	2	1	0	0	0	0	0	1	2	0	0	0	0	1	0	0	1	0	2	0	1	0	0	0	0	0
60	2	2	1	0	0	0	0	1	1	2	0	0	0	0	1	0	0	1	0	2	0	2	0	0	0	0	0
72	2	2	1	1	0	0	0	1	1	3	0	0	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
84	2	2	1	1	0	0	0	1	1	4	0	0	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
96	2	2	1	1	0	0	0	1	1	4	0	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
108	2	2	1	1	0	0	0	1	1	4	0	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
120	2	2	1	1	0	0	0	1	1	4	0	1	0	0	1	0	1	1	1	0	2	0	2	0	2	0	0
132	2	2	1	1	0	0	0	1	1	4	0	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
144	2	2	1	1	0	0	0	1	1	4	0	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
156	2	2	1	2	0	0	0	2	1	4	1	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
168	2	2	1	2	0	0	0	2	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
180	2	2	1	2	0	0	1	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
192	2	2	1	2	0	0	1	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
204	2	2	1	2	0	0	1	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
216	2	2	1	2	0	0	2	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
228	2	2	1	2	0	0	2	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0
240	2	2	1	2	0	0	2	3	1	4	2	1	0	0	1	0	1	1	0	2	0	2	0	2	0	0	0

[illegible]

Payroll	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
(\$Millions)	0.93280	1.18200	1.31068	1.49352	1.61270	1.57161	1.76229	1.81416	1.37016	1.63652	1.38655	1.35427	1.34532	1.41757	1.44252	1.66254	2.13671	1.33587	1.29959	1.25794	1.02926	0.38188	0.25881	0.25434	0.16376	0.25238	0.18335			
																												<u>Average</u>	<u>Smoothed</u>	
12-24														0.00000	0.69323	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05333	0.20143	
24-36													0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06115	0.14938	
36-48												0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06115	0.08605	
48-60											0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.20143	0.08300	
60-72										0.61105	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.46801	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08300	0.06115	
72-84									0.00000	0.61105	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04700	0.06115	
84-96								0.00000	0.00000	0.00000	0.00000	0.73841	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05680	0.05680	
96-108							0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05674	
108-120					0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05548	
120-132				0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05333	
132-144				0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04700	
144-156			0.00000	0.66956	0.00000	0.00000	0.00000	0.00000	0.55122	0.00000	0.00000	0.72121	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.14938	0.00000
156-168		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.72121	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05548	0.00000
168-180	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.56744	0.55122	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.08605	0.00000
180-192	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
192-204	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
204-216	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.56744	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.05674	0.00000
216-228	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
228-240	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
																												<u>0.00000</u>	<u>0.00000</u>	

[illegible]

Run Date: September 23, 2019 - 09:37:36 AM

PAB
Effective Date - April 01, 2020
111,154.106850

COAL MINE COMPENSATION RATING BUREAU
FEDERAL OCCUPATIONAL DISEASE
BITUMINOUS UNDERGROUND (0158)

Exhibit VIII-C-2

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

Reported Claims		Incremental Frequency and IBNR																											
		Year																											
Months	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
12	2	1	4	3	0	0	1	2	2	1	1	0	0	0	1	0	0	0	0	2	1	2	3	6	4	3	3		
24	4	1	4	3	2	1	2	4	4	1	2	0	0	0	1	0	1	1	2	2	3	3	6	10	5	4			
36	4	2	7	5	2	4	5	6	4	2	4	0	1	0	1	2	1	1	2	2	4	3	10	14	7				
48	8	3	8	6	2	5	5	7	4	2	5	0	2	0	1	2	1	4	2	2	4	3	12	18					
60	10	4	9	7	3	6	5	7	4	3	6	0	2	0	1	3	1	4	2	4	4	3	15						
72	13	4	9	8	4	7	5	7	4	4	6	0	2	0	1	3	1	5	3	4	4	4							
84	13	4	9	8	4	7	5	7	5	4	6	0	2	1	1	3	1	5	4	6	5								
96	13	5	9	8	5	7	5	8	5	4	7	0	2	1	1	4	1	5	4	6									
108	14	5	11	8	5	7	5	9	5	6	7	1	2	1	1	4	1	5	5										
120	18	5	11	8	5	7	5	10	5	6	11	1	2	1	1	4	1	5											
132	18	5	11	8	5	8	5	11	7	7	11	1	2	1	1	4	1												
144	18	6	11	8	5	9	5	15	10	7	13	1	2	1	1	4													
156	18	6	11	8	5	9	5	16	10	7	15	1	3	1	2														
168	19	6	11	9	5	9	6	16	13	7	16	1	3	1															
180	19	7	12	9	5	9	6	17	20	7	17	1	3																
192	20	7	13	9	5	9	7	18	33	7	17	1																	
204	20	8	13	10	6	9	7	19	35	7	20																		
216	20	8	14	10	8	10	10	19	38	8																			
228	22	9	15	10	8	11	10	20	46																				
240	24	9	17	10	8	12	10	22																					

Incremental Changes	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240
12-24																			
24-36																			
36-48																			
48-60																			
60-72																			
72-84																			
84-96																			
96-108																			
108-120																			
120-132																			
132-144																			
144-156																			
156-168																			
168-180																			
180-192																			
192-204																			
204-216																			
216-228																			
228-240																			

Payroll (\$Millions)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average	Smoothed
12-24	63.40130	52.75653	60.59094	65.27115	75.22304	70.39669	61.08733	58.68524	47.52056	48.52263	40.83800	36.49841	46.07390	66.27576	70.46594	79.90427	101.35398	101.34814	125.39358	148.48571	153.61891	145.14625	183.43195	140.57028	118.54548	172.80084	179.74657	0.00882	0.02962
24-36													0.02170	0.00000	0.00000	0.02503	0.00000	0.00000	0.00000	0.00651	0.00000	0.02181	0.02846	0.01687		0.00579		0.00926	0.02827
36-48												0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.02960	0.00000	0.00000	0.00000	0.00000	0.02846				0.00697	0.01902	
48-60											0.02449	0.00000	0.00000	0.00000	0.00000	0.01251	0.00000	0.00000	0.00000	0.01347	0.00000	0.00000	0.01635				0.00514	0.01725	
60-72										0.02061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00987	0.00797	0.00000	0.00000	0.00000	0.00689					0.00349	0.01638	
72-84									0.02104	0.00000	0.00000	0.00000	0.00000	0.01509	0.00000	0.00000	0.00000	0.00000	0.00797	0.01347	0.00651						0.00493	0.01496	
84-96								0.01704	0.00000	0.00000	0.02449	0.00000	0.00000	0.00000	0.00000	0.01251	0.00000	0.00000	0.00000	0.00000	0.00000						0.00416	0.01411	
96-108							0.00000	0.01704	0.00000	0.04122	0.00000	0.02740	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00797								0.00720	0.00926	
108-120								0.00000	0.01704	0.00000	0.09795	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000							0.00885	0.00918	
120-132					0.00000	0.01421	0.00000	0.01704	0.04209	0.02061	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000								0.00723	0.00885	
132-144				0.00000	0.00000	0.01421	0.00000	0.06816	0.06313	0.00000	0.04897	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000									0.01496	0.00882	
144-156			0.00000	0.00000	0.00000	0.00000	0.00000	0.01704	0.00000	0.00000	0.04897	0.00000	0.02170	0.00000	0.01419													0.00784	0.00784
156-168		0.00000	0.00000	0.01532	0.00000	0.00000	0.01637	0.00000	0.06313	0.00000	0.02449	0.00000	0.00000	0.00000													0.00918	0.00723	
168-180	0.00000	0.01895	0.01650	0.00000	0.00000	0.00000	0.00000	0.01704	0.14730	0.00000	0.02449	0.00000	0.00000														0.01725	0.00720	
180-192	0.01577	0.00000	0.01650	0.00000	0.00000	0.00000	0.01637	0.01704	0.27357	0.00000	0.00000	0.00000															0.02827	0.00697	
192-204	0.00000	0.01895	0.00000	0.01532	0.01329	0.00000	0.00000	0.01704	0.04209	0.00000	0.07346																0.01638	0.00514	
204-216	0.00000	0.00000	0.01650	0.00000	0.02659	0.01421	0.04911	0.00000	0.06313	0.02061																	0.01902	0.00493	
216-228	0.03155	0.01895	0.01650	0.00000	0.00000	0.01421	0.00000	0.01704	0.16835																		0.02962	0.00416	
228-240	0.03155	0.00000	0.03301	0.00000	0.00000	0.01421	0.00000	0.03408																			0.01411	0.00349	
Total=																											0.22268	0.22268	

IBNR Claims	Cumulative Factor	0.00349	0.00765	0.01258	0.01772	0.02469	0.03189	0.03912	0.04696	0.05578	0.06463	0.07381	0.08307	0.09718	0.11214	0.12852	0.14577	0.16479	0.19306	0.22268
times Payroll		0.16585	0.37120	0.51374	0.64675	1.13756	2.11353	2.75663	3.75230	5.65353	6.55013	9.25530	12.33471	14.92869	16.27670	23.57467	20.49093	19.53511	33.36093	40.02597

Source: Coal Mine Compensation Rating Bureau Database as of 4-30-2019

Payrolls: Exhibit X-A-3

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\[2019-08-C.xlsx]VIII-C-2

Run Date: September 23, 2019 - 09:37:36 AM

COAL MINE COMPENSATION RATING BUREAU
FEDERAL OCCUPATIONAL DISEASE
ANTHRACITE SURFACE (0153)

Exhibit VIII-C-3

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

Reported Claims		Incremental Frequency and IBNR																										
		Year																										
Months	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
12	5	10	11	2	5	4	4	0	1	2	3	0	2	1	0	2	0	0	0	0	0	1	1	0	1	1	0	
24	10	14	14	6	6	7	6	0	4	2	3	1	3	2	0	2	2	0	0	1	0	1	1	1	2	1		
36	11	16	17	10	6	7	6	0	4	2	4	3	3	2	0	2	2	1	0	1	1	1	1	1	2			
48	13	21	19	12	6	8	7	0	5	4	5	3	3	2	1	2	2	1	0	1	1	1	1	1				
60	14	21	21	13	6	8	7	0	5	5	5	3	4	2	1	2	2	1	0	1	1	2	1					
72	14	22	21	13	8	8	8	0	5	5	6	3	4	2	1	2	2	2	0	1	1	3						
84	14	23	21	15	8	8	8	0	5	5	6	4	4	2	1	2	2	2	0	1	1							
96	14	24	21	16	9	8	8	0	5	5	6	4	4	2	1	2	2	2	2	1								
108	14	24	21	19	9	8	8	0	5	6	6	4	4	2	1	2	2	2	2									
120	14	24	22	21	9	8	8	1	7	6	6	4	4	2	1	2	2	2	2									
132	14	24	23	21	9	8	8	1	7	7	6	4	4	2	1	2	2	2										
144	14	24	23	21	9	8	9	1	7	7	6	4	4	2	1	2												
156	14	24	23	21	9	9	9	1	7	7	6	4	4	2	1													
168	14	25	24	23	9	9	9	1	7	7	6	4	4	2														
180	14	25	24	24	10	9	9	1	7	7	6	4	4															
192	14	25	24	24	10	9	9	1	7	7	6	4																
204	14	25	24	24	11	9	9	1	10	7	6																	
216	14	25	24	24	11	9	9	1	10	7																		
228	15	25	24	24	11	9	9	1	10																			
240	15	25	25	24	11	9	9	1																				

Incremental Changes	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240
12-24																			
24-36																			
36-48																			
48-60																			
60-72																			
72-84																			
84-96																			
96-108																			
108-120																			
120-132																			
132-144																			
144-156																			
156-168																			
168-180																			
180-192																			
192-204																			
204-216																			
216-228																			
228-240																			

Ayroll	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
(\$Millions)	29.47612	30.10339	30.21045	20.28889	16.19217	17.78314	17.37629	18.44114	16.80781	12.92375	11.04657	11.92821	12.35973	12.14091	12.06532	14.86656	16.22023	15.89353	13.31919	19.50743	24.73471	20.72001	18.91134	22.23435	19.25711	19.09463	18.33274	Average	Smoothed	
12-24															0.08237	0.00000		0.12330	0.00000	0.05126	0.00000	0.00000	0.00000	0.04498	0.05193	0.00000		0.02722	0.02722	
24-36													0.00000	0.00000	0.00000	0.00000	0.00000	0.06292	0.00000	0.00000	0.04043	0.00000	0.00000	0.00000	0.00000		0.00795	0.02184		
36-48											0.00000	0.00000	0.08288	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00638	0.01552		
48-60										0.00000	0.00000	0.08091	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.04826	0.00000		0.00994	0.01332			
60-72										0.00000	0.09053	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.06292	0.00000	0.00000	0.00000	0.00000	0.04826			0.01552	0.01268			
72-84									0.00000	0.00000	0.00000	0.08383	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000		0.00645	0.01155			
84-96								0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.15016	0.00000					0.01155	0.00994			
96-108							0.00000	0.00000	0.00000	0.07738	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000				0.00595	0.00854			
108-120					0.00000	0.00000	0.00000	0.05423	0.11899	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000						0.01332	0.00795			
120-132						0.00000	0.00000	0.00000	0.07738	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000							0.00595	0.00645			
132-144				0.00000	0.00000	0.00000	0.05755	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000									0.00443	0.00638			
144-156			0.00000	0.00000	0.00000	0.05623	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										0.00433	0.00595			
156-168		0.03322	0.03310	0.09858	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000										0.01268	0.00595			
168-180	0.00000	0.00000	0.00000	0.04929	0.06176	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000											0.00854	0.00443			
180-192	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000												0.00000	0.00433			
192-204	0.00000	0.00000	0.00000	0.00000	0.06176	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000													0.02184	0.00414			
204-216	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000															0.00000	0.00377			
216-228	0.03393	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000																0.00377	0.00000			
228-240	0.00000	0.00000	0.03310	0.00000	0.00000	0.00000	0.00000	0.00000																			0.00414	0.00000		
Total=																													0.16996	0.16996

IBNR Claims	0.00000	0.00000	0.00377	0.00791	0.01224	0.01667	0.02262	0.02857	0.03495	0.04140	0.04935	0.05789	0.06783	0.07938	0.09206	0.10538	0.12090	0.14274	0.16996
Cumulative Factor	0.00000	0.00000	0.04165	0.09435	0.15128	0.20239	0.27292	0.42474	0.56690	0.65799	0.65730	1.12929	1.67776	1.64475	1.74098	2.34306	2.32818	2.72557	3.11583
times Payroll																			

Source: Coal Mine Compensation Rating Bureau Database as of 4-30-2019

Payrolls: Exhibit X-A-3

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Run Date: September 23, 2019 - 09:37:36 AM

Exhibit VIII-C-4

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

[illegible][illegible]

Ayroll	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
(\$Millions)	100.99938	94.55659	92.46464	78.75261	77.82841	67.90579	63.65156	54.16227	49.93562	58.15133	53.50209	47.87374	56.21730	64.87156	63.79850	64.80809	74.60123	63.30670	74.25518	87.73051	77.89050	62.71806	55.36862	42.00009	30.13122	34.24896	36.11043			
12-24														0.00000	0.01567	0.00000	0.01340	0.00000	0.00000	0.01140	0.06419	0.00000	0.01806	0.04762	0.00000		0.00000			
24-36													0.00000	0.01542	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
36-48														0.00000	0.01567	0.01543	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01594	0.00000	0.00000		0.00000	0.00000	0.00000	
48-60											0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
60-72										0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
72-84									0.00000	0.01720	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01543	0.04021	0.00000	0.01347	0.00000	0.00000	0.01594	0.00000	0.00000		0.00000	0.00000	0.00000	
84-96								0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
96-108							0.01571	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01580	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
108-120					0.01285	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01869	0.02089	0.01779	0.00000	0.00000	0.01543	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
120-132							0.00000	0.00000	0.00000	0.00000	0.01720	0.01869	0.00000	0.00000	0.00000	0.00000	0.00000	0.01340	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
132-144				0.00000	0.00000	0.00000	0.01571	0.00000	0.00000	0.00000	0.00000	0.00000	0.02089	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
144-156			0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
156-168			0.00000	0.01081	0.01270	0.01285	0.00000	0.00000	0.00000	0.00000	0.00000	0.01720	0.00000	0.00000	0.00000	0.01542														
168-180	0.00000	0.01058	0.00000	0.00000	0.00000	0.01285	0.00000	0.00000	0.00000	0.00000	0.00000	0.01720	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
180-192	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01473	0.00000	0.00000	0.00000	0.02003	0.03439	0.00000	0.00000																
192-204	0.00990	0.02115	0.01081	0.00000	0.00000	0.00000	0.01473	0.01571	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000		0.00000	0.00000	0.00000	
204-216	0.00990	0.00000	0.00000	0.00000	0.02540	0.01285	0.00000	0.01571	0.01846	0.04005	0.00000																			
216-228	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.01571	0.01846	0.00000																				
228-240	0.00990	0.00000	0.00000	0.00000	0.01285	0.00000	0.00000	0.00000																						
																							</							

[illegible]

Payrolls: Exhibit X-A-3

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Run Date: September 23, 2019 - 09:37:36 AM

PAB
Effective Date - April 01, 2020
114,836.761030

COAL MINE COMPENSATION RATING BUREAU
FEDERAL OCCUPATIONAL DISEASE
OTHER CLASSIFICATIONS - FEDERAL

Exhibit VIII-C-5

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

Reported Claims		Incremental Frequency and IBNR																										
Months	Year																											
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
12	0	1	0	0	0	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	1	1	0	0	0	2	2	1	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	
36	1	1	0	0	0	4	2	3	1	0	1	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	
48	1	1	0	0	0	4	2	3	1	0	1	0	1	1	0	0	0	0	0	1	1	2	0	0	0	0	0	
60	2	1	0	0	0	5	2	4	1	0	1	0	1	1	0	0	0	0	0	1	1	2	2	0	0	0	0	
72	2	1	0	0	0	6	2	4	1	0	2	0	1	1	0	0	0	1	0	1	2	2	0	0	0	0	0	
84	2	1	0	0	0	6	3	4	1	0	2	1	1	1	0	0	0	1	1	1	1	2	0	0	0	0	0	
96	2	1	0	0	0	6	3	4	1	0	2	1	1	2	0	0	0	1	1	1	2	0	0	0	0	0	0	
108	2	1	0	0	0	6	3	4	1	0	2	1	1	2	1	1	0	1	1	1	1	2	2	0	0	0	0	
120	2	1	0	0	0	6	3	4	1	0	2	1	1	2	2	1	0	1	1	1	1	0	0	0	0	0	0	
132	2	1	0	0	0	6	3	4	1	0	2	1	1	2	2	1	0	1	1	1	1	0	0	0	0	0	0	
144	2	1	0	0	0	6	3	5	1	0	2	1	1	2	3	1	0	1	1	1	1	0	0	0	0	0	0	
156	2	1	0	0	0	6	3	5	1	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
168	2	1	0	0	0	6	3	5	1	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
180	2	1	0	0	0	7	3	5	1	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
192	2	1	0	0	0	7	3	5	1	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
204	2	1	0	0	0	7	3	5	2	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
216	2	1	0	0	0	7	3	5	3	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
228	2	1	0	0	0	7	3	5	3	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	
240	2	1	0	0	0	8	3	5	3	0	2	1	1	2	3	0	0	1	1	1	1	0	0	0	0	0	0	

Payroll (\$Millions)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	47.49607	58.74791	60.28848	60.34187	62.83464	73.62183	31.35678	30.45185	29.53686	30.95943	32.09811	36.30165	44.70078	51.98593	53.57718	59.51941	55.25499	47.61428	54.14396	66.13772	66.68662	64.54036	63.78404	56.81536	49.73107	59.23454	65.97382

Exhibit VIII-C-6

Claims with File Dates on or before 12-31-2018, Valued as of 4-30-2019

[illegible]

Incremental Changes

[illegible]

Payroll	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
(\$Millions)	242.30567	237.34642	244.86519	226.14804	233.69096	231.27906	175.23425	163.55466	145.17101	152.19366	138.87132	133.95628	160.69703	196.69173	201.34946	220.76087	249.56714	229.49852	268.41150	323.11931	323.96000	293.50656	321.75476	261.87442	217.82864	285.63135	300.34691
12-24														0.00508	0.00993	0.00000	0.01603	0.00436	0.00745	0.00619	0.02161	0.00681	0.01243	0.02673	0.00918	0.00350	
24-36													0.00622	0.00508	0.00000	0.00906	0.00000	0.00436	0.00000	0.00617	0.00000	0.01243	0.02673	0.00918			
36-48												0.00000	0.00622	0.00000	0.00993	0.00453	0.00000	0.01307	0.00000	0.00619	0.00309	0.00681	0.00622	0.01909			
48-60											0.00720	0.00000	0.00622	0.00000	0.00000	0.00000	0.00453	0.00000	0.00928	0.00000	0.00681	0.02176					
60-72											0.01440	0.00000	0.00000	0.00000	0.00000	0.00453	0.01603	0.01307	0.00745	0.00000	0.00309	0.01022					
72-84									0.00689	0.01314	0.00000	0.01493	0.00000	0.00508	0.00993	0.00000	0.00401	0.00000	0.00745	0.00928	0.00617						
84-96								0.00611	0.00000	0.00000	0.00720	0.00747	0.00000	0.00508	0.00000	0.00453	0.00000	0.00000	0.00745	0.00000							
96-108							0.00571	0.00000	0.01971	0.00000	0.01971	0.00000	0.01493	0.00000	0.00497	0.00453	0.00000	0.00436	0.00373								
108-120						0.00432	0.00000	0.01223	0.01378	0.00000	0.03600	0.00747	0.00622	0.00000	0.00497	0.00453	0.00000	0.00000									
120-132					0.00428	0.00432	0.00000	0.00611	0.01378	0.01971	0.00720	0.00000	0.00000	0.00000	0.00000	0.00401											
132-144				0.00000	0.00000	0.00432	0.01141	0.03057	0.02067	0.00000	0.01440	0.00747	0.00000	0.00000	0.00497	0.00000											
144-156			0.00000	0.00000	0.00442	0.00000	0.00432	0.00000	0.01223	0.00000	0.02160	0.00747	0.00622	0.00000	0.00497												
156-168		0.00421	0.00817	0.01769	0.00428	0.00000	0.00571	0.00000	0.02067	0.00657	0.01440	0.00000	0.00000	0.00508													
168-180	0.00000	0.00843	0.00408	0.00442	0.00856	0.00432	0.00571	0.01223	0.04822	0.00657	0.00720	0.00000	0.00000														
180-192	0.00413	0.00000	0.00408	0.00000	0.00000	0.00432	0.00571	0.00611	0.09644	0.01314	0.00000	0.00000															
192-204	0.00413	0.01264	0.00408	0.00442	0.00856	0.00432	0.00571	0.00611	0.04133	0.00000	0.02160																
204-216	0.00413	0.00000	0.00408	0.00884	0.01284	0.00432	0.02853	0.00611	0.04133	0.00657																	
216-228	0.01238	0.00421	0.00408	0.00000	0.00000	0.00432	0.00571	0.01223	0.05511																		
228-240	0.01238	0.00000	0.01225	0.00000	0.00428	0.00865	0.00000	0.01223																			

IBNR Claims

[illegible]

Source: Counts and Payrolls: Sum of Exhibits VIII-C-1 thru VIII-C-5

Exhibit VIII-C-7

CLASSIFICATION

Source: IBNR Factor - Exhibit VIII-C-6
Adjustment Factor - Judgement
Payrolls: Exhibit X-A-3
 $IBNR = A \text{ times } B \text{ times } C$

**COAL MINE COMPENSATION RATING BUREAU
FEDERAL OCCUPATIONAL DISEASE
ALL CLASSIFICATIONS**

Exhibit VIII-C-8

IBNR By Class

		CLASSIFICATION					
			Anthracite	Bituminous	Anthracite	Bituminous	
A. IBNR Factor		Coke	Auger	Co-Gen	Co-Gen	Prep Plant	Prep Plant
	Year	0154	0157	0181	0182	0183	0184
	1999	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2000	0.0029	0.0029	0.0029	0.0029	0.0029	0.0029
	2001	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072
	2002	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118
	2003	0.0165	0.0165	0.0165	0.0165	0.0165	0.0165
	2004	0.0214	0.0214	0.0214	0.0214	0.0214	0.0214
	2005	0.0272	0.0272	0.0272	0.0272	0.0272	0.0272
	2006	0.0331	0.0331	0.0331	0.0331	0.0331	0.0331
	2007	0.0393	0.0393	0.0393	0.0393	0.0393	0.0393
	2008	0.0456	0.0456	0.0456	0.0456	0.0456	0.0456
B. Adjustment Factor		0.2000	0.4000	0.5000	0.5000	1.0000	0.5000
C. Payroll Per \$1M							
	1999	12.29348	1.13689	3.60431	1.49428	1.23112	10.69178
	2000	12.09257	1.20588	4.47346	1.87072	1.31947	8.57476
	2001	10.37583	1.42913	4.66181	2.12133	2.21630	10.15503
	2002	10.48501	1.15084	5.65877	2.38612	2.32282	10.09455
	2003	11.53408	1.10222	7.00962	3.05252	3.40800	10.19521
	2004	12.04913	1.05880	7.35151	6.37448	4.40665	13.46020
	2005	12.86098	1.02654	7.85529	8.52475	5.17007	16.54831
	2006	12.73739	1.06683	8.41253	9.42358	4.88588	17.05097
	2007	13.66993	1.12116	9.18671	10.82914	5.81729	18.89519
	2008	9.76115	2.50676	7.52140	8.48189	5.73354	21.25026
D. IBNR							
	1999	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2000	0.0070	0.0014	0.0065	0.0027	0.0038	0.0125
	2001	0.0149	0.0041	0.0168	0.0076	0.0160	0.0366
	2002	0.0247	0.0054	0.0333	0.0140	0.0273	0.0594
	2003	0.0380	0.0073	0.0578	0.0252	0.0562	0.0840
	2004	0.0516	0.0091	0.0787	0.0682	0.0943	0.1441
	2005	0.0699	0.0112	0.1068	0.1159	0.1406	0.2250
	2006	0.0843	0.0141	0.1392	0.1560	0.1617	0.2822
	2007	0.1075	0.0176	0.1806	0.2129	0.2287	0.3715
	2008	0.0891	0.0457	0.1716	0.1935	0.2616	0.4847

Source: IBNR Factor - Exhibit VIII-C-6
Adjustment Factor - Judgement
Payrolls: Exhibit X-A-3
IBNR = A times B times C

Occupational Disease
Federal Benefits

TABLE OF MONTHLY BLACK LUNG BENEFIT RATES

Time Period			Claimant Benefit	Dependent Benefit	Yearly Percentage Increase
10/1/1981	to	9/30/1982	293.20	146.60	
10/1/1982	to	12/31/1983	304.90	152.50	4.0%
1/1/1984	to	12/31/1984	317.10	158.60	4.0%
1/1/1985	to	12/31/1985	328.20	164.10	3.5%
1/1/1986	to	12/31/1986	328.20	164.10	0.0%
1/1/1987	to	12/31/1987	338.00	169.00	3.0%
1/1/1988	to	12/31/1988	344.80	172.40	2.0%
1/1/1989	to	12/31/1989	358.90	179.50	4.1%
1/1/1990	to	12/31/1990	371.80	185.90	3.6%
1/1/1991	to	12/31/1991	387.10	193.60	4.1%
1/1/1992	to	12/31/1992	403.30	201.70	4.2%
1/1/1993	to	12/31/1993	418.20	209.10	3.7%
1/1/1994	to	12/31/1994	427.40	213.70	2.2%
1/1/1995	to	12/31/1995	427.40	213.70	0.0%
1/1/1996	to	12/31/1996	435.10	217.60	1.8%
1/1/1997	to	12/31/1997	445.10	222.60	2.3%
1/1/1998	to	12/31/1998	455.10	227.60	2.2%
1/1/1999	to	12/31/1999	469.50	234.80	3.2%
1/1/2000	to	12/31/2000	487.40	243.60	3.8%
1/1/2001	to	12/31/2001	500.50	250.30	2.7%
1/1/2002	to	12/31/2002	518.50	259.30	3.6%
1/1/2003	to	12/31/2003	534.60	267.30	3.1%
1/1/2004	to	12/31/2004	549.00	274.50	2.7%
1/1/2005	to	12/31/2005	562.80	281.30	2.5%
1/1/2006	to	12/31/2006	574.60	287.20	2.1%
1/1/2007	to	12/31/2007	584.40	292.20	1.7%
1/1/2008	to	12/31/2008	599.00	299.00	2.5%
1/1/2009	to	12/31/2009	616.30	308.20	2.9%
1/1/2010	to	12/31/2010	625.60	312.80	1.5%
1/1/2011	to	12/31/2011	625.60	312.80	0.0%
1/1/2012	to	12/31/2012	625.60	312.80	0.0%
1/1/2013	to	12/31/2013	625.60	312.80	0.0%
1/1/2014	to	12/31/2014	631.80	315.90	1.0%
1/1/2015	to	12/31/2015	638.10	319.10	1.0%
1/1/2016	to	12/31/2016	644.50	322.30	1.0%
1/1/2017	to	12/31/2017	651.00	325.40	1.0%
1/1/2018	to	12/31/2018	660.10	330.00	1.4%
1/1/2019	to	12/31/2019	669.30	334.70	1.4%
All Years					Average 2.3%
Last 10 Yrs					Average 0.8%
Last 5 Yrs					Average 1.2%
Last 3 Yrs					Average 1.3%

Selected Benefit Change from	2019	to	2020	1.00%
Selected Benefit Change from	2020	to	2021	1.50%
Selected Benefit Change from	2021	to	2022	2.50%

Selected Average Annual Benefit Change (Last Year's Selection: 2.5%) 2.50%

			Projected Benefit- Claimant	Dependant	Weight
1/1/2020	to	12/31/2020	676.00 a	338.00	28.125%
1/1/2021	to	12/31/2021	686.10 a	343.10	68.750%
1/1/2022	to	12/31/2022	703.30 a	351.70	3.125%
Average Monthly Benefit During the Policy Period Beginning 04/01/2020			683.80 b	341.90	
Average Weekly Benefit During the Policy Period Beginning 04/01/2020			157.80 c	78.90	
Annual (Weekly X 52)			8,205.60	4,102.80	
Annual Miner and Spouse				12,308.40	

- a Previous year's benefit times selected benefit change
b Weighted average of projected benefit levels from 01-01-20 to 12-31-22
c Monthly Benefit times 12 months divided by 52 weeks

Sources: US Department of Labor
Employment Standards Administration
Office of Workers' Compensation Programs
Division of Coal Mine Workers' Compensation

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Anthracite Underground (0160)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
	# 1	# 0	# 0	# 1	# 0.00	# 0.05	# 0.05
2009	-	-	-	-	-	-	-
2010	2	-	-	2	-	0.10	0.10
2011	-	-	-	-	-	-	-
2012	2	-	-	2	-	0.10	0.10
2013	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	5	-	-	5	-	0.25	0.25

Year	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Ultimate Awarded	Ultimate Denied	IBNR	IBNR Awarded	Total Awarded	Payroll	Frequency
	(2)+(5)+(7)	(1)-(8)	IBNR	(10)xAward Ratio	(8)+(11)	(12)/(13) x 1000000	
2009	# 0.05	# 0.95	# 0.1340	# 0.0193	# 0.0693	\$ 1,335,866	0.0519
2010	-	-	0.2025	0.0292	0.0292	1,299,588	0.0225
2011	0.10	1.90	0.2674	0.0386	0.1386	1,257,944	0.1102
2012	-	-	0.2772	0.0400	0.0400	1,029,260	0.0389
2013	0.10	1.90	0.1262	0.0182	0.1182	381,876	0.3096
2014	-	-	0.1014	0.0146	0.0146	258,809	0.0565
2015	-	-	0.1207	0.0174	0.0174	254,336	0.0685
2016	-	-	0.0918	0.0132	0.0132	163,760	0.0809
2017	-	-	0.1792	0.0259	0.0259	252,383	0.1025
2018	-	-	0.1671	0.0241	0.0241	183,346	0.1315
Total	0.25	4.75	1.6676	0.2406	0.4906	\$ 6,417,168	0.0765

Year	(15)	(16)	(17)	(18)
	Statewide Average	Adjustment	Estimated	Frequency
	Weekly Wage	Factor	Miner Years	Claims per 100 Miner Years
2009	836	1.0720	28.7	0.2416
2010	845	1.0720	27.6	0.1059
2011	858	1.0720	26.3	0.5269
2012	888	1.0720	20.8	0.1923
2013	917	1.0720	7.5	1.5762
2014	932	1.0720	5.0	0.2925
2015	951	1.0720	4.8	0.3629
2016	978	1.0720	3.0	0.4417
2017	995	1.0720	4.6	0.5622
2018	1,025	1.0720	3.2	0.7537
Total			131.5	0.3731

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 1

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

12,904,111.140254

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Bituminous Underground (0158)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 5	# 0	# 0	# 5	# 0.00	# 0.25	# 0.25
2010	5	-	1	4	0.30	0.20	0.20
2011	6	1	-	5	-	0.25	0.25
2012	5	-	-	5	-	0.25	0.25
2013	4	1	-	3	-	0.15	0.15
2014	15	-	1	14	0.30	0.70	0.70
2015	18	-	3	15	0.90	0.75	0.75
2016	7	-	-	7	-	0.35	0.35
2017	4	-	1	3	0.30	0.15	0.15
2018	3	-	1	2	0.30	0.10	0.10
Total	72	2	7	63	2.10	3.15	3.15

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
2009	# 0.25	# 4.75	# 6.5501	# 0.9452	# 1.1952	\$ 101,348,140	0.0118
2010	0.50	4.50	9.2553	1.3355	1.8355	125,393,576	0.0146
2011	1.25	4.75	12.3347	1.7799	3.0299	148,485,709	0.0204
2012	0.25	4.75	14.9287	2.1542	2.4042	153,618,908	0.0157
2013	1.15	2.85	16.2767	2.3487	3.4987	145,146,253	0.0241
2014	1.00	14.00	23.5747	3.4018	4.4018	183,431,952	0.0240
2015	1.65	16.35	20.4909	2.9568	4.6068	140,570,275	0.0328
2016	0.35	6.65	19.5351	2.8189	3.1689	118,545,477	0.0267
2017	0.45	3.55	33.3609	4.8140	5.2640	172,800,836	0.0305
2018	0.40	2.60	40.0260	5.7757	6.1757	179,746,573	0.0344
Total	7.25	64.75	196.3331	28.3309	35.5809	\$ 1,469,087,699	0.0242

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
2009	836	1.5490	1,505.1	0.0794
2010	845	1.5490	1,842.3	0.0996
2011	858	1.5490	2,148.5	0.1410
2012	888	1.5490	2,147.7	0.1119
2013	917	1.5490	1,965.1	0.1780
2014	932	1.5490	2,443.5	0.1801
2015	951	1.5490	1,835.1	0.2510
2016	978	1.5490	1,504.8	0.2106
2017	995	1.5490	2,156.1	0.2441
2018	1,025	1.5490	2,177.1	0.2837
Total			19,725.3	0.1804

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 2

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

2,938,285,294.743220

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Anthracite Surface (0153)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 2	# 1	# 0	# 1	# 0.00	# 0.05	# 0.05
2010	2	-	-	2	-	0.10	0.10
2011	1	-	-	1	-	0.05	0.05
2012	1	-	-	1	-	0.05	0.05
2013	3	1	2	-	0.60	-	-
2014	1	-	-	1	-	0.05	0.05
2015	1	-	-	1	-	0.05	0.05
2016	2	-	1	1	0.30	0.05	0.05
2017	1	-	-	1	-	0.05	0.05
2018	-	-	-	-	-	-	-
Total	14	2	3	9	0.90	0.45	0.45

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 1.05	# 0.95	# 0.6580	# 0.0949	# 1.1449	\$ 15,893,528	0.0720
	0.10	1.90	0.6573	0.0948	0.1948	13,319,185	0.0146
2010	0.05	0.95	1.1293	0.1630	0.2130	19,507,428	0.0109
2011	0.05	0.95	1.6778	0.2421	0.2921	24,734,711	0.0118
2012	1.60	1.40	1.6448	0.2373	1.8373	20,720,014	0.0887
2013	0.05	0.95	1.7410	0.2512	0.3012	18,911,339	0.0159
2014	0.05	0.95	2.3431	0.3381	0.3881	22,234,350	0.0175
2015	0.35	1.65	2.3282	0.3360	0.6860	19,257,107	0.0356
2016	0.05	0.95	2.7256	0.3933	0.4433	19,094,634	0.0232
2017	-	-	3.1158	0.4496	0.4496	18,332,737	0.0245
2018	-	-	3.1158	0.4496	0.4496	18,332,737	0.0245
Total	3.35	10.65	18.0207	2.6004	5.9504	\$ 192,005,033	0.0310

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836	1.0720	341.0	0.3358
	845	1.0720	282.8	0.0689
2010	858	1.0720	407.9	0.0522
2011	888	1.0720	499.7	0.0585
2012	917	1.0720	405.3	0.4533
2013	932	1.0720	364.0	0.0828
2014	951	1.0720	419.4	0.0925
2015	978	1.0720	353.2	0.1942
2016	995	1.0720	344.3	0.1288
2017	1,025	1.0720	320.9	0.1401
2018	-	-	-	-
Total	-	-	3,738.5	0.1592

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 3

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Run Date: September 23, 2019 - 03:08:44 PM

Effective Date - April 01, 2020

384,087,155.719264

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Bituminous Surface (0156)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 1	# 0	# 0	# 1	# 0.00	# 0.05	# 0.05
2010	2	-	1	1	0.30	0.05	0.05
2011	4	-	1	3	0.30	0.15	0.15
2012	9	2	1	6	0.30	0.30	0.30
2013	4	-	1	3	0.30	0.15	0.15
2014	3	1	1	1	0.30	0.05	0.05
2015	7	1	-	6	-	0.30	0.30
2016	-	-	-	-	-	-	-
2017	1	-	-	1	-	0.05	0.05
2018	-	-	-	-	-	-	-
Total	31	4	5	22	1.50	1.10	1.10
Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 0.05	# 0.95	# 2.0246	# 0.2921	# 0.3421	\$ 63,306,695	0.0054
	0.35	1.65	2.8024	0.4044	0.7544	74,255,177	0.0102
2010	0.35	1.65	2.8024	0.4044	0.7544	74,255,177	0.0102
2011	0.45	3.55	3.8663	0.5579	1.0079	87,730,506	0.0115
2012	2.60	6.40	3.9420	0.5688	3.1688	77,890,500	0.0407
2013	0.45	3.55	3.5862	0.5175	0.9675	62,718,061	0.0154
2014	1.35	1.65	3.5331	0.5098	1.8598	55,368,615	0.0336
2015	1.30	5.70	2.9606	0.4272	1.7272	42,000,092	0.0411
2016	-	-	2.3267	0.3357	0.3357	30,131,218	0.0111
2017	0.05	0.95	3.0639	0.4421	0.4921	34,248,962	0.0144
2018	-	-	3.7035	0.5344	0.5344	36,110,426	0.0148
Total	6.60	24.40	31.8093	4.5901	11.1901	\$ 563,760,252	0.0198
Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years			
	836	1.0720	1,358.5	0.0252			
	845	1.0720	1,576.4	0.0479			
2010	845	1.0720	1,576.4	0.0479			
2011	858	1.0720	1,834.3	0.0549			
2012	888	1.0720	1,573.5	0.2014			
2013	917	1.0720	1,226.9	0.0789			
2014	932	1.0720	1,065.7	0.1745			
2015	951	1.0720	792.3	0.2180			
2016	978	1.0720	552.7	0.0607			
2017	995	1.0720	617.5	0.0797			
2018	1,025	1.0720	632.0	0.0846			
Total			11,229.8	0.0996			

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 4

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

1,127,612,723.386580

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Four Standard Classes

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 9	# 1	# 0	# 8	# 0.00	# 0.40	# 0.40
2010	9	-	2	7	0.60	0.35	0.35
2011	13	1	1	11	0.30	0.55	0.55
2012	15	2	1	12	0.30	0.60	0.60
2013	13	2	3	8	0.90	0.40	0.40
2014	19	1	2	16	0.60	0.80	0.80
2015	26	1	3	22	0.90	1.10	1.10
2016	9	-	1	8	0.30	0.40	0.40
2017	6	-	1	5	0.30	0.25	0.25
2018	3	-	1	2	0.30	0.10	0.10
Total	122	8	15	99	4.50	4.95	4.95

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 1.40	# 7.60	# 9.3667	# 1.3516	# 2.7516	\$ 181,884,229	0.0151
	0.95	8.05	12.9175	1.8640	2.8140	214,267,526	0.0131
2010	0.95	8.05	12.9175	1.8640	2.8140	214,267,526	0.0131
2011	1.85	11.15	17.5977	2.5393	4.3893	256,981,587	0.0171
2012	2.90	12.10	20.8257	3.0052	5.9052	257,273,379	0.0230
2013	3.30	9.70	21.6339	3.1218	6.4218	228,966,204	0.0280
2014	2.40	16.60	28.9501	4.1775	6.5775	257,970,715	0.0255
2015	3.00	23.00	25.9153	3.7396	6.7396	205,059,053	0.0329
2016	0.70	8.30	24.2818	3.5039	4.2039	168,097,562	0.0250
2017	0.55	5.45	39.3296	5.6753	6.2253	226,396,815	0.0275
2018	0.40	2.60	47.0124	6.7839	7.1839	234,373,082	0.0307
Total	17.45	104.55	247.8307	35.7620	53.2120	\$ 2,231,270,152	0.0238

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836		3,233.3	0.0851
	845		3,729.1	0.0755
2010	845		3,729.1	0.0755
2011	858		4,417.0	0.0994
2012	888		4,241.7	0.1392
2013	917		3,604.8	0.1781
2014	932		3,878.2	0.1696
2015	951		3,051.6	0.2209
2016	978		2,413.7	0.1742
2017	995		3,122.5	0.1994
2018	1,025		3,133.2	0.2293
Total			34,825.1	0.1528

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Sum of Pages 1 to 4

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 5

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

4,462,680,849.738660

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Coke (0154)

	Counts						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Reported	Awarded	Pending	Denied	Pending Awarded (3) * 30%	Denied Reopened	Denied Awarded
Year	_____	_____	_____	_____	_____	_____	_____
2009	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00
2010	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Ultimate Awarded (2)+(5)+(7)	Ultimate Denied (1)-(8)	IBNR IBNR	IBNR Awarded (10)xAward Ratio	Total Awarded (8)+(11)	Payroll	Frequency (12)/(13) x 1000000
Year	_____	_____	_____	_____	_____	_____	_____
2009	# 0.00	# 0.00	# 0.0540	# 0.0078	# 0.0078	\$ 5,173,552	0.0015
2010	-	-	0.0640	0.0092	0.0092	5,435,658	0.0017
2011	-	-	0.0473	0.0068	0.0068	3,599,086	0.0019
2012	-	-	0.0838	0.0121	0.0121	5,738,105	0.0021
2013	-	-	0.0780	0.0113	0.0113	4,791,910	0.0023
2014	-	-	0.0816	0.0118	0.0118	4,464,398	0.0026
2015	-	-	0.0882	0.0127	0.0127	4,340,376	0.0029
2016	-	-	0.0998	0.0144	0.0144	4,435,066	0.0032
2017	-	-	0.1129	0.0163	0.0163	4,566,113	0.0036
2018	-	-	0.1207	0.0174	0.0174	4,456,795	0.0039
Total	-	-	0.8303	0.1198	0.1198	\$ 47,001,059	0.0025

	(15)	(16)	(17)	(18)
	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years
Year	_____	_____	_____	_____
2009	836	1.0720	111.0	0.0070
2010	845	1.0720	115.4	0.0080
2011	858	1.0720	75.3	0.0091
2012	888	1.0720	115.9	0.0104
2013	917	1.0720	93.7	0.0120
2014	932	1.0720	85.9	0.0137
2015	951	1.0720	81.9	0.0155
2016	978	1.0720	81.4	0.0177
2017	995	1.0720	82.3	0.0198
2018	1,025	1.0720	78.0	0.0223
Total			920.8	0.0130

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 6

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

94,073,431.781157

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Auger (0157)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00
2010	1	-	1	-	0.30	-	-
2011	-	-	-	-	-	-	-
2012	1	-	-	1	-	0.05	0.05
2013	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	2	-	1	1	0.30	0.05	0.05

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
2009	# 0.00	# 0.00	# 0.0198	# 0.0029	# 0.0029	\$ 946,963	0.0030
2010	0.30	0.70	0.0195	0.0028	0.3028	827,496	0.3659
2011	-	-	0.0309	0.0045	0.0045	1,176,255	0.0038
2012	0.05	0.95	0.0236	0.0034	0.0534	808,208	0.0661
2013	-	-	0.0341	0.0049	0.0049	1,046,947	0.0047
2014	-	-	0.0315	0.0045	0.0045	861,590	0.0053
2015	-	-	0.0266	0.0038	0.0038	654,766	0.0059
2016	-	-	0.0177	0.0026	0.0026	392,776	0.0065
2017	-	-	0.0280	0.0040	0.0040	566,324	0.0071
2018	-	-	0.0303	0.0044	0.0044	560,126	0.0078
Total	0.35	1.65	0.2620	0.0378	0.3878	\$ 7,841,451	0.0495

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
2009	836	1.0720	20.3	0.0141
2010	845	1.0720	17.6	1.7205
2011	858	1.0720	24.6	0.0181
2012	888	1.0720	16.3	0.3276
2013	917	1.0720	20.5	0.0240
2014	932	1.0720	16.6	0.0274
2015	951	1.0720	12.4	0.0310
2016	978	1.0720	7.2	0.0355
2017	995	1.0720	10.2	0.0396
2018	1,025	1.0720	9.8	0.0446
Total			155.5	0.2494

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 7

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020

15,752,700.096898

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Anthracite Co-Gen (0181)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00
2010	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-
2012	1	-	-	1	-	0.05	0.05
2013	1	-	-	1	-	0.05	0.05
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	2	-	-	2	-	0.10	0.10

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 0.00	# 0.00	# 0.1966	# 0.0284	# 0.0284	\$ 7,534,735	0.0038
	-	-	0.2342	0.0338	0.0338	7,958,048	0.0042
2010	-	-	0.3611	0.0521	0.0521	10,981,642	0.0047
2011	-	-	0.3398	0.0490	0.0990	9,311,812	0.0106
2012	0.05	0.95	0.3106	0.0448	0.0948	7,630,762	0.0124
2013	0.05	0.95	0.3820	0.0551	0.0551	8,360,898	0.0066
2014	-	-	0.4855	0.0701	0.0701	9,554,806	0.0073
2015	-	-	0.4475	0.0646	0.0646	7,953,309	0.0081
2016	-	-	0.4820	0.0696	0.0696	7,793,558	0.0089
2017	-	-	0.6780	0.0978	0.0978	10,018,416	0.0098
2018	-	-	0.6780	0.0978	0.0978	10,018,416	0.0098
Total	0.10	1.90	3.9173	0.5653	0.6653	\$ 87,097,986	0.0076

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836	1.0720	161.7	0.0175
	845	1.0720	168.9	0.0200
2010	845	1.0720	168.9	0.0200
2011	858	1.0720	229.6	0.0227
2012	888	1.0720	188.1	0.0526
2013	917	1.0720	149.3	0.0635
2014	932	1.0720	160.9	0.0343
2015	951	1.0720	180.2	0.0389
2016	978	1.0720	145.9	0.0443
2017	995	1.0720	140.5	0.0495
2018	1,025	1.0720	175.3	0.0558
Total			1,700.4	0.0391

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 8

Run Date: September 23, 2019 - 03:08:44 PM

PAB Effective Date - April 01, 2020

174,268,865.882396

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Bituminous Co-Gen (0182)

	Counts						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Reported	Awarded	Pending	Denied	Pending Awarded (3) * 30%	Denied Reopened	Denied Awarded
Year	_____	_____	_____	_____	_____	_____	_____
2009	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00
2010	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Ultimate Awarded (2)+(5)+(7)	Ultimate Denied (1)-(8)	IBNR IBNR	IBNR Awarded (10)xAward Ratio	Total Awarded (8)+(11)	Payroll	Frequency (12)/(13) x 1000000
Year	_____	_____	_____	_____	_____	_____	_____
2009	# 0.00	# 0.00	# 0.2053	# 0.0296	# 0.0296	\$ 7,866,413	0.0038
2010	-	-	0.2570	0.0371	0.0371	8,732,701	0.0042
2011	-	-	0.2993	0.0432	0.0432	9,102,411	0.0047
2012	-	-	0.3302	0.0476	0.0476	9,047,745	0.0053
2013	-	-	0.4216	0.0608	0.0608	10,355,884	0.0059
2014	-	-	0.5355	0.0773	0.0773	11,721,184	0.0066
2015	-	-	0.5970	0.0861	0.0861	11,748,205	0.0073
2016	-	-	0.6373	0.0920	0.0920	11,327,552	0.0081
2017	-	-	0.7071	0.1020	0.1020	11,435,057	0.0089
2018	-	-	0.8119	0.1172	0.1172	11,996,610	0.0098
Total	-	-	4.8022	0.6930	0.6930	\$ 103,333,762	0.0067

	(15)	(16)	(17)	(18)
	Statewide Average Weekly Wage	Adjustment Factor	Estimated Miner Years	Frequency Claims per 100 Miner Years
Year	_____	_____	_____	_____
2009	836	1.0720	168.8	0.0176
2010	845	1.0720	185.4	0.0200
2011	858	1.0720	190.3	0.0227
2012	888	1.0720	182.8	0.0261
2013	917	1.0720	202.6	0.0300
2014	932	1.0720	225.6	0.0343
2015	951	1.0720	221.6	0.0389
2016	978	1.0720	207.8	0.0443
2017	995	1.0720	206.2	0.0495
2018	1,025	1.0720	210.0	0.0558
Total			2,001.1	0.0346

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 9

Run Date: September 23, 2019 - 03:08:44 PM

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Effective Date - April 01, 2020
206,741,008.885492

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Anthracite Prep-Plant (0183)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 0	# 0	# 0	# 0	# 0.00	# 0.00	# 0.00
2010	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-
2013	1	-	1	-	0.30	-	-
2014	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	1	-	1	-	0.30	-	-

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 0.00	# 0.00	# 0.3269	# 0.0472	# 0.0472	\$ 6,264,606	0.0075
	-	-	0.2871	0.0414	0.0414	4,876,927	0.0085
2010	-	-	0.4027	0.0581	0.0581	6,123,259	0.0095
2011	-	-	0.5524	0.0797	0.0797	7,569,023	0.0105
2012	0.30	0.70	0.5760	0.0831	0.3831	7,074,886	0.0542
2013	-	-	0.5959	0.0860	0.0860	6,521,541	0.0132
2014	-	-	0.6298	0.0909	0.0909	6,196,596	0.0147
2015	-	-	0.6237	0.0900	0.0900	5,542,968	0.0162
2016	-	-	0.7491	0.1081	0.1081	6,056,810	0.0178
2017	-	-	0.9324	0.1345	0.1345	6,888,320	0.0195
2018	-	-	0.9324	0.1345	0.1345	6,888,320	0.0195
Total	0.30	0.70	5.6760	0.8190	1.1190	\$ 63,114,936	0.0177

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836	1.0720	134.4	0.0351
	845	1.0720	103.5	0.0400
2010	845	1.0720	103.5	0.0400
2011	858	1.0720	128.0	0.0454
2012	888	1.0720	152.9	0.0521
2013	917	1.0720	138.4	0.2768
2014	932	1.0720	125.5	0.0685
2015	951	1.0720	116.9	0.0777
2016	978	1.0720	101.7	0.0885
2017	995	1.0720	109.2	0.0990
2018	1,025	1.0720	120.6	0.1116
Total			1,231.1	0.0909

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 10

Run Date: September 23, 2019 - 03:08:44 PM

PAB Effective Date - April 01, 2020

126,301,827.067561

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Page 11

Bituminous Prep-Plant (0184)

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
	# 1	# 0	# 0	# 1	# 0.00	# 0.05	# 0.05
2009	-	-	-	-	-	-	-
2010	1	-	-	1	-	0.05	0.05
2011	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-
2013	-	-	-	-	-	-	-
2014	2	-	2	-	0.60	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	4	-	2	2	0.60	0.10	0.10

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 0.05	# 0.95	# 0.5174	# 0.0747	# 0.1247	\$ 19,828,012	0.0063
2009	-	-	0.7745	0.1118	0.1118	26,313,130	0.0042
2010	0.05	0.95	1.1559	0.1668	0.2168	35,155,068	0.0062
2011	-	-	1.2484	0.1801	0.1801	34,211,729	0.0053
2012	-	-	1.3695	0.1976	0.1976	33,639,969	0.0059
2013	0.60	1.40	1.4553	0.2100	0.8100	31,854,431	0.0254
2014	-	-	1.2359	0.1783	0.1783	24,320,608	0.0073
2015	-	-	1.1297	0.1630	0.1630	20,079,401	0.0081
2016	-	-	1.7820	0.2571	0.2571	28,816,678	0.0089
2017	-	-	2.1694	0.3130	0.3130	32,053,553	0.0098
2018	-	-					
Total	0.70	3.30	12.8380	1.8525	2.5525	\$ 286,272,579	0.0089

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
2009	836	1.5490	294.5	0.0423
2010	845	1.5490	386.6	0.0289
2011	858	1.5490	508.7	0.0426
2012	888	1.5490	478.3	0.0377
2013	917	1.5490	455.4	0.0434
2014	932	1.5490	424.3	0.1909
2015	951	1.5490	317.5	0.0562
2016	978	1.5490	254.9	0.0640
2017	995	1.5490	359.6	0.0715
2018	1,025	1.5490	388.2	0.0806
Total			3,868.0	0.0660

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Exhibit X

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm]p 11

Run Date: September 23, 2019 - 03:08:44 PM

PAB

Effective Date - April 01, 2020

572,622,429.540799

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Total Other Classes

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 1	# 0	# 0	# 1	# 0.00	# 0.05	# 0.05
2010	1	-	1	-	0.30	-	-
2011	1	-	-	1	-	0.05	0.05
2012	2	-	-	2	-	0.10	0.10
2013	2	-	1	1	0.30	0.05	0.05
2014	2	-	2	-	0.60	-	-
2015	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-
Total	9	-	4	5	1.20	0.25	0.25

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 0.05	# 0.95	# 1.3200	# 0.1905	# 0.2405	\$ 47,614,281	0.0051
	0.30	0.70	1.6363	0.2361	0.5361	54,143,960	0.0099
2010	0.05	0.95	2.2972	0.3315	0.3815	66,137,721	0.0058
2011	0.10	1.90	2.5782	0.3720	0.4720	66,686,622	0.0071
2012	0.35	1.65	2.7898	0.4026	0.7526	64,540,358	0.0117
2013	0.60	1.40	3.0818	0.4447	1.0447	63,784,042	0.0164
2014	-	-	3.0630	0.4420	0.4420	56,815,357	0.0078
2015	-	-	2.9557	0.4265	0.4265	49,731,072	0.0086
2016	-	-	3.8611	0.5572	0.5572	59,234,540	0.0094
2017	-	-	4.7427	0.6844	0.6844	65,973,820	0.0104
2018	-	-	4.7427	0.6844	0.6844	65,973,820	0.0104
Total	1.45	7.55	28.3258	4.0874	5.5374	\$ 594,661,773	0.0093

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836		890.7	0.0270
	845		977.4	0.0549
2010	858		1,156.5	0.0330
2011	888		1,134.3	0.0416
2012	917		1,059.9	0.0710
2013	932		1,038.8	0.1006
2014	951		930.5	0.0475
2015	978		798.9	0.0534
2016	995		908.0	0.0614
2017	1,025		981.9	0.0697
2018			981.9	0.0697
Total			9,876.9	0.0561

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Sum of Pages 6 to 11

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

File: k:\OneDrive\Clients\Coal Mine\2019 Rate Filing\XL\2019-08-F.xlsm)p 12

Run Date: September 23, 2019 - 03:08:44 PM

PAB

Effective Date - April 01, 2020

1,189,412,892.962870

Federal Basic Occupational Disease After Administration / Law Change Frequencies by Classification

Grand Total

Year	Counts				(5) Pending Awarded (3) * 30%	(6) Denied Reopened	(7) Denied Awarded
	(1)	(2)	(3)	(4)			
	Reported	Awarded	Pending	Denied			
2009	# 10	# 1	# 0	# 9	# 0.00	# 0.45	# 0.45
2010	10	-	3	7	0.90	0.35	0.35
2011	14	1	1	12	0.30	0.60	0.60
2012	17	2	1	14	0.30	0.70	0.70
2013	15	2	4	9	1.20	0.45	0.45
2014	21	1	4	16	1.20	0.80	0.80
2015	26	1	3	22	0.90	1.10	1.10
2016	9	-	1	8	0.30	0.40	0.40
2017	6	-	1	5	0.30	0.25	0.25
2018	3	-	1	2	0.30	0.10	0.10
Total	131	8	19	104	5.70	5.20	5.20

Year	(8) Ultimate Awarded (2)+(5)+(7)	(9) Ultimate Denied (1)-(8)	(10) IBNR IBNR	(11) IBNR Awarded (10)xAward Ratio	(12) Total Awarded (8)+(11)	(13) Payroll	(14) Frequency (12)/(13) x 1000000
	# 1.45	# 8.55	# 10.6867	# 1.5421	# 2.9921	\$ 229,498,510	0.0130
	1.25	8.75	14.5538	2.1001	3.3501	268,411,486	0.0125
2010	1.25	8.75	14.5538	2.1001	3.3501	268,411,486	0.0125
2011	1.90	12.10	19.8949	2.8708	4.7708	323,119,308	0.0148
2012	3.00	14.00	23.4039	3.3772	6.3772	323,960,001	0.0197
2013	3.65	11.35	24.4237	3.5243	7.1743	293,506,562	0.0244
2014	3.00	18.00	32.0319	4.6222	7.6222	321,754,757	0.0237
2015	3.00	23.00	28.9783	4.1816	7.1816	261,874,410	0.0274
2016	0.70	8.30	27.2375	3.9304	4.6304	217,828,634	0.0213
2017	0.55	5.45	43.1907	6.2324	6.7824	285,631,355	0.0237
2018	0.40	2.60	51.7551	7.4683	7.8683	300,346,902	0.0262
Total	18.90	112.10	276.1565	39.8494	58.7494	\$ 2,825,931,925	0.0208

Year	(15) Statewide Average Weekly Wage	(16) Adjustment Factor	(17) Estimated Miner Years	(18) Frequency Claims per 100 Miner Years
	836		4,124.0	0.0726
	845		4,706.5	0.0712
2010	845		4,706.5	0.0712
2011	858		5,573.5	0.0856
2012	888		5,376.0	0.1186
2013	917		4,664.7	0.1538
2014	932		4,917.0	0.1550
2015	951		3,982.1	0.1803
2016	978		3,212.6	0.1441
2017	995		4,030.5	0.1683
2018	1,025		4,115.1	0.1912
Total			44,702.0	0.1314

Sources:

Cols.(1) to (4): CMCRB Claims Database

Col.(6): (0.05)xCol.(4)

Col.(7): (1.00)xCol.(6)

Col.(10): Exh. VIII-C

Col.(13): Sum of Pages 5 & 12

Col.(15): Exhibit XII-D

Col.(16): Exhibit X-G

Col.(17): (13) / ((15) x (16) x 52)

Col.(18): (12) / (17) x 100

IBNR Award Ratio: 0.1443

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Run Date: September 23, 2019 - 03:08:44 PM

PAB

Effective Date - April 01, 2020

5,652,024,282.554510

COAL MINE COMPENSATION RATING BUREAU
INDIVIDUAL CLAIM DETAIL FOR STATE AND FEDERAL EXCESS

															"All Permanent Partial" Scenario (see note)						
				Age of		State	Medical	Act 44	Act	Offsets for:		Federal Excess:			State	Offsets for:		Federal Excess:			
ID No.	Class	Pend (1)	Type*	Exp.	Miner at							Base	SS	SS, PP				Benefit	Soc. Sec.	Pension	Base
				Yr. Comp	Date	Benefit	Bef. Act 44	Factor	44 Med.	Soc. Sec.	Pension	After Offsets:			Benefit	Soc. Sec.	Pension	After Offsets:			
												Base	SS	SS, PP					Base	SS	SS, PP
1717	1011	2		1993	61.3	616,007	31,777	1.00	31,777	-	151,129	23	23	4,618	324,768	-	82,540	174,767	174,767	175,555	
1721	1011	2		1990	66.8	835,767	23,929	1.00	23,929	-	185,420	-	-	0	503,734	-	148,309	114,996	114,996	115,763	
2053	1011	2		1992	47.4	1,723,268	53,414	1.00	53,414	309,016	195,740	0	26,060	168,996	622,424	-	-	421,097	421,097	421,097	
3070	1011	2		1993	61.2	468,251	31,777	1.00	31,777	-	149,842	-	-	217	286,907	-	81,838	82,412	82,412	83,194	
5551	1011	2		1993	64.8	581,466	26,411	1.00	26,411	-	162,869	7	7	2,176	324,518	-	107,872	147,999	147,999	148,734	
5717	1011	2		1992	50.0	1,410,323	48,617	1.00	48,617	278,359	169,412	11	43,295	185,278	513,257	-	-	423,085	423,085	423,085	
6627	1011	2	LS	1999	62.2	146,563	30,384	1.00	30,384	-	72,714	214,005	214,005	276,746	146,563	-	72,714	214,005	214,005	276,746	
10280	1011	2	LS	2011	49.9	549,322	48,617	1.00	48,617	-	-	449,973	449,973	449,973	549,322	-	-	449,973	449,973	449,973	
10536	1011	2	LS	2013	53.7	417,105	42,275	1.00	42,275	-	-	394,759	394,759	394,759	417,105	-	-	394,759	394,759	394,759	

Total Underground Anthracite	9	6,748,072	337,199	337,199	587,375	1,087,126	1,058,778	1,128,123	1,482,765	3,688,598	0	493,273	2,423,094	2,423,094	2,488,907
Average of 9 claims		749,786	37,467	37,467	65,264	120,792	117,642	125,347	164,752	409,844	0	54,808	269,233	269,233	276,545
		7,085,271													
Medical plus Indemnity		787,252			65,264	120,792	117,642	125,347	164,752	447,311	0	54,808	269,233	269,233	276,545
Adjusted										447,311	0	54,808	269,233	269,233	276,545

* Type code is as follows: 500 is 500 Weeks, WO is Widow Only, LS is Lump Sum, otherwise claim is Lifetime.

For the "All Permanent Partial" Scenario, Permanent claims for a Miner or Miner and Spouse were re-run with 630 weeks of State Indemnity benefits.

Widow Only, Commuted/Compromised and Lump Sums were the same as in the Base Scenario.

Source: Individual claim data from CMCRB.

COAL MINE COMPENSATION RATING BUREAU
INDIVIDUAL CLAIM DETAIL FOR STATE AND FEDERAL EXCESS

														"All Permanent Partial" Scenario (see note)									
				Age of		State	Medical	Act 44	Act	Federal Excess:			Federal Excess:			State	Federal Excess:						
				Miner at	Benefit					Bef. Act 44	Factor	44 Med.	Offsets for:		Base		SS	SS, PP	Benefit	Offsets for:		Base	SS
ID No.	Class	Pend (1)	Type*	Yr. Comp	Date					Soc. Sec.	Pension					Soc. Sec.	Pension						
511	1002	2		1992	63.5	871,910	27,701	1.00	27,701	-	377,961	-	-	-	562,688	-	239,458	66,931	66,931	68,689			
517	1002	2	LS	1993	64.9	118,465	26,411	1.00	26,411	-	100,559	206,932	206,932	306,256	118,465	-	100,559	206,932	206,932	306,256			
518	1002	2	LS	1992	63.6	185,342	27,701	1.00	27,701	-	149,297	209,135	209,135	311,645	185,342	-	149,297	209,135	209,135	311,645			
1330	1002	2	500	1993	63.3	428,399	29,025	1.00	29,025	-	132,286	258,795	258,795	258,795	428,399	-	132,286	258,795	258,795	258,795			
1892	1002	2	LS	1990	67.4	65,673	23,929	1.00	23,929	-	50,833	223,221	223,221	274,055	65,673	-	50,833	223,221	223,221	274,055			
3222	1002	2	500	1992	62.8	158,917	29,025	1.00	29,025	-	49,072	223,352	223,352	237,099	158,917	-	49,072	223,352	223,352	237,099			
3532	1002	2	LS	1995	58.1	321,273	36,141	1.00	36,141	61,274	23,592	270,516	286,384	305,643	321,273	61,274	23,592	270,516	286,384	305,643			
3706	1002	2	LS	1992	65.1	124,135	26,411	1.00	26,411	-	99,200	203,220	203,220	301,554	124,135	-	99,200	203,220	203,220	301,554			
5479	1002	2		1992	63.7	898,897	27,701	1.00	27,701	-	244,225	-	-	3	486,934	-	154,729	159,887	159,887	161,022			
5918	1002	2		1990	66.7	1,149,277	23,929	1.00	23,929	-	373,052	-	-	44	642,699	-	292,783	127,558	127,558	129,130			
5966	1002	2		1994	58.8	1,613,227	34,658	1.00	34,658	330,748	334,259	-	2,985	141,494	659,619	110,123	135,103	295,355	297,183	323,482			
6415	1002	2	500	1992	62.4	476,664	30,384	1.00	30,384	-	154,888	235,701	235,701	235,701	476,664	-	154,888	235,701	235,701	235,701			
6771	1002	2	500	1992	62.5	106,751	30,384	1.00	30,384	-	28,472	100,817	100,817	110,099	106,751	-	28,472	100,817	100,817	110,099			
7004	1002	2		1992	60.7	1,214,290	31,777	1.00	31,777	-	306,317	-	-	0	625,335	-	181,056	185,075	185,075	186,586			
7051	1002	2	LS	1997	56.5	157,869	36,867	1.00	36,867	27,442	117	280,192	304,405	304,521	157,869	27,442	117	280,192	304,405	304,521			
7941	1002	2	LS	1994	66.3	19,287	25,153	1.00	25,153	-	14,655	238,657	238,657	253,311	19,287	-	14,655	238,657	238,657	253,311			
8028	1002	2		1992	55.5	1,534,175	39,174	1.00	39,174	308,743	266,030	-	2,907	95,577	652,382	57,051	61,037	293,839	295,625	299,586			
9826	1002	2	LS	1999	52.9	51,990	43,847	1.00	43,847	-	-	443,126	443,126	443,126	51,990	-	-	443,126	443,126	443,126			
9829	1002	2	LS	2001	61.4	142,041	31,777	1.00	31,777	-	83,888	264,194	264,194	342,979	142,041	-	83,888	264,194	264,194	342,979			
9835	1002	2	LS	1999	55.0	3,525	40,716	1.00	40,716	90	-	471,387	471,478	471,478	3,525	90	-	471,387	471,478	471,478			
9841	1002	2	LS	2001	59.3	134,940	34,658	1.00	34,658	47,247	131	279,249	325,510	325,641	134,940	47,247	131	279,249	325,510	325,641			
9886	1002	2	LS	2000	59.9	629,656	33,203	1.00	33,203	82,208	99,523	266,584	266,584	268,158	629,656	82,208	99,523	266,584	266,584	268,158			
9901	1002	2	LS	2002	45.3	196,428	56,587	1.00	56,587	-	-	531,122	531,122	531,122	196,428	-	-	531,122	531,122	531,122			
9996	1002	2	LS	2004	52.3	90,811	45,430	1.00	45,430	-	-	415,913	415,913	415,913	90,811	-	-	415,913	415,913	415,913			
10016	1002	2	LS	2002	58.7	163,060	34,658	1.00	34,658	57,191	61	258,036	305,635	305,696	163,060	57,191	61	258,036	305,635	305,696			
10021	1002	2	LS	2000	66.1	95,013	25,153	1.00	25,153	-	72,822	182,169	182,169	254,990	95,013	-	72,822	182,169	182,169	254,990			
10022	1002	2	LS	2000	59.0	94,525	34,658	1.00	34,658	33,189	-	281,047	314,183	314,183	94,525	33,189	-	281,047	314,183	314,183			
10025	1002	2	LS	2000	57.7	94,561	36,141	1.00	36,141	24,979	-	306,118	331,075	331,075	94,561	24,979	-	306,118	331,075	331,075			
10026	1002	2	LS	2000	61.4	94,853	31,777	1.00	31,777	-	57,321	240,573	240,573	297,748	94,853	-	57,321	240,573	240,573	297,748			
10038	1002	2	LS	2000	44.4	77,468	58,151	1.00	58,151	-	-	690,759	690,759	690,759	77,468	-	-	690,759	690,759	690,759			
10048	1002	2	LS	2005	54.6	92,719	40,716	1.00	40,716	2,378	-	359,110	361,488	361,488	92,719	2,378	-	359,110	361,488	361,488			
10088	1002	2	LS	2005	60.5	126,608	33,203	1.00	33,203	-	74,743	101,082	101,082	156,283	126,608	-	74,743	101,082	101,082	156,283			
10164	1002	2	LS	2001	53.4	89,960	43,847	1.00	43,847	-	-	536,780	536,780	536,780	89,960	-	-	536,780	536,780	536,780			
10208	1002	2	LS	2005	61.6	235,185	30,384	1.00	30,384	-	140,687	208,120	208,120	277,344	235,185	-	140,687	208,120	208,120	277,344			
10286	1002	2	LS	2008	58.0	115,912	36,141	1.00	36,141	30,619	-	360,869	391,258	391,258	115,912	30,619	-	360,869	391,258	391,258			
10330	1002	2	LS	2012	63.3	197,599	29,025	1.00	29,025	-	136,993	260,591	260,591	349,239	197,599	-	136,993	260,591	260,591	349,239			
10345	1002	2	LS	2008	49.6	525,188	48,617	1.00	48,617	-	-	475,920	475,920	475,920	525,188	-	-	475,920	475,920	475,920			
10347	1002	2	LS	2011	65.3	239,748	26,411	1.00	26,411	-	159,298	170,372	170,372	247,196	239,748	-	159,298	170,372	170,372	247,196			
10357	1002	2	LS	2012	62.4	97,617	30,384	1.00	30,384	-	60,446	249,797	249,797	309,981	97,617	-	60,446	249,797	249,797	309,981			
10360	1002	2	LS	2013	59.7	107,571	33,203	1.00	33,203	47,245	-	116,982	157,166	157,166	107,571	47,245	-	116,982	157,166	157,166			
10433	1002	2	LS	2012	68.0	88,415	22,739	1.00	22,739	-	68,331	215,893	215,893	284,224	88,415	-	68,331	215,893	215,893	284,224			
10434	1002	2	LS	2013	62.7	74,829	29,025	1.00	29,025	-	53,239	263,047	263,047	316,286	74,829	-	53,239	263,047	263,047	316,286			
10435	1002	2	LS	2013	58.5	214,308	36,141	1.00	36,141	50,763	5,847	290,693	321,552	327,333	214,308	50,763	5,847	290,693	321,552	327,333			
10465	1002	2	LS	2011	65.8	16,580	25,153	1.00	25,153	-	-	133,496	133,496	133,496	16,580	-	-	133,496	133,496	133,496			
10516	1002	2	LS	2014	75.8	74,770	14,602	1.00	14,602	-	44,273	106,460	106,460	150,733	74,770	-	44,273	106,460	106,460	150,733			
10561	1002	2	LS	2014	60.6	131,077	31,777	1.00	31,777	-	88,721	93,335	93,335	155,719	131,077	-	88,721	93,335	93,335	155,719			
10599	1002	1		2012	62.0	1,146,253	30,384	1.00	30,384	-	310,038	-	-	0	635,490	-	169,330	142,288	142,288	143,905			
10601	1002	2	LS	2015	61.6	279,773	30,384	1.00	30,384	-	114,075	243,712	243,712	261,370	279,773	-	114,075	243,712,					

COAL MINE COMPENSATION RATING BUREAU
INDIVIDUAL CLAIM DETAIL FOR STATE AND FEDERAL EXCESS

															"All Permanent Partial" Scenario (see note)						
				Age of						Federal Excess:						Federal Excess:					
Awd (2)		Exp.	Miner at	State	Medical	Act 44	Act	Offsets for:		After Offsets:			State	Offsets for:		After Offsets:					
ID No.	Class	Pend (1)	Type*	Yr. Comp	Date	Benefit	Bef. Act 44	Factor	44 Med.	Soc. Sec.	Pension	Base	SS	SS, PP	Benefit	Soc. Sec.	Pension	Base	SS	SS, PP	
408	1016	2		1994	69.0	840,128	21,585	1.00	21,585	-	182,576	-	-	0	547,213	-	154,278	86,978	86,978	87,663	
439	1016	2	LS	1999	73.6	22,722	16,419	1.00	16,419	-	-	79,401	79,401	79,401	22,722	-	-	79,401	79,401	79,401	
566	1016	2		1990	63.6	900,783	27,701	1.00	27,701	-	165,359	12,471	12,471	18,773	332,272	-	104,763	427,005	427,005	427,773	
636	1016	2		1994	62.3	588,096	30,384	1.00	30,384	-	148,316	21	21	5,013	314,086	-	81,004	165,584	165,584	166,357	
778	1016	2	WO	1991	#N/A	302,583	-	1.00	-	-	-	-	-	-	302,583	-	-	-	-	-	
924	1016	2	LS	1997	62.6	29,814	29,025	1.00	29,025	-	21,212	301,941	301,941	323,153	29,814	-	21,212	301,941	301,941	323,153	
1719	1016	2		1996	63.1	707,334	29,025	1.00	29,025	-	240,773	-	-	-	444,779	-	142,315	74,349	74,349	75,537	
2268	1016	2		1997	66.6	531,834	23,929	1.00	23,929	-	-	-	-	-	370,903	-	-	50,252	50,252	50,252	
2287	1016	2	LS	1998	67.8	535,505	22,739	1.00	22,739	-	134,676	141,947	141,947	141,947	535,505	-	134,676	141,947	141,947	141,947	
2479	1016	2		1990	63.9	792,986	27,701	1.00	27,701	-	226,417	-	-	9	449,703	-	143,447	138,198	138,198	139,250	
2794	1016	2		1993	65.9	1,002,564	25,153	1.00	25,153	-	227,473	-	-	-	619,511	-	185,899	101,075	101,075	101,988	
2827	1016	2		1992	66.1	788,736	25,153	1.00	25,153	-	174,182	-	-	0	482,427	-	140,648	107,827	107,827	108,539	
3350	1016	2	WO	1993	#N/A	672,264	-	1.00	-	-	-	-	-	-	672,264	-	-	-	-	-	
3814	1016	2		1993	71.8	62,978	18,368	1.00	18,368	-	-	44,678	44,678	44,678	49,675	-	-	57,982	57,982	57,982	
3970	1016	2	LS	1991	43.1	328,738	59,695	1.00	59,695	-	-	267,334	267,334	267,334	328,738	-	-	267,334	267,334	267,334	
5605	1016	2		1992	69.3	744,452	21,585	1.00	21,585	-	160,949	-	-	0	492,350	-	137,368	81,964	81,964	82,553	
5805	1016	2		1992	67.2	597,124	23,929	1.00	23,929	-	-	-	-	-	416,437	-	-	49,958	49,958	49,958	
6071	1016	2		1994	60.3	907,542	33,203	1.00	33,203	-	216,462	-	-	39	471,839	-	118,223	183,763	183,763	184,892	
6322	1016	2	LS	1991	59.5	558,233	34,658	1.00	34,658	55,675	54,819	122,471	122,471	122,471	558,233	55,675	54,819	122,471	122,471	122,471	
6481	1016	2		1990	65.7	668,465	25,153	1.00	25,153	-	148,964	0	0	343	371,686	-	113,141	150,162	150,162	150,808	
6603	1016	2		1995	69.8	460,580	20,471	1.00	20,471	-	99,480	2	2	1,233	294,118	-	83,579	96,655	96,655	97,032	
6765	1016	2	WO	1990	#N/A	525,931	-	1.00	-	-	-	-	-	-	525,931	-	-	-	-	-	
7028	1016	2		1997	62.3	618,981	30,384	1.00	30,384	-	198,075	-	-	2	379,262	-	108,181	81,714	81,714	82,747	
7473	1016	2		1995	67.0	1,352,247	23,929	1.00	23,929	-	341,834	-	-	1	649,393	-	255,296	187,135	187,135	188,629	
7825	1016	2		1995	67.6	482,325	22,739	1.00	22,739	-	105,794	0	0	1,153	304,616	-	87,464	99,151	99,151	99,567	
7857	1016	2		1993	59.7	740,229	33,203	1.00	33,203	258,531	208,919	-	3,263	67,170	430,766	98,431	94,634	95,979	97,377	102,247	
9805	1016	2	LS	2000	74.6	19,611	15,494	1.00	15,494	-	13,371	231,414	231,414	244,784	19,611	-	13,371	231,414	231,414	244,784	
9811	1016	2		2001	48.1	1,003,318	51,816	1.00	51,816	218,962	103,204	1,243	108,114	207,058	366,315	-	-	415,253	415,253	415,253	
9939	1016	2	LS	2003	61.4	208,900	31,777	1.00	31,777	-	84,178	270,919	270,919	311,198	208,900	-	84,178	270,919	270,919	311,198	
9981	1016	2		2004	79.6	580,604	11,378	1.00	11,378	-	160,593	-	-	0	502,277	-	157,468	15,205	15,205	15,353	
10030	1016	2		2005	60.2	675,208	33,203	1.00	33,203	-	158,359	25	25	3,633	345,591	-	86,489	193,570	193,570	194,396	
10074	1016	2	LS	2003	61.5	100,272	31,777	1.00	31,777	-	60,596	102,016	102,016	157,182	100,272	-	60,596	102,016	102,016	157,182	
10140	1016	2	LS	2007	68.8	105,883	21,585	1.00	21,585	-	79,405	173,638	173,638	253,043	105,883	-	79,405	173,638	173,638	253,043	
10190	1016	2	LS	2007	60.6	81,884	31,777	1.00	31,777	-	55,425	102,729	102,729	158,154	81,884	-	55,425	102,729	102,729	158,154	
10259	1016	2	LS	2007	72.9	44,813	17,376	1.00	17,376	-	29,545	156,103	156,103	185,648	44,813	-	29,545	156,103	156,103	185,648	
10278	1016	2	LS	2011	76.7	101,258	13,744	1.00	13,744	-	46,691	103,264	103,264	149,955	101,258	-	46,691	103,264	103,264	149,955	
10602	1016	2	LS	2016	63.7	155,317	27,701	1.00	27,701	-	125,111	228,030	228,030	331,144	155,317	-	125,111	228,030	228,030	331,144	

Total Surface Anthracite	37	18,840,242	913,759	913,759	533,168	3,972,758	2,339,649	2,449,782	3,074,520	12,428,947	154,106	2,899,223	5,140,967	5,142,365	5,604,192
Average of 37 claims		509,196	24,696	24,696	14,410	107,372	63,234	66,210	83,095	335,917	4,165	78,357	138,945	138,983	151,465
		19,754,001													
Medical plus Indemnity		533,892			14,410	107,372	63,234	66,210	83,095	360,614	4,165	78,357	138,945	138,983	151,465
Adjusted										360,614	4,165	78,357	138,945	138,983	151,465

* Type code is as follows: 500 is 500 Weeks, WO is Widow Only, LS is Lump Sum, otherwise claim is Lifetime.
For the "All Permanent Partial" Scenario, Permanent claims for a Miner or Miner and Spouse were re-run with 630 weeks of State Indemnity benefits.
Widow Only, Commuted/Compromised and Lump Sums were the same as in the Base Scenario.
Source: Individual claim data from CMCRRB.

COAL MINE COMPENSATION RATING BUREAU
INDIVIDUAL CLAIM DETAIL FOR STATE AND FEDERAL EXCESS

															"All Permanent Partial" Scenario (see note)					
				Age of						Federal Excess:						Federal Excess:				
Awd (2)				Exp.	Miner at	State	Medical	Act 44	Act	Offsets for:		After Offsets:			State	Offsets for:		After Offsets:		
ID No.	Class	Pend (1)	Type*	Yr.	Comp Date	Benefit	Bef. Act 44	Factor	44 Med.	Soc. Sec.	Pension	Base	SS	SS, PP	Benefit	Soc. Sec.	Pension	Base	SS	SS, PP
513	1013	2		1993	64.4	1,347,525	27,701	1.00	27,701	-	398,379	-	-	1	651,551	-	252,393	192,648	192,648	194,500
656	1013	2		1999	53.5	1,073,199	42,275	1.00	42,275	245,970	162,674	10	36,616	171,516	440,966	20,455	17,875	321,301	322,751	330,302
1135	1013	2	LS	1990	45.5	591,690	56,587	1.00	56,587	-	-	515,705	515,705	515,705	591,690	-	-	515,705	515,705	515,705
2486	1013	2	LS	1996	64.2	78,963	27,701	1.00	27,701	-	63,606	94,710	94,710	158,310	78,963	-	63,606	94,710	94,710	158,310
3386	1013	2	LS	1993	57.8	345,731	36,141	1.00	36,141	40,273	38,498	299,534	301,936	324,687	345,731	40,273	38,498	299,534	301,936	324,687
3867	1013	2		1994	45.8	1,660,658	55,006	1.00	55,006	299,078	166,594	3	50,622	194,008	567,638	-	-	480,542	480,542	480,542
3968	1013	2	500	1991	43.7	442,982	58,151	1.00	58,151	-	-	258,177	258,177	258,177	442,982	-	-	258,177	258,177	258,177
5814	1013	2	LS	1997	61.0	11,154	31,777	1.00	31,777	-	6,741	303,496	303,496	310,237	11,154	-	6,741	303,496	303,496	310,237
5816	1013	2	LS	1996	61.0	188,317	31,777	1.00	31,777	-	113,802	224,337	224,337	304,872	188,317	-	113,802	224,337	224,337	304,872
5963	1013	2	LS	1994	59.1	66,585	34,658	1.00	34,658	23,379	-	343,144	366,523	366,523	66,585	23,379	-	343,144	366,523	366,523
5968	1013	2	LS	1995	56.9	322,406	37,648	1.00	37,648	23,503	20,872	338,450	340,941	352,503	322,406	23,503	20,872	338,450	340,941	352,503
7788	1013	2	LS	1991	69.2	196,641	21,585	1.00	21,585	-	131,474	94,314	94,314	181,976	196,641	-	131,474	94,314	94,314	181,976
9770	1013	2	LS	1999	59.2	44,486	34,658	1.00	34,658	15,620	-	316,730	332,350	332,350	44,486	15,620	-	316,730	332,350	332,350
9771	1013	2	LS	1998	62.5	116,260	29,025	1.00	29,025	-	82,717	93,772	93,772	156,219	116,260	-	82,717	93,772	93,772	156,219
9999	1013	2	LS	2005	46.2	35,934	55,006	1.00	55,006	-	-	289,784	289,784	289,784	35,934	-	-	289,784	289,784	289,784
10439	1013	2		2011	61.5	766,646	30,384	1.00	30,384	-	260,963	-	-	-	482,075	-	154,248	74,020	74,020	75,308
10537	1013	2	LS	2012	64.5	111,897	27,701	1.00	27,701	-	90,135	187,230	187,230	276,056	111,897	-	90,135	187,230	187,230	276,056
10582	1013	2	LS	2015	72.1	95,948	18,368	1.00	18,368	-	-	40,772	40,772	40,772	95,948	-	-	40,772	40,772	40,772
10598	1013	2	LS	2012	61.7	24,866	30,384	1.00	30,384	-	17,246	310,035	310,035	327,281	24,866	-	17,246	310,035	310,035	327,281
10659	1013	2	LS	2015	56.9	84,660	37,648	1.00	37,648	15,092	-	146,034	161,126	161,126	84,660	15,092	-	146,034	161,126	161,126
10665	1013	2	LS	2014	55.8	280,375	39,174	1.00	39,174	14,005	12,187	334,456	339,849	346,725	280,375	14,005	12,187	334,456	339,849	346,725

Total Surface Bituminous	21	7,886,923	763,353	763,353	676,920	1,565,887	4,190,695	4,342,297	5,068,829	5,181,126	152,328	1,001,794	5,259,193	5,325,020	5,783,956
Average of 21 claims		375,568	36,350	36,350	32,234	74,566	199,557	206,776	241,373	246,720	7,254	47,704	250,438	253,572	275,426
		8,650,277													
Medical plus Indemnity		411,918			32,234	74,566	199,557	206,776	241,373	283,070	7,254	47,704	250,438	253,572	275,426
Adjusted										283,070	7,254	47,704	250,438	253,572	275,426

* Type code is as follows: 500 is 500 Weeks, WO is Widow Only, LS is Lump Sum, otherwise claim is Lifetime.
For the "All Permanent Partial" Scenario, Permanent claims for a Miner or Miner and Spouse were re-run with 630 weeks of State Indemnity benefits.
Widow Only, Commuted/Compromised and Lump Sums were the same as in the Base Scenario.
Source: Individual claim data from CMCRB.

COAL MINE COMPENSATION RATING BUREAU
INDIVIDUAL CLAIM DETAIL FOR STATE AND FEDERAL EXCESS

														"All Permanent Partial" Scenario (see note)						
				Age of		State	Medical	Act 44	Act	Federal Excess:		Federal Excess:			State	Federal Excess:		Federal Excess:		
Awd (2)				Exp.	Miner at					Offsets for:		After Offsets:				Offsets for:		After Offsets:		
ID No.	Class	Pend (1)	Type*	Yr. Comp	Date	Benefit	Bef. Act 44	Factor	44 Med.	Soc. Sec.	Pension	Base	SS	SS, PP	Benefit	Soc. Sec.	Pension	Base	SS	SS, PP
3221	1017	2		1993	60.8	1,482,067	31,777	1.00	31,777	-	424,018	-	-	172	650,584	-	250,626	245,154	245,154	247,246
3224	1017	2	LS	1992	56.9	236,961	37,648	1.00	37,648	37,454	4,789	316,904	337,600	342,316	236,961	37,454	4,789	316,904	337,600	342,316
9944	1022	2	LS	2003	53.1	86,200	43,847	1.00	43,847	-	-	370,725	370,725	370,725	86,200	-	-	370,725	370,725	370,725
10124	1024	2	LS	2006	60.0	117,198	33,203	1.00	33,203	51,473	-	324,018	375,056	375,056	117,198	51,473	-	324,018	375,056	375,056
1126	1026	2		1997	55.4	498,933	40,716	1.00	40,716	178,830	97,514	28	52,155	142,844	256,299	24,012	18,327	138,213	139,259	151,472
9877	1026	2	LS	1997	54.7	39,752	40,716	1.00	40,716	1,019	-	202,832	203,851	203,851	39,752	1,019	-	202,832	203,851	203,851
9993	1026	2	LS	2004	78.1	75,048	-	1.00	-	-	44,528	124,172	124,172	168,700	75,048	-	44,528	124,172	124,172	168,700
10161	1026	2	LS	2007	43.2	29,776	59,695	1.00	59,695	-	-	726,353	726,353	726,353	29,776	-	-	726,353	726,353	726,353
10245	1026	2		2010	74.5	440,723	16,419	1.00	16,419	-	91,166	-	-	3	333,150	-	84,341	46,191	46,191	46,418
10600	1026	2	LS	2015	72.2	179,896	18,368	1.00	18,368	-	57,101	55,864	55,864	86,517	179,896	-	57,101	55,864	55,864	86,517
10650	1026	2	LS	2017	52.5	91,830	45,430	1.00	45,430	-	-	270,675	270,675	270,675	91,830	-	-	270,675	270,675	270,675
10718	1026	2	LS	2014	58.6	112,642	34,658	1.00	34,658	37,094	2,456	313,069	349,810	352,265	112,642	37,094	2,456	313,069	349,810	352,265
9784	1028	2	LS	2000	78.3	69,237	-	1.00	-	-	40,427	171,193	171,193	211,620	69,237	-	40,427	171,193	171,193	211,620
10741	1028	1		2016	62.1	938,500	30,384	1.00	30,384	-	484,576	-	-	4	575,038	-	264,656	80,292	80,292	82,819

Total Surface Bituminous	14	4,398,763	432,860	432,860	305,871	1,246,574	2,875,831	3,037,454	3,251,101	2,853,611	151,053	767,248	3,385,654	3,496,195	3,636,034
Average of 14 claims		314,197	30,919	30,919	21,848	89,041	205,417	216,961	232,222	203,829	10,790	54,803	241,832	249,728	259,717
		4,831,623													
Medical plus Indemnity		345,116			21,848	89,041	205,417	216,961	232,222	234,748	10,790	54,803	241,832	249,728	259,717
Adjusted										234,748	10,790	54,803	241,832	249,728	259,717

* Type code is as follows: 500 is 500 Weeks, WO is Widow Only, LS is Lump Sum, otherwise claim is Lifetime.
For the "All Permanent Partial" Scenario, Permanent claims for a Miner or Miner and Spouse were re-run with 630 weeks of State Indemnity benefits.
Widow Only, Commuted/Compromised and Lump Sums were the same as in the Base Scenario.
Source: Individual claim data from CMCRB.

**Coal Mine Compensation Rating Bureau
Individual Claim Detail for Federal Basic**

Page 1
Underground Anthracite
Class 160

ID No.	Class	Awd (2) Pend (1)	Exp. Date	Type*	Age of Miner at Comp. Date	Federal Benefit	Medical
1335	160	2	4/4/1994	0	61.23	186,249	68,094
2051	160	2	12/6/1990	0	64.94	299,756	56,594
3089	160	2	12/6/1990	0	52.39	594,456	97,350
3156	160	2	6/22/1990	0	67.11	431,357	51,276
3720	160	2	10/1/1990	WO	N/A	242,275	-
4555	160	2	6/22/1990	0	67.34	297,032	51,276
4735	160	2	5/5/1992	WO	N/A	276,676	-
7258	160	2	12/2/1993	0	59.78	433,362	71,148
7489	160	2	6/22/1990	0	54.50	544,726	87,249
7863	160	2	12/6/1990	0	56.42	644,688	83,944
9876	160	2	6/13/2001	0	64.89	291,352	56,594
9929	160	2	5/7/2001	0	51.00	447,288	100,760
9960	160	2	4/1/1999	WO	N/A	136,950	-
10199	160	2	1/1/1990	0	60.50	410,211	71,148
10200	160	2	10/24/2006	0	53.47	572,885	93,957
10237	160	2	7/21/2003	0	65.28	283,279	56,594
10395	160	2	6/30/1999	0	59.24	203,137	74,268
10482	160	2	6/1/1991	0	61.87	420,878	65,108
10520	160	1	7/16/1998	0	52.76	482,905	93,957

Total Underground Anthracite		7,199,462	1,179,318
Average of 19 claims	59.54	378,919	62,069
Medical plus Indemnity		440,988	

*Type is "WO" for Widow Only claims; 0 for all other claims.
Source: Individual claim detail from CMCRB.

**Coal Mine Compensation Rating Bureau
Individual Claim Detail for Federal Basic**

Page 2
Underground Bituminous
Class 158

ID No.	Class	Awd (2) Pend (1)	Exp. Date	Type*	Age of Miner at Comp. Date	Federal Benefit	Medical
275	158	2	9/25/1992	0	71.39	276,784	41,569
508	158	2	8/15/1991	0	75.55	85,586	31,291
917	158	2	4/1/1993	0	62.00	375,574	65,108
931	158	2	3/3/1995	0	68.32	291,628	48,726
3481	158	2	5/20/1990	0	57.28	442,011	80,674
5821	158	2	5/1/1992	0	69.52	247,156	43,867
6950	158	2	9/30/1990	0	57.91	402,463	77,445
7484	158	2	1/1/1990	WO	N/A	325,540	-
7689	158	2	9/19/1991	0	54.11	487,040	90,588
8381	158	2	12/31/1997	0	77.23	172,887	29,452
9758	158	1	6/28/2000	0	52.23	514,113	97,350
9857	158	2	7/14/1992	0	79.44	159,143	26,000
9863	158	2	5/1/1990	0	73.06	101,843	37,234
9870	158	2	6/1/1994	WO	N/A	300,756	-
10032	158	2	1/3/1999	0	74.23	245,737	35,184
10042	158	2	11/15/2001	0	55.61	472,531	83,944
10065	158	2	10/9/1992	WO	N/A	107,178	-
10086	158	2	2/9/2006	0	56.41	472,531	83,944
10090	158	2	5/1/2004	0	61.18	352,165	68,094
10123	158	2	3/1/1999	0	52.44	490,632	97,350
10129	158	2	7/1/1993	0	61.63	499,809	65,108
10169	158	1	12/26/2008	0	67.29	140,249	51,276
10182	158	2	9/1/2001	0	61.75	345,542	65,108
10189	158	2	7/11/2002	0	55.34	238,644	87,249
10194	158	2	10/10/2001	0	66.61	306,272	51,276
10218	158	2	1/1/1999	0	66.66	279,592	51,276
10254	158	2	5/1/1999	0	67.52	257,793	48,726
10255	158	2	12/1/1992	WO	N/A	171,367	-
10265	158	2	5/15/1999	0	63.36	439,907	62,197
10291	158	2	6/30/2002	0	67.37	140,249	51,276
10293	158	2	12/1/2003	0	65.01	347,141	56,594
10299	158	2	2/4/2001	0	65.28	268,118	56,594
10315	158	2	4/1/1993	0	66.37	285,358	53,899
10327	158	2	12/1/1991	0	68.11	257,793	48,726
10328	158	2	4/6/1994	0	72.51	203,125	37,234
10366	158	2	10/12/1991	0	71.12	226,845	41,569
10367	158	2	6/10/1997	0	64.04	385,614	59,359
10368	158	2	2/24/1996	0	70.14	332,076	43,867
10387	158	2	10/12/1991	0	61.09	334,206	68,094
10397	158	1	12/15/1996	0	75.22	169,034	33,202
10402	158	2	1/15/2013	0	65.42	299,756	56,594
10446	158	2	12/1/1992	0	69.46	126,515	46,254
10455	158	2	3/1/2002	0	67.39	271,370	51,276
10457	158	1	9/5/2007	0	50.16	654,070	104,178
10464	158	1	9/12/2014	0	64.50	347,141	56,594
10492	158	1	5/15/2000	0	61.32	361,712	68,094
10498	158	2	5/15/1992	0	75.59	85,586	31,291
10499	158	1	9/30/1996	0	43.02	349,878	127,917
10523	158	1	4/11/1995	0	66.87	306,272	51,276
10529	158	1	5/26/2000	0	66.26	277,209	53,899
10531	158	2	5/26/2000	0	72.88	184,054	37,234
10552	158	1	10/22/2015	0	65.63	331,277	53,899
10558	158	2	9/30/1994	0	66.17	269,388	53,899
10567	158	1	6/30/2000	0	51.60	266,273	97,350
10573	158	1	6/15/1991	0	38.06	917,533	143,581
10578	158	1	11/23/2015	0	56.91	399,718	80,674
10584	158	2	7/15/1996	0	79.41	153,050	26,000
10593	158	1	5/29/2000	0	62.00	345,542	65,108
10595	158	1	2/11/2010	0	73.01	210,114	37,234
10610	158	2	7/31/1999	0	66.67	405,535	51,276
10639	158	1	11/24/1996	0	41.32	750,516	134,380
10655	158	1	5/31/2017	0	61.08	334,206	68,094
10661	158	1	4/1/2015	0	67.22	297,032	51,276
10673	158	2	11/18/2011	0	65.02	275,535	56,594
10695	158	1	3/30/2000	0	42.38	712,783	131,175
10720	158	1	12/1/1992	0	52.39	552,429	97,350
10722	158	1	2/23/1997	0	47.99	668,502	111,035
10725	158	2	4/1/1993	0	76.03	143,914	31,291
10742	158	1	4/30/2018	0	63.94	333,005	59,359
10757	158	1	5/1/1992	0	55.38	238,644	87,249
10758	158	1	6/1/1994	0	41.11	766,214	134,380
10761	158	1	12/31/1999	0	51.18	559,851	100,760
10765	158	1	6/30/2002	0	49.75	284,949	104,178
Total Underground Bituminous						24,431,606	4,531,201
Average of 73 claims						62.77	62,071
Medical plus Indemnity							396,751

*Type is "WO" for Widow Only claims; 0 for all other claims.

Source: Individual claim detail from CMCRB.

PAB

**Coal Mine Compensation Rating Bureau
Individual Claim Detail for Federal Basic**

Page 3
Surface Anthracite
Class 153

ID No.	Class	Awd (2) Pend (1)	Exp. Date	Type*	Age of Miner at Comp. Date	Federal Benefit	Medical
926	153	2	2/29/1996	0	58.31	392,387	77,445
2157	153	1	10/10/1990	0	54.96	573,499	87,249
2299	153	2	1/15/1990	0	60.12	410,211	71,148
3725	153	2	9/30/1995	0	65.56	254,733	53,899
3955	153	2	10/29/1995	0	66.54	325,840	51,276
4749	153	2	1/3/1992	0	65.72	241,401	53,899
5044	153	2	2/4/1990	0	71.50	207,840	39,360
5131	153	2	5/22/1992	0	68.11	320,611	48,726
5372	153	2	3/10/1997	0	60.04	399,206	71,148
5952	153	2	1/31/1995	WO	N/A	121,501	-
6287	153	2	10/28/1990	0	73.92	185,485	35,184
6303	153	2	8/5/1990	WO	N/A	190,307	-
6581	153	2	6/5/1997	WO	N/A	200,172	-
7032	153	2	2/10/1993	0	62.41	365,181	65,108
7250	153	2	9/30/1993	WO	N/A	300,756	-
7263	153	2	3/1/1991	WO	N/A	200,172	-
7451	153	2	11/5/1990	0	72.80	190,102	37,234
9726	153	2	8/10/1995	0	68.28	274,054	48,726
9739	153	2	12/22/2000	0	73.86	213,054	35,184
9760	153	2	2/7/2000	0	75.44	187,553	33,202
9885	153	2	6/1/1998	0	66.88	263,474	51,276
9940	153	2	12/1/1990	0	63.20	479,986	62,197
10049	153	1	11/19/2005	0	61.99	345,542	65,108
10073	153	2	3/1/2005	0	60.49	388,583	71,148
10107	153	2	1/6/2004	0	56.26	427,425	83,944
10109	153	2	4/4/2003	0	65.00	154,796	56,594
10145	153	2	5/24/2007	0	59.55	421,596	71,148
10156	153	2	10/21/2002	0	75.14	208,877	33,202
10222	153	2	2/2/2006	0	74.97	194,343	33,202
10231	153	2	4/2/2003	0	65.03	291,352	56,594
10232	153	2	7/31/2004	0	56.70	420,085	80,674
10261	153	2	5/30/1996	0	67.25	297,032	51,276
10275	153	2	3/31/2003	0	68.92	295,808	46,254
10384	153	2	10/23/2007	0	76.31	85,586	31,291
10429	153	2	5/22/2013	0	54.36	499,159	90,588
10459	153	2	8/3/2009	0	57.34	409,707	80,674
10621	153	1	2/28/2013	0	63.34	358,944	62,197
10653	153	1	11/25/2016	0	48.87	525,840	107,604
10672	153	1	5/12/2013	0	65.49	299,756	56,594
10693	153	1	4/17/1992	0	38.90	828,339	140,595
10717	153	2	1/30/2008	0	70.84	226,845	41,569

Total Surface Anthracite		12,977,140	2,182,520
Average of 41 claims	64.29	316,516	53,232
Medical plus Indemnity		369,748	

*Type is "WO" for Widow Only claims; 0 for all other claims.
Source: Individual claim detail from CMCRB.

**Coal Mine Compensation Rating Bureau
Individual Claim Detail for Federal Basic**

Page 4
Surface Bituminous
Class 156

ID No.	Class	Awd (2) Pend (1)	Exp. Date	Type*	Age of Miner at Comp. Date	Federal Benefit	Medical
178	156	2	9/23/1994	0	70.19	247,156	43,867
600	156	2	9/10/1992	0	62.67	329,830	62,197
601	156	2	6/19/1992	0	66.18	302,658	53,899
1356	156	2	5/1/1995	0	55.30	530,920	87,249
2494	156	2	4/19/1996	0	64.66	336,922	56,594
3047	156	2	12/31/1996	0	77.58	150,976	27,690
3058	156	2	1/17/1991	0	65.64	311,831	53,899
5221	156	2	6/4/1995	0	66.01	277,209	53,899
5374	156	2	10/21/1991	WO	N/A	496,087	-
5483	156	2	8/6/1990	0	61.43	186,249	68,094
6244	156	2	10/10/1990	0	81.72	100,647	21,402
6949	156	2	12/7/1994	0	54.92	544,726	87,249
7245	156	2	9/1/1991	0	77.57	150,976	27,690
7248	156	2	8/31/1995	0	64.94	299,756	56,594
7893	156	2	2/19/1992	0	61.43	352,165	68,094
8012	156	2	1/1/1990	0	70.45	231,922	43,867
8022	156	2	11/1/1995	0	61.86	345,542	65,108
9761	156	2	9/30/1991	0	74.06	185,485	35,184
9767	156	2	6/1/2000	0	62.11	355,169	65,108
9795	156	2	12/1/1992	0	69.69	247,156	43,867
9866	156	2	9/20/1994	0	78.84	71,115	26,000
9945	156	2	8/31/1995	0	73.69	198,632	35,184
9953	156	2	3/1/1994	0	55.28	544,726	87,249
9961	156	2	5/31/2000	0	52.09	580,045	97,350
9967	156	2	1/15/1990	0	71.04	219,656	41,569
10003	156	2	5/30/1995	0	72.79	217,429	37,234
10104	156	2	6/1/1990	0	71.51	107,656	39,360
10112	156	2	12/1/2007	0	63.94	232,149	59,359
10114	156	2	10/26/1991	WO	N/A	171,367	-
10128	156	2	8/1/1994	0	74.82	187,553	33,202
10204	156	2	2/28/1992	0	69.75	255,260	43,867
10206	156	1	2/8/2010	0	62.67	391,442	62,197
10217	156	2	11/25/2008	0	63.72	305,903	59,359
10221	156	2	1/1/1993	0	81.01	119,756	22,842
10266	156	1	8/1/1996	0	67.24	288,143	51,276
10281	156	1	5/1/2011	0	68.47	133,275	48,726
10305	156	2	3/1/1995	0	61.87	365,181	65,108
10333	156	2	6/15/1992	0	80.08	66,690	24,382
10335	156	2	6/1/1995	WO	N/A	220,683	-
10351	156	2	12/27/2012	0	58.61	405,962	74,268
10385	156	2	3/1/2012	WO	N/A	242,275	-
10400	156	1	2/28/1993	0	80.02	149,572	24,382
10414	156	2	4/27/2001	0	75.85	204,894	31,291
10418	156	2	1/1/2003	0	73.15	217,429	37,234
10447	156	2	12/1/2008	0	76.83	166,602	29,452
10458	156	2	11/1/2008	0	73.78	198,632	35,184
10517	156	2	4/1/2014	0	67.97	265,761	48,726
10521	156	2	5/1/1996	0	67.14	297,032	51,276
10554	156	2	4/13/2015	0	76.53	172,887	29,452
10566	156	2	8/31/2001	0	76.17	153,722	31,291
10604	156	1	5/1/2001	0	60.37	378,342	71,148
10609	156	2	7/1/1996	0	68.92	260,389	46,254
10679	156	1	10/1/2008	0	51.30	534,064	100,760
10684	156	1	12/22/1998	0	50.54	559,851	100,760
10688	156	1	5/1/1996	0	40.36	742,389	137,523
10690	156	1	8/1/1995	0	45.64	683,177	117,869
10692	156	1	11/1/1994	0	51.61	705,053	97,350
10694	156	2	8/1/1992	0	76.16	148,664	31,291
10747	156	1	1/1/1991	0	42.76	662,090	127,917
10756	156	1	10/1/1991	0	34.98	807,002	151,991
10760	156	1	9/1/1998	0	44.34	340,828	124,608
10767	156	1	1/1/2005	0	54.79	456,521	87,249
10771	156	1	9/1/2013	0	66.63	140,249	51,276
10774	156	1	6/1/2012	0	63.74	323,604	59,359
10779	156	1	11/1/2014	0	70.49	255,260	43,867

Total Surface Bituminous		20,132,295	3,597,594
Average of 65 claims	65.34	309,728	55,348
Medical plus Indemnity		365,075	

*Type is "WO" for Widow Only claims; 0 for all other claims.
Source: Individual claim detail from CMCRB.

PAB

**Coal Mine Compensation Rating Bureau
Individual Claim Detail for Federal Basic**

Page 5
Six Minor Classes
Class - Other

ID No.	Class	Awd (2) Pend (1)	Exp. Date	Type*	Age of Miner at Comp. Date	Federal Benefit	Medical
10588	157	1	2/1/2010	0	72.29	229,601	39,360
3158	181	2	3/14/1997	0	62.00	365,181	65,108
9904	183	2	12/31/1997	WO	N/A	145,109	-
9992	183	2	7/22/2004	0	71.54	222,019	39,360
10620	183	1	10/1/2013	0	53.08	519,009	93,957
10135	184	2	2/1/2002	0	75.55	237,946	31,291
10244	184	1	1/1/1999	0	62.23	386,341	65,108
10338	184	2	10/15/2005	0	68.77	126,515	46,254
10456	184	1	7/1/2006	0	56.10	417,134	83,944
10750	184	1	6/30/2014	0	57.92	347,773	77,445
10751	184	1	11/1/2014	0	59.09	395,417	74,268

Total Other Classes		3,392,046	616,095
Average of 11 claims	63.86	308,368	56,009
Medical plus Indemnity		364,376	

*Type is "WO" for Widow Only claims; 0 for all other claims.
Source: Individual claim detail from CMCRB.

COAL MINE COMPENSATION RATING BUREAU
Summary of Developed & Adjusted Payrolls
Traumatic

Exhibit X-A

Page 1

	Anthracite Underground	Bituminous Underground	Anthracite Surface	Bituminous Surface	Coke	Auger	Anthracite Co-gen	Bituminous Co-gen	Anthracite Prep Plant	Bituminous Prep Plant	Total
<u>Traumatic</u>	<u>(1010)</u>	<u>(1001)</u>	<u>(1012)</u>	<u>(1014)</u>	<u>(1469)</u>	<u>(1015)</u>	<u>(1021)</u>	<u>(1023)</u>	<u>(1025)</u>	<u>(1027)</u>	
1979	Payroll data for these years is not readily available										
1980											
1981											
1982											
1983											
1984											
1985											
1986											
1987											
1988											
1989											
1990											
1991											
1992											
1993											
1994											
1995											
1996											
1997	591,339	71,376,959	17,783,135	67,905,789	53,119,079	1,193,492	3,520,161	856,052	1,149,401	13,783,647	231,279,054
1998	507,288	62,342,332	17,376,290	63,651,561	13,353,903	1,237,897	3,458,775	1,161,196	1,032,902	11,112,104	175,234,248
1999	537,329	59,962,066	18,441,144	54,162,273	12,293,477	1,136,891	3,604,305	1,494,276	1,231,124	10,691,780	163,554,665
2000	336,885	48,553,836	16,807,810	49,935,622	12,092,574	1,205,877	4,473,458	1,870,720	1,319,466	8,574,760	145,171,008
2001	434,499	49,724,653	13,940,797	58,151,332	10,375,826	1,429,131	5,234,468	2,121,331	3,609,649	10,155,025	155,176,711
2002	197,351	50,439,544	12,251,258	53,502,085	10,485,005	1,150,843	6,358,543	2,386,124	3,781,693	12,649,826	153,202,272
2003	75,855	55,493,906	12,166,211	47,873,740	11,534,080	1,102,223	7,137,655	3,052,523	3,721,296	14,752,318	156,909,807
2004	-	66,842,986	12,359,731	56,217,298	12,049,126	1,058,799	7,351,514	6,374,483	4,406,653	18,067,286	184,727,876
2005	-	72,290,188	12,140,911	64,871,562	12,860,979	1,026,537	7,855,289	8,524,752	5,170,069	17,690,358	202,430,645
2006	530	71,907,931	11,946,382	63,008,975	12,737,394	1,066,831	8,405,393	9,397,580	4,885,882	17,050,967	200,407,865
2007	-	81,566,803	14,555,579	63,295,774	13,669,925	1,121,156	9,160,450	10,789,214	5,756,439	18,895,192	218,810,532
2008	-	103,490,690	16,954,313	73,054,482	9,761,146	2,488,558	7,958,335	8,468,561	6,390,767	21,250,256	249,817,108
2009	-	102,684,006	16,445,462	61,784,394	5,173,552	926,163	8,004,644	7,866,413	6,749,748	19,828,012	229,462,394
2010	5,700	126,687,464	14,295,288	72,711,558	5,435,658	806,696	8,481,228	8,732,701	5,762,086	26,313,130	269,231,509
2011	110,125	149,633,528	21,034,600	86,074,064	3,599,086	1,176,255	11,720,035	9,102,411	7,236,583	35,155,068	324,841,755
2012	219,407	154,428,761	26,295,907	76,452,811	5,738,105	808,208	10,273,004	9,047,745	8,671,140	34,211,729	326,146,817
2013	175,900	149,953,068	22,449,824	61,349,745	4,791,910	1,025,399	8,342,651	10,355,884	8,265,665	34,253,697	300,963,743
2014	258,809	271,230,707	20,466,075	54,050,731	4,464,398	806,976	9,060,883	11,721,184	8,234,771	43,520,040	423,814,574
2015	254,336	216,454,460	24,218,779	40,934,048	4,340,376	582,619	10,469,089	11,748,205	7,606,274	33,564,176	350,172,362
2016	163,760	148,556,407	20,873,611	29,127,089	4,435,066	372,496	8,994,602	11,327,552	7,018,927	23,689,882	254,559,392
2017	252,383	172,800,836	21,167,074	33,140,780	4,566,113	449,009	8,819,700	11,435,057	7,746,154	28,816,678	289,193,784
2018	183,346	179,699,685	19,677,526	35,266,431	4,456,795	560,126	11,591,488	11,996,610	9,643,085	32,053,553	305,128,645

Source: Exhibits X-C and X-D
Prior filings for 2007 and prior.

COAL MINE COMPENSATION RATING BUREAU
Summary of Developed & Adjusted Payrolls
State Occupational Disease

Exhibit X-A

Page 2

State OD	Anthracite Underground	Bituminous Underground	Anthracite Surface	Bituminous Surface	Coke	Auger	Anthracite Co-gen	Bituminous Co-gen	Anthracite Prep Plant	Bituminous Prep Plant	Total
	(1011)	(1002)	(1016)	(1013)	(1017)	(1019)	(1022)	(1024)	(1026)	(1028)	
1979	3,398,172	155,459,760	33,547,630	189,274,623	8,602,156	1,250,040	-	-	-	-	391,532,381
1980	3,933,740	146,370,736	39,976,938	180,192,249	4,240,988	1,445,092	-	-	-	-	376,159,743
1981	4,989,959	141,497,489	45,905,609	193,710,747	3,521,616	1,581,422	-	-	-	-	391,206,842
1982	5,295,887	170,306,624	42,724,737	194,074,092	1,831,640	1,682,037	-	-	-	-	415,915,017
1983	4,169,015	82,776,145	34,841,224	146,423,067	124,805	1,260,780	-	-	-	-	269,595,036
1984	4,137,720	77,024,693	34,531,000	174,212,221	2,078,069	1,778,957	-	-	-	-	293,762,660
1985	4,507,670	46,693,499	31,216,341	143,422,695	2,528,033	1,561,675	-	-	-	-	229,929,913
1986	4,896,054	43,203,448	32,077,958	136,641,573	19,044,481	1,669,241	-	-	-	-	237,532,755
1987	4,061,875	55,036,577	25,008,155	134,305,891	26,573,681	1,695,582	-	-	-	-	246,681,761
1988	2,745,685	64,843,301	23,099,360	126,493,210	18,498,632	1,626,194	-	-	-	-	237,306,382
1989	2,066,292	74,335,286	27,044,506	125,361,713	12,583,451	1,888,442	-	-	-	-	243,279,690
1990	1,547,051	77,524,448	32,392,891	124,189,071	61,308,712	2,295,585	676,180	-	-	-	299,933,938
1991	718,147	59,439,370	30,956,584	104,583,500	52,451,102	1,718,758	1,093,089	-	-	-	250,960,550
1992	932,801	63,646,939	29,476,120	100,999,381	42,761,324	1,181,625	3,505,476	47,640	-	-	242,551,306
1993	1,181,997	52,756,526	30,103,392	94,556,592	53,619,736	1,112,232	3,624,439	391,507	-	-	237,346,421
1994	1,310,675	60,590,938	30,210,452	92,464,635	54,721,324	1,485,044	3,704,499	377,617	-	-	244,865,184
1995	1,493,523	65,271,146	20,288,894	78,752,605	55,000,220	1,499,639	3,481,847	360,161	-	-	226,148,035
1996	1,612,698	75,223,041	16,192,165	77,828,405	54,571,209	846,623	3,758,973	370,201	221,068	3,066,567	233,690,950
1997	1,571,605	70,396,693	17,783,135	67,905,789	53,119,079	1,193,492	3,520,161	856,052	1,149,401	13,783,647	231,279,054
1998	1,762,286	61,087,334	17,376,290	63,651,561	13,353,903	1,237,897	3,458,775	1,161,196	1,032,902	11,112,104	175,234,248
1999	1,814,157	58,685,238	18,441,144	54,162,273	12,293,477	1,136,891	3,604,305	1,494,276	1,231,124	10,691,780	163,554,665
2000	1,370,159	47,520,562	16,807,810	49,935,622	12,092,574	1,205,877	4,473,458	1,870,720	1,319,466	8,574,760	145,171,008
2001	1,636,522	48,522,630	13,940,797	58,151,332	10,375,826	1,429,131	5,234,468	2,121,331	3,609,649	10,155,025	155,176,711
2002	1,386,545	49,250,350	12,251,258	53,502,085	10,485,005	1,150,843	6,358,543	2,386,124	3,781,693	12,649,826	153,202,272
2003	1,354,265	54,215,496	12,166,211	47,873,740	11,534,080	1,102,223	7,137,655	3,052,523	3,721,296	14,752,318	156,909,807
2004	1,345,321	65,497,665	12,359,731	56,217,298	12,049,126	1,058,799	7,351,514	6,374,483	4,406,653	18,067,286	184,727,876
2005	1,417,568	70,872,620	12,140,911	64,871,562	12,860,979	1,026,537	7,855,289	8,524,752	5,170,069	17,690,358	202,430,645
2006	1,442,524	70,465,937	11,946,382	63,008,975	12,737,394	1,066,831	8,405,393	9,397,580	4,885,882	17,050,967	200,407,865
2007	1,662,537	79,904,266	14,555,579	63,295,774	13,669,925	1,121,156	9,160,450	10,789,214	5,756,439	18,895,192	218,810,532
2008	2,136,713	101,353,977	16,954,313	73,054,482	9,761,146	2,488,558	7,958,335	8,468,561	6,390,767	21,250,256	249,817,108
2009	1,335,866	101,348,140	16,445,462	61,784,394	5,173,552	926,163	8,004,644	7,866,413	6,749,748	19,828,012	229,462,394
2010	1,299,588	125,393,576	14,295,288	72,711,558	5,435,658	806,696	8,481,228	8,732,701	5,762,086	26,313,130	269,231,509
2011	1,257,944	148,485,709	21,034,600	86,074,064	3,599,086	1,176,255	11,720,035	9,102,411	7,236,583	35,155,068	324,841,755
2012	1,029,260	153,618,908	26,295,907	76,452,811	5,738,105	808,208	10,273,004	9,047,745	8,671,140	34,211,729	326,146,817
2013	381,876	149,747,092	22,449,824	61,349,745	4,791,910	1,025,399	8,342,651	10,355,884	8,265,665	34,253,697	300,963,743
2014	258,809	271,230,707	20,466,075	54,050,731	4,464,398	806,976	9,060,883	11,721,184	8,234,771	43,520,040	423,814,574
2015	254,336	216,454,460	24,218,779	40,934,048	4,340,376	582,619	10,469,089	11,748,205	7,606,274	33,564,176	350,172,362
2016	163,760	148,556,407	20,873,611	29,127,089	4,435,066	372,496	8,994,602	11,327,552	7,018,927	23,689,882	254,559,392
2017	252,383	172,800,836	21,167,074	33,140,780	4,566,113	449,009	8,819,700	11,435,057	7,746,154	28,816,678	289,193,784
2018	183,346	179,699,685	19,677,526	35,266,431	4,456,795	560,126	11,591,488	11,996,610	9,643,085	32,053,553	305,128,645

Source: Exhibits X-C and X-D
Prior filings for 2007 and prior.

COAL MINE COMPENSATION RATING BUREAU
Summary of Developed & Adjusted Payrolls
Federal Occupational Disease

Exhibit X-A

Page 3

Federal OD	Anthracite Underground	Bituminous Underground	Anthracite Surface	Bituminous Surface	Coke	Auger	Anthracite Co-gen	Bituminous Co-gen	Anthracite Prep Plant	Bituminous Prep Plant	Total
	(0160)	(0158)	(0153)	(0156)	(0154)	(0157)	(0181)	(0182)	(0183)	(0184)	
1979	3,398,172	155,459,760	33,547,630	189,274,623	8,602,156	1,250,040	-	-	-	-	391,532,381
1980	3,933,740	146,370,736	39,976,938	180,192,249	4,240,988	1,445,092	-	-	-	-	376,159,743
1981	4,989,959	141,497,489	45,905,609	193,710,747	3,521,616	1,581,422	-	-	-	-	391,206,842
1982	5,295,887	170,306,624	42,724,737	194,074,092	1,831,640	1,682,037	-	-	-	-	415,915,017
1983	4,169,015	82,776,145	34,841,224	146,423,067	124,805	1,260,780	-	-	-	-	269,595,036
1984	4,137,720	77,024,693	34,531,000	174,212,221	2,078,069	1,778,957	-	-	-	-	293,762,660
1985	4,507,670	46,693,499	31,216,341	143,422,695	2,528,033	1,561,675	-	-	-	-	229,929,913
1986	4,896,054	43,203,448	32,077,958	136,641,573	19,044,481	1,669,241	-	-	-	-	237,532,755
1987	4,061,875	42,076,700	25,008,155	134,305,891	26,573,681	1,695,582	-	-	-	-	233,721,884
1988	2,745,685	51,133,431	23,099,360	126,493,210	18,498,632	1,626,194	-	-	-	-	223,596,512
1989	2,066,292	58,507,532	27,044,506	125,361,713	12,583,451	1,888,442	-	-	-	-	227,451,936
1990	1,547,051	63,271,520	32,392,891	124,189,071	61,308,712	2,295,585	676,180	-	-	-	285,681,010
1991	718,147	58,318,242	30,956,584	104,583,500	52,451,102	1,718,758	1,093,089	-	-	-	249,839,422
1992	932,801	63,401,297	29,476,120	100,999,381	42,761,324	1,181,625	3,505,476	47,640	-	-	242,305,664
1993	1,181,997	52,756,526	30,103,392	94,556,592	53,619,736	1,112,232	3,624,439	391,507	-	-	237,346,421
1994	1,310,675	60,590,938	30,210,452	92,464,635	54,721,324	1,485,044	3,704,499	377,617	-	-	244,865,184
1995	1,493,523	65,271,146	20,288,894	78,752,605	55,000,220	1,499,639	3,481,847	360,161	-	-	226,148,035
1996	1,612,698	75,223,041	16,192,165	77,828,405	54,571,209	846,623	3,758,973	370,201	221,068	3,066,567	233,690,950
1997	1,571,605	70,396,693	17,783,135	67,905,789	53,119,079	1,193,492	3,520,161	856,052	1,149,401	13,783,647	231,279,054
1998	1,762,286	61,087,334	17,376,290	63,651,561	13,353,903	1,237,897	3,458,775	1,161,196	1,032,902	11,112,104	175,234,248
1999	1,814,157	58,685,238	18,441,144	54,162,273	12,293,477	1,136,891	3,604,305	1,494,276	1,231,124	10,691,780	163,554,665
2000	1,370,159	47,520,562	16,807,810	49,935,622	12,092,574	1,205,877	4,473,458	1,870,720	1,319,466	8,574,760	145,171,008
2001	1,636,522	48,522,630	12,923,748	58,151,332	10,375,826	1,429,131	4,661,813	2,121,331	2,216,299	10,155,025	152,193,657
2002	1,386,545	40,837,995	11,046,570	53,502,085	10,485,005	1,150,843	5,658,774	2,386,124	2,322,815	10,094,549	138,871,305
2003	1,354,265	36,498,406	11,928,209	47,873,740	11,534,080	1,102,223	7,009,619	3,052,523	3,407,998	10,195,206	133,956,269
2004	1,345,321	46,073,900	12,359,731	56,217,298	12,049,126	1,058,799	7,351,514	6,374,483	4,406,653	13,460,201	160,697,026
2005	1,417,568	66,275,755	12,140,911	64,871,562	12,860,979	1,026,537	7,855,289	8,524,752	5,170,069	16,548,307	196,691,729
2006	1,442,524	70,465,937	12,065,323	63,798,502	12,737,394	1,066,831	8,412,527	9,423,575	4,885,882	17,050,967	201,349,462
2007	1,662,537	79,904,266	14,866,556	64,808,093	13,669,925	1,121,156	9,186,706	10,829,140	5,817,291	18,895,192	220,760,862
2008	2,136,713	101,353,977	16,220,231	74,601,231	9,761,146	2,506,758	7,521,400	8,481,888	5,733,543	21,250,256	249,567,143
2009	1,335,866	101,348,140	15,893,528	63,306,695	5,173,552	946,963	7,534,735	7,866,413	6,264,606	19,828,012	229,498,510
2010	1,299,588	125,393,576	13,319,185	74,255,177	5,435,658	827,496	7,958,048	8,732,701	4,876,927	26,313,130	268,411,486
2011	1,257,944	148,485,709	19,507,428	87,730,506	3,599,086	1,176,255	10,981,642	9,102,411	6,123,259	35,155,068	323,119,308
2012	1,029,260	153,618,908	24,734,711	77,890,500	5,738,105	808,208	9,311,812	9,047,745	7,569,023	34,211,729	323,960,001
2013	381,876	145,146,253	20,720,014	62,718,061	4,791,910	1,046,947	7,630,762	10,355,884	7,074,886	33,639,969	293,506,562
2014	258,809	183,431,952	18,911,339	55,368,615	4,464,398	861,590	8,360,898	11,721,184	6,521,541	31,854,431	321,754,757
2015	254,336	140,570,275	22,234,350	42,000,092	4,340,376	654,766	9,554,806	11,748,205	6,196,596	24,320,608	261,874,410
2016	163,760	118,545,477	19,257,107	30,131,218	4,435,066	392,776	7,953,309	11,327,552	5,542,968	20,079,401	217,828,634
2017	252,383	172,800,836	19,094,634	34,248,962	4,566,113	566,324	7,793,558	11,435,057	6,056,810	28,816,678	285,631,355
2018	183,346	179,746,573	18,332,737	36,110,426	4,456,795	560,126	10,018,416	11,996,610	6,888,320	32,053,553	300,346,902

Source: Exhibits X-C and X-D
Prior filings for 2007 and prior.

COAL MINE COMPENSATION RATING BUREAU
TRAUMATIC LOSS COST PREMIUM

Exhibit X-B
Page 1

ANTHRACITE UNDERGROUND (1010)				BITUMINOUS UNDERGROUND (1001)			ANTHRACITE SURFACE (1012)			BITUMINOUS SURFACE (1014)		
YEAR	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM
2008	21.59	0	0	6.87	103,490,690	7,109,810	10.28	16,954,313	1,742,903	2.09	73,054,482	1,526,839
2009	21.59	0	0	6.87	102,684,006	7,054,391	10.28	16,445,462	1,690,593	2.09	61,784,394	1,291,294
2010	21.59	5,700	1,231	6.87	126,687,464	8,703,429	10.28	14,295,288	1,469,556	2.09	72,711,558	1,519,672
2011	21.59	110,125	23,776	6.87	149,633,528	10,279,823	10.28	21,034,600	2,162,357	2.09	86,074,064	1,798,948
2012	21.59	219,407	47,370	6.87	154,428,761	10,609,256	10.28	26,295,907	2,703,219	2.09	76,452,811	1,597,864
2013	21.59	175,900	37,977	6.87	149,953,068	10,301,776	10.28	22,449,824	2,307,842	2.09	61,349,745	1,282,210
2014	21.59	258,809	55,877	6.87	271,230,707	18,633,550	10.28	20,466,075	2,103,913	2.09	54,050,731	1,129,660
2015	21.59	254,336	54,911	6.87	216,454,460	14,870,421	10.28	24,218,779	2,489,690	2.09	40,934,048	855,522
2016	21.59	163,760	35,356	6.87	148,556,407	10,205,825	10.28	20,873,611	2,145,807	2.09	29,127,089	608,756
2017	21.59	252,383	54,489	6.87	172,800,836	11,871,417	10.28	21,167,074	2,175,975	2.09	33,140,780	692,642
2018	21.59	183,346	39,584	6.87	179,699,685	12,345,368	10.28	19,677,526	2,022,850	2.09	35,266,431	737,068

COKE (1469)				AUGER (1015)			ANTHRACITE CO-GEN (1021)			BITUMINOUS CO-GEN (1023)		
YEAR	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM
2008	3.57	9,761,146	348,473	11.21	2,488,558	278,967	4.86	7,958,335	386,775	1.37	8,468,561	116,019
2009	3.57	5,173,552	184,696	11.21	926,163	103,823	4.86	8,004,644	389,026	1.37	7,866,413	107,770
2010	3.57	5,435,658	194,053	11.21	806,696	90,431	4.86	8,481,228	412,188	1.37	8,732,701	119,638
2011	3.57	3,599,086	128,487	11.21	1,176,255	131,858	4.86	11,720,035	569,594	1.37	9,102,411	124,703
2012	3.57	5,738,105	204,850	11.21	808,208	90,600	4.86	10,273,004	499,268	1.37	9,047,745	123,954
2013	3.57	4,791,910	171,071	11.21	1,025,399	114,947	4.86	8,342,651	405,453	1.37	10,355,884	141,876
2014	3.57	4,464,398	159,379	11.21	806,976	90,462	4.86	9,060,883	440,359	1.37	11,721,184	160,580
2015	3.57	4,340,376	154,951	11.21	582,619	65,312	4.86	10,469,089	508,798	1.37	11,748,205	160,950
2016	3.57	4,435,066	158,332	11.21	372,496	41,757	4.86	8,994,602	437,138	1.37	11,327,552	155,187
2017	3.57	4,566,113	163,010	11.21	449,009	50,334	4.86	8,819,700	428,637	1.37	11,435,057	156,660
2018	3.57	4,456,795	159,108	11.21	560,126	62,790	4.86	11,591,488	563,346	1.37	11,996,610	164,354

ANTHRACITE PREP PLANT (1025)				BITUMINOUS PREP PLANT (1027)			TOTAL	
YEAR	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	LOSS COST	DEVELOPED PAYROLL	LOSS COST PREMIUM	DEVELOPED PAYROLL	LOSS COST PREMIUM
2008	4.53	6,390,767	289,502	2.81	21,250,256	597,132	249,817,108	12,396,420
2009	4.53	6,749,748	305,764	2.81	19,828,012	557,167	229,462,394	11,684,524
2010	4.53	5,762,086	261,022	2.81	26,313,130	739,399	269,231,509	13,510,619
2011	4.53	7,236,583	327,817	2.81	35,155,068	987,857	324,841,755	16,535,220
2012	4.53	8,671,140	392,803	2.81	34,211,729	961,350	326,146,817	17,230,534
2013	4.53	8,265,665	374,435	2.81	34,253,697	962,529	300,963,743	16,100,116
2014	4.53	8,234,771	373,035	2.81	43,520,040	1,222,913	423,814,574	24,369,728
2015	4.53	7,606,274	344,564	2.81	33,564,176	943,153	350,172,362	20,448,272
2016	4.53	7,018,927	317,957	2.81	23,689,882	665,686	254,559,392	14,771,801
2017	4.53	7,746,154	350,901	2.81	28,816,678	809,749	289,193,784	16,753,814
2018	4.53	9,643,085	436,832	2.81	32,053,553	900,705	305,128,645	17,432,005

Payroll - Exhibit X-D, pages 1, 2, 3, 4 and 5; Loss Costs - Exhibit X-B Page 2

Coal Mine Compensation Rating Bureau
Traumatic & OD Loss costs
Approved Effective April 1, 2019

Exhibit X-B

Page 2

<u>CLASS DESCRIPTION</u>	<u>CLASS CODE</u>	<u>CURRENT MANUAL LOSS COST</u>	<u>CLASS CODE</u>	<u>CURRENT MANUAL LOSS COST</u>	<u>CLASS CODE</u>	<u>CURRENT MANUAL LOSS COST</u>
	TRAUMATIC		STATE O D		FEDERAL O D	
UNDERGROUND						
Anthracite	1010	\$21.59	1011	\$10.30	0160	\$10.02
Bituminous	1001	\$6.87	1002	\$0.50	0158	\$0.58
SURFACE						
Anthracite	1012	\$10.28	1016	\$1.36	0153	\$2.13
Bituminous	1014	\$2.09	1013	\$0.20	0156	\$0.89
COKE	1469	\$3.57	1017	\$0.08	0154	\$0.10
AUGER	1015	\$11.21	1019	\$0.18	0157	\$0.43
CO-GEN						
Anthracite	1021	\$4.86	1022	\$0.27	0181	\$0.38
Bituminous	1023	\$1.37	1024	\$0.25	0182	\$0.31
PREP PLANT						
Anthracite	1025	\$4.53	1026	\$2.47	0183	\$0.90
Bituminous	1027	\$2.81	1028	\$0.13	0184	\$0.33

<u>CLASS DESCRIPTION</u>	<u>CLASS CODE</u>	<u>UNLOADED APPROVED LOSS COST</u>	<u>CLASS CODE</u>	<u>UNLOADED APPROVED LOSS COST</u>	<u>CLASS CODE</u>	<u>UNLOADED APPROVED LOSS COST</u>
	TRAUMATIC		STATE O D		FEDERAL O D	
UNDERGROUND						
Anthracite	1010	\$21.08	1011	\$10.30	0160	\$10.02
Bituminous	1001	\$6.59	1002	\$0.50	0158	\$0.58
SURFACE						
Anthracite	1012	\$10.10	1016	\$1.36	0153	\$2.13
Bituminous	1014	\$2.04	1013	\$0.20	0156	\$0.89
COKE	1469	\$3.49	1017	\$0.08	0154	\$0.10
AUGER	1015	\$10.96	1019	\$0.18	0157	\$0.43
CO-GEN						
Anthracite	1021	\$4.76	1022	\$0.27	0181	\$0.38
Bituminous	1023	\$1.33	1024	\$0.25	0182	\$0.31
PREP PLANT						
Anthracite	1025	\$4.44	1026	\$2.47	0183	\$0.90
Bituminous	1027	\$2.75	1028	\$0.13	0184	\$0.33

Source: Current Manual Loss Costs from Exhibit I-A-M approved filing effective April 1, 2019
 Unloaded Approved Loss Costs from Exhibit I-A-UL approved filing effective April 1, 2019

**Coal Mine Compensation Rating Bureau
Adjustments from 2019 Filing**

Exhibit X-B

Page 3

Section 1 Catastrophic Loss Cost (2019)

Underground	
Anthracite	0.17
Bituminous	0.17
Auger	0.07 (1/3 Underground, 2/3 Surface)
Other Classes	0.02

Section 2 Load Factors (2019)

Experience Rating	1.0000
Merit Rating (Exh XIV-A, page 1)	1.0002
Safety Committee (Exh. XIV-B)	1.0158
	<hr/>
	1.0160
Small Business Advocate (XI-A)	1.0001

COAL MINE COMPENSATION RATING BUREAU
FEDERAL OD PAYROLL

Exhibit X-C
Page 1

ANTHRACITE UNDERGROUND (1010)

	State OD					Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development		Payroll	Per Million
	Payroll	Reported Payroll	Reported Payroll	Factor		(1) + [(3)-(2)]*(4)	(5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)	(6)
2008	2,136,713	0	0	1.0000	2,136,713	2.136713	
2009	1,335,866	0	0	1.0000	1,335,866	1.335866	
2010	1,299,588	0	0	1.0000	1,299,588	1.299588	
2011	1,257,944	0	0	1.0000	1,257,944	1.257944	
2012	1,029,260	0	0	1.0000	1,029,260	1.029260	
2013	381,876	0	0	1.0000	381,876	0.381876	
2014	258,809	0	0	1.0000	258,809	0.258809	
2015	254,336	0	0	1.0000	254,336	0.254336	
2016	163,760	0	0	1.0000	163,760	0.163760	
2017	252,383	0	0	1.0000	252,383	0.252383	
2018	183,346	0	0	1.0000	183,346	0.183346	

BITUMINOUS UNDERGROUND (1001)

	State OD					Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development		Payroll	Per Million
	Payroll	Reported Payroll	Reported Payroll	Factor		(1) + [(3)-(2)]*(4)	(5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)	(6)
2008	101,353,977	0	0	1.0000	101,353,977	101.353977	
2009	101,348,140	0	0	1.0000	101,348,140	101.348140	
2010	125,393,576	0	0	1.0000	125,393,576	125.393576	
2011	148,485,709	0	0	1.0000	148,485,709	148.485709	
2012	153,618,908	0	0	1.0000	153,618,908	153.618908	
2013	149,747,092	4,600,839	0	1.0000	145,146,253	145.146253	
2014	271,230,707	87,798,755	0	1.0000	183,431,952	183.431952	
2015	216,454,460	75,884,185	0	1.0000	140,570,275	140.570275	
2016	148,556,407	30,010,930	0	1.0000	118,545,477	118.545477	
2017	172,800,836	0	0	1.0000	172,800,836	172.800836	
2018	179,699,685	0	46,618	1.0058	179,746,573	179.746573	

ANTHRACITE SURFACE (1012)

	State OD					Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development		Payroll	Per Million
	Payroll	Reported Payroll	Reported Payroll	Factor		(1) + [(3)-(2)]*(4)	(5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)	(6)
2008	16,954,313	1,047,741	313,659	1.0000	16,220,231	16.220231	
2009	16,445,462	903,752	351,818	1.0000	15,893,528	15.893528	
2010	14,295,288	1,205,978	229,875	1.0000	13,319,185	13.319185	
2011	21,034,600	1,929,891	402,719	1.0000	19,507,428	19.507428	
2012	26,295,907	1,973,449	412,253	1.0000	24,734,711	24.734711	
2013	22,449,824	2,307,223	577,413	1.0000	20,720,014	20.720014	
2014	20,466,075	2,210,807	656,071	1.0000	18,911,339	18.911339	
2015	24,218,779	2,669,091	684,662	1.0000	22,234,350	22.234350	
2016	20,873,611	2,378,155	761,651	1.0000	19,257,107	19.257107	
2017	21,167,074	2,801,185	728,745	1.0000	19,094,634	19.094634	
2018	19,677,526	1,971,490	637,771	1.0083	18,332,737	18.332737	

BITUMINOUS SURFACE (1014)

	State OD					Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development		Payroll	Per Million
	Payroll	Reported Payroll	Reported Payroll	Factor		(1) + [(3)-(2)]*(4)	(5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)	(6)
2008	73,054,482	0	1,546,749	1.0000	74,601,231	74.601231	
2009	61,784,394	0	1,522,301	1.0000	63,306,695	63.306695	
2010	72,711,558	0	1,543,619	1.0000	74,255,177	74.255177	
2011	86,074,064	0	1,656,442	1.0000	87,730,506	87.730506	
2012	76,452,811	0	1,437,689	1.0000	77,890,500	77.890500	
2013	61,349,745	0	1,368,316	1.0000	62,718,061	62.718061	
2014	54,050,731	0	1,317,884	1.0000	55,368,615	55.368615	
2015	40,934,048	0	1,066,044	1.0000	42,000,092	42.000092	
2016	29,127,089	0	1,004,129	1.0000	30,131,218	30.131218	
2017	33,140,780	0	1,108,182	1.0000	34,248,962	34.248962	
2018	35,266,431	0	843,995	1.0000	36,110,426	36.110426	

Source: Anthracite Underground (1010) - Exhibit X-C, page 4
 Bituminous Underground (1001) - Exhibit X-C, page 4
 Anthracite Surface (1012) - Exhibit X-D, page 2
 Bituminous Surface (1014) - Exhibit X-D, page 2

COAL MINE COMPENSATION RATING BUREAU
Federal OD Payrolls

Exhibit X-C
Page 2

COKE (1469)

	State OD Developed Payroll	Federal Exempt Reported Payroll	Partnership Reported Payroll	Development Factor	Federal OD Payroll (1) + [(3)-(2)]*(4)	Payroll Per Million (5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)
2008	9,761,146	0	0	1.0000	9,761,146	9.761146
2009	5,173,552	0	0	1.0000	5,173,552	5.173552
2010	5,435,658	0	0	1.0000	5,435,658	5.435658
2011	3,599,086	0	0	1.0000	3,599,086	3.599086
2012	5,738,105	0	0	1.0000	5,738,105	5.738105
2013	4,791,910	0	0	1.0000	4,791,910	4.791910
2014	4,464,398	0	0	1.0000	4,464,398	4.464398
2015	4,340,376	0	0	1.0000	4,340,376	4.340376
2016	4,435,066	0	0	1.0000	4,435,066	4.435066
2017	4,566,113	0	0	1.0000	4,566,113	4.566113
2018	4,456,795	0	0	1.0186	4,456,795	4.456795

AUGER (1015)

	State OD Developed Payroll	Federal Exempt Reported Payroll	Partnership Reported Payroll	Development Factor	Federal OD Payroll (1) + [(3)-(2)]*(4)	Payroll Per Million (5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)
2008	2,488,558	0	18,200	1.0000	2,506,758	2.506758
2009	926,163	0	20,800	1.0000	946,963	0.946963
2010	806,696	0	20,800	1.0000	827,496	0.827496
2011	1,176,255	0	0	1.0000	1,176,255	1.176255
2012	808,208	0	0	1.0000	808,208	0.808208
2013	1,025,399	0	21,548	1.0000	1,046,947	1.046947
2014	806,976	0	54,614	1.0000	861,590	0.861590
2015	582,619	0	72,147	1.0000	654,766	0.654766
2016	372,496	0	20,280	1.0000	392,776	0.392776
2017	449,009	0	117,315	1.0000	566,324	0.566324
2018	560,126	0	0	1.0000	560,126	0.560126

ANTHRACITE CO-GEN (1021)

	State OD Developed Payroll	Federal Exempt Reported Payroll	Partnership Reported Payroll	Development Factor	Federal OD Payroll (1) + [(3)-(2)]*(4)	Payroll Per Million (5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)
2008	7,958,335	477,298	40,363	1.0000	7,521,400	7.521400
2009	8,004,644	505,653	35,744	1.0000	7,534,735	7.534735
2010	8,481,228	594,188	71,008	1.0000	7,958,048	7.958048
2011	11,720,035	827,364	88,971	1.0000	10,981,642	10.981642
2012	10,273,004	1,025,112	63,920	1.0000	9,311,812	9.311812
2013	8,342,651	792,519	80,630	1.0000	7,630,762	7.630762
2014	9,060,883	838,824	138,839	1.0000	8,360,898	8.360898
2015	10,469,089	1,048,903	134,620	1.0000	9,554,806	9.554806
2016	8,994,602	1,137,185	95,892	1.0000	7,953,309	7.953309
2017	8,819,700	1,121,002	94,860	1.0000	7,793,558	7.793558
2018	11,591,488	1,704,620	131,548	1.0000	10,018,416	10.018416

BITUMINOUS CO-GEN (1023)

	State OD Payroll	Federal Exempt Reported Payroll	Partnership Reported Payroll	Development Factor	Federal OD Payroll (1) + [(3)-(2)]*(4)	Payroll Per Million (5)/1000000
Year	(1)	(2)	(3)	(4)	(5)	(6)
2008	8,468,561	0	13,327	1.0000	8,481,888	8.481888
2009	7,866,413	0	0	1.0000	7,866,413	7.866413
2010	8,732,701	0	0	1.0000	8,732,701	8.732701
2011	9,102,411	0	0	1.0000	9,102,411	9.102411
2012	9,047,745	0	0	1.0000	9,047,745	9.047745
2013	10,355,884	0	0	1.0000	10,355,884	10.355884
2014	11,721,184	0	0	1.0000	11,721,184	11.721184
2015	11,748,205	0	0	1.0000	11,748,205	11.748205
2016	11,327,552	0	0	1.0000	11,327,552	11.327552
2017	11,435,057	0	0	1.0000	11,435,057	11.435057
2018	11,996,610	0	0	1.0000	11,996,610	11.996610

Source: Auger (1015) - Exhibit X-D, page 3

Coke (1469) - Exhibit X-D, page 3

Anthracite Co-Gen (1021) - Exhibit X-D, page 4

Bituminous Co-Gen (1023) - Exhibit X-D, page 4

COAL MINE COMPENSATION RATING BUREAU
Federal OD Payrolls

Exhibit X-C
Page 3

ANTHRACITE PREP PLANT (1025)

	State OD				Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development	Payroll	Per Million
Year	Payroll	Reported Payroll	Reported Payroll	Factor	(1) + [(3)-(2)]*(4)	(5)/1000000
	(1)	(2)	(3)	(4)	(5)	(6)
2008	6,390,767	766,824	109,600	1.0000	5,733,543	5.733543
2009	6,749,748	584,144	99,002	1.0000	6,264,606	6.264606
2010	5,762,086	1,016,835	131,676	1.0000	4,876,927	4.876927
2011	7,236,583	1,246,194	132,870	1.0000	6,123,259	6.123259
2012	8,671,140	1,248,180	146,063	1.0000	7,569,023	7.569023
2013	8,265,665	1,400,236	209,457	1.0000	7,074,886	7.074886
2014	8,234,771	1,877,979	164,749	1.0000	6,521,541	6.521541
2015	7,606,274	1,549,878	140,200	1.0000	6,196,596	6.196596
2016	7,018,927	1,728,560	252,601	1.0000	5,542,968	5.542968
2017	7,746,154	1,886,894	197,550	1.0000	6,056,810	6.056810
2018	9,643,085	2,865,985	131,456	1.0074	6,888,320	6.888320

BITUMINOUS PREP PLANT (1027)

	State OD				Federal OD	Payroll
	Developed	Federal Exempt	Partnership	Development	Payroll	Per Million
Year	Payroll	Reported Payroll	Reported Payroll	Factor	(1) + [(3)-(2)]*(4)	(5)/1000000
	(1)	(2)	(3)	(4)	(5)	(6)
2008	21,250,256	0	0	1.0000	21,250,256	21.250256
2009	19,828,012	0	0	1.0000	19,828,012	19.828012
2010	26,313,130	0	0	1.0000	26,313,130	26.313130
2011	35,155,068	0	0	1.0000	35,155,068	35.155068
2012	34,211,729	0	0	1.0000	34,211,729	34.211729
2013	34,253,697	613,728	0	1.0000	33,639,969	33.639969
2014	43,520,040	11,665,609	0	1.0000	31,854,431	31.854431
2015	33,564,176	9,243,568	0	1.0000	24,320,608	24.320608
2016	23,689,882	3,610,481	0	1.0000	20,079,401	20.079401
2017	28,816,678	0	0	1.0000	28,816,678	28.816678
2018	32,053,553	0	0	1.0170	32,053,553	32.053553

Source: Anthracite Prep Plant (1025) - Exhibit X-D, page 5
Bituminous Prep Plant (1027) - Exhibit X-D, page 5

COAL MINE COMPENSATION RATING BUREAU
Payroll Adjustment - UAE Reclassification

Exhibit X-C

Page 4

ANTHRACITE UNDERGROUND (1010)

Year	Developed Payroll (1)	Files 258,330,4027 & 4049 Developed Payroll* (2)	OD Payroll (3) = (1) + (2)	Payroll Per Million (4) = (3)/1000000
2008	0	2,136,713	2,136,713	2.136713
2009	0	1,335,866	1,335,866	1.335866
2010	5,700	1,293,888	1,299,588	1.299588
2011	110,125	1,147,819	1,257,944	1.257944
2012	219,407	809,853	1,029,260	1.029260
2013	175,900	205,976	381,876	0.381876
2014	258,809	0	258,809	0.258809
2015	254,336	0	254,336	0.254336
2016	163,760	0	163,760	0.163760
2017	252,383	0	252,383	0.252383
2018	183,346	0	183,346	0.183346

BITUMINOUS UNDERGROUND (1001)

Year	Developed Payroll (1)	Files 258,330,4027 & 4049 Developed Payroll* (2)	OD Payroll (3) = (1) - (2)	Payroll Per Million (4) = (3)/1000000
2008	103,490,690	2,136,713	101,353,977	101.353977
2009	102,684,006	1,335,866	101,348,140	101.348140
2010	126,687,464	1,293,888	125,393,576	125.393576
2011	149,633,528	1,147,819	148,485,709	148.485709
2012	154,428,761	809,853	153,618,908	153.618908
2013	149,953,068	205,976	149,747,092	149.747092
2014	271,230,707	0	271,230,707	271.230707
2015	216,454,460	0	216,454,460	216.454460
2016	148,556,407	0	148,556,407	148.556407
2017	172,800,836	0	172,800,836	172.800836
2018	179,699,685	0	179,699,685	179.699685

* The reclassification from Anthracite U/G to Bituminous U/G applies to Traumatic, but not to OD. For Traumatic Files 258, 330, 4027 & 4049 are coded 1001 (payroll and losses).

The above reclassification is made to move State and Federal O.D. exposures from Class 1001 (Bituminous U/G) back to Class 1010 (Anthracite U/G)

Other classification payrolls for these four files are unaffected by the re-classification.

Source: Developed Payroll - Exhibit X-D, page 1

CMCRB database for files 258, 330, 4027 and 4049 Payrolls as of 4-30-2019

COAL MINE COMPENSATION RATING BUREAU
Payroll Adjustment - UAE Reclassification

Exhibit X-C
Page 5

ANTHRACITE UNDERGROUND (1010)

Year	REPORTED PAYROLL* (1)	DEVELOPMENT FACTORS** (2)	DEVELOPED PAYROLL (3) = (1) * (2)
2008	2,136,713	1.0000	2,136,713
2009	1,335,866	1.0000	1,335,866
2010	1,293,888	1.0000	1,293,888
2011	1,147,819	1.0000	1,147,819
2012	809,853	1.0000	809,853
2013	205,976	1.0000	205,976
2014	0	1.0000	0
2015	0	1.0000	0
2016	0	1.0000	0
2017	0	1.0000	0
2018	0	1.0029	0

Source: CMCRB database for files 258, 330, 4027 and 4049 Payrolls as of 4-30-2019

* For Traumatic Files 258, 330, 4027 and 4049 only.

** Development Factors are averages of U/G Ant. and U/G Bit. Development Factors
from Exhibit X-E-1

COAL MINE COMPENSATION RATING BUREAU
Developed Payrolls

Exhibit X-D
Page 1

ANTHRACITE UNDERGROUND (1010)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	-	1.0000	-	0.000000
2009	-	1.0000	-	0.000000
2010	5,700	1.0000	5,700	0.005700
2011	110,125	1.0000	110,125	0.110125
2012	219,407	1.0000	219,407	0.219407
2013	175,900	1.0000	175,900	0.175900
2014	258,809	1.0000	258,809	0.258809
2015	254,336	1.0000	254,336	0.254336
2016	163,760	1.0000	163,760	0.163760
2017	252,383	1.0000	252,383	0.252383
2018	183,346	1.0000	183,346	0.183346

BITUMINOUS UNDERGROUND (1001)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	103,490,690	1.0000	103,490,690	103.490690
2009	102,684,006	1.0000	102,684,006	102.684006
2010	126,687,464	1.0000	126,687,464	126.687464
2011	149,633,528	1.0000	149,633,528	149.633528
2012	154,428,761	1.0000	154,428,761	154.428761
2013	149,953,068	1.0000	149,953,068	149.953068
2014	271,230,707	1.0000	271,230,707	271.230707
2015	216,454,460	1.0000	216,454,460	216.454460
2016	148,556,407	1.0000	148,556,407	148.556407
2017	172,800,836	1.0000	172,800,836	172.800836
2018	178,663,437	1.0058	179,699,685	179.699685

Source: (1) Payroll and (2) Development - Exhibit X-E, page 1

COAL MINE COMPENSATION RATING BUREAU
Developed Payrolls

Exhibit X-D
Page 2

ANTHRACITE SURFACE (1012)

YEAR	REPORTED PAYROLL (1)	DEVELOP FACTORS (2)	DEVELOPMENT PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	16,954,313	1.0000	16,954,313	16.954313
2009	16,445,462	1.0000	16,445,462	16.445462
2010	14,295,288	1.0000	14,295,288	14.295288
2011	21,034,600	1.0000	21,034,600	21.034600
2012	26,295,907	1.0000	26,295,907	26.295907
2013	22,449,824	1.0000	22,449,824	22.449824
2014	20,466,075	1.0000	20,466,075	20.466075
2015	24,218,779	1.0000	24,218,779	24.218779
2016	20,873,611	1.0000	20,873,611	20.873611
2017	21,167,074	1.0000	21,167,074	21.167074
2018	19,515,547	1.0083	19,677,526	19.677526

BITUMINOUS SURFACE (1014)

YEAR	REPORTED PAYROLL (1)	DEVELOP FACTORS (2)	PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	73,054,482	1.0000	73,054,482	73.054482
2009	61,784,394	1.0000	61,784,394	61.784394
2010	72,711,558	1.0000	72,711,558	72.711558
2011	86,074,064	1.0000	86,074,064	86.074064
2012	76,452,811	1.0000	76,452,811	76.452811
2013	61,349,745	1.0000	61,349,745	61.349745
2014	54,050,731	1.0000	54,050,731	54.050731
2015	40,934,048	1.0000	40,934,048	40.934048
2016	29,127,089	1.0000	29,127,089	29.127089
2017	33,140,780	1.0000	33,140,780	33.140780
2018	35,266,431	1.0000	35,266,431	35.266431

Source: (1) Payroll and (2) Development - Exhibit X-E, page 2

COAL MINE COMPENSATION RATING BUREAU
Developed Payrolls

Exhibit X-D
Page 3

COKE (1469)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	9,761,146	1.0000	9,761,146	9.761146
2009	5,173,552	1.0000	5,173,552	5.173552
2010	5,435,658	1.0000	5,435,658	5.435658
2011	3,599,086	1.0000	3,599,086	3.599086
2012	5,738,105	1.0000	5,738,105	5.738105
2013	4,791,910	1.0000	4,791,910	4.791910
2014	4,464,398	1.0000	4,464,398	4.464398
2015	4,340,376	1.0000	4,340,376	4.340376
2016	4,435,066	1.0000	4,435,066	4.435066
2017	4,566,113	1.0000	4,566,113	4.566113
2018	4,375,412	1.0186	4,456,795	4.456795

AUGER (1015)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	2,488,558	1.0000	2,488,558	2.488558
2009	926,163	1.0000	926,163	0.926163
2010	806,696	1.0000	806,696	0.806696
2011	1,176,255	1.0000	1,176,255	1.176255
2012	808,208	1.0000	808,208	0.808208
2013	1,025,399	1.0000	1,025,399	1.025399
2014	806,976	1.0000	806,976	0.806976
2015	582,619	1.0000	582,619	0.582619
2016	372,496	1.0000	372,496	0.372496
2017	449,009	1.0000	449,009	0.449009
2018	560,126	1.0000	560,126	0.560126

Source: (1) Payroll and (2) Development - Exhibit X-E, page 3

COAL MINE COMPENSATION RATING BUREAU
Developed Payrolls

Exhibit X-D
Page 4

ANTHRACITE CO-GEN (1021)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3)	PAYROLL PER MILLION (4)
			$= (1) \times (2)$	$= (1) \times (2) / 1000000$
2008	7,958,335	1.0000	7,958,335	7.958335
2009	8,004,644	1.0000	8,004,644	8.004644
2010	8,481,228	1.0000	8,481,228	8.481228
2011	11,720,035	1.0000	11,720,035	11.720035
2012	10,273,004	1.0000	10,273,004	10.273004
2013	8,342,651	1.0000	8,342,651	8.342651
2014	9,060,883	1.0000	9,060,883	9.060883
2015	10,469,089	1.0000	10,469,089	10.469089
2016	8,994,602	1.0000	8,994,602	8.994602
2017	8,819,700	1.0000	8,819,700	8.819700
2018	11,591,488	1.0000	11,591,488	11.591488

BITUMINOUS CO-GEN (1023)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	PAYROLL (3)	PAYROLL PER MILLION (4)
			$= (1) \times (2)$	$= (1) \times (2) / 1000000$
2008	8,468,561	1.0000	8,468,561	8.468561
2009	7,866,413	1.0000	7,866,413	7.866413
2010	8,732,701	1.0000	8,732,701	8.732701
2011	9,102,411	1.0000	9,102,411	9.102411
2012	9,047,745	1.0000	9,047,745	9.047745
2013	10,355,884	1.0000	10,355,884	10.355884
2014	11,721,184	1.0000	11,721,184	11.721184
2015	11,748,205	1.0000	11,748,205	11.748205
2016	11,327,552	1.0000	11,327,552	11.327552
2017	11,435,057	1.0000	11,435,057	11.435057
2018	11,996,610	1.0000	11,996,610	11.996610

Source: (1) Payroll and (2) Development - Exhibit X-E, page 4

COAL MINE COMPENSATION RATING BUREAU
Developed Payrolls

Exhibit X-D
Page 5

ANTHRACITE PREP PLANT (1025)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	DEVELOPED PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	6,390,767	1.0000	6,390,767	6.390767
2009	6,749,748	1.0000	6,749,748	6.749748
2010	5,762,086	1.0000	5,762,086	5.762086
2011	7,236,583	1.0000	7,236,583	7.236583
2012	8,671,140	1.0000	8,671,140	8.671140
2013	8,265,665	1.0000	8,265,665	8.265665
2014	8,234,771	1.0000	8,234,771	8.234771
2015	7,606,274	1.0000	7,606,274	7.606274
2016	7,018,927	1.0000	7,018,927	7.018927
2017	7,746,154	1.0000	7,746,154	7.746154
2018	9,572,250	1.0074	9,643,085	9.643085

BITUMINOUS PREP PLANT (1027)

YEAR	REPORTED PAYROLL (1)	DEVELOPMENT FACTORS (2)	PAYROLL (3) =(1) x (2)	PAYROLL PER MILLION (4) =(1)X(2)/1000000
2008	21,250,256	1.0000	21,250,256	21.250256
2009	19,828,012	1.0000	19,828,012	19.828012
2010	26,313,130	1.0000	26,313,130	26.313130
2011	35,155,068	1.0000	35,155,068	35.155068
2012	34,211,729	1.0000	34,211,729	34.211729
2013	34,253,697	1.0000	34,253,697	34.253697
2014	43,520,040	1.0000	43,520,040	43.520040
2015	33,564,176	1.0000	33,564,176	33.564176
2016	23,689,882	1.0000	23,689,882	23.689882
2017	28,816,678	1.0000	28,816,678	28.816678
2018	31,517,751	1.0170	32,053,553	32.053553

Source: (1) Payroll and (2) Development - Exhibit X-E, page 5

COAL MINE COMPENSATION RATING BUREAU
Payroll Development

Exhibit X-E
Page 1

PAYROLLS
ANTHRACITE UNDERGROUND (1010)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	0	0	5,700	110,125	219,407	175,900	258,809	254,336	163,760	252,383	183,346			
2ND	0	0	5,700	110,125	219,407	175,900	258,809	254,336	163,760	252,383				
3RD	0	0	5,700	110,125	219,407	175,900	258,809	254,336	163,760					
4TH	0	0	5,700	110,125	219,407	175,900	258,809	254,336						
5TH	0	0	5,700	110,125	219,407	175,900	258,809							
												5 YEAR		
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000
2-3			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
3-4			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000
4-5			1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	1.0000	1.0000

PAYROLLS
BITUMINOUS UNDERGROUND (1001)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	102,595,885	100,337,635	126,269,667	150,087,771	156,022,224	148,858,839	269,946,018	216,498,553	148,894,215	169,570,264	178,663,437			
2ND	103,490,690	102,684,006	126,687,464	149,633,528	154,428,761	149,953,068	271,230,707	216,454,460	148,556,407	172,800,836				
3RD	103,490,690	102,684,006	126,687,464	149,633,528	154,428,761	149,953,068	271,230,707	216,454,460	148,556,407					
4TH	103,490,690	102,684,006	126,687,464	149,633,528	154,428,761	149,953,068	271,230,707	216,454,460						
5TH	103,490,690	102,684,006	126,687,464	149,633,528	154,428,761	149,953,068	271,230,707							
												5 YEAR		
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2	1.0087	1.0234	1.0033	0.9970	0.9898	1.0074	1.0048	0.9998	0.9977	1.0191		1.0058	1.0058	1.0058
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	1.0000	1.0000

Source: CMCRB Database as of 4-30-2019 - Traumatic Payroll Reports

COAL MINE COMPENSATION RATING BUREAU
Payroll Development

Exhibit X-E
Page 2

PAYROLLS
ANTHRACITE SURFACE (1012)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	17,094,165	16,464,925	14,316,712	21,041,889	26,061,126	22,127,846	20,422,650	24,275,156	20,717,621	20,760,851	19,515,547			
2ND	16,999,485	16,445,462	14,302,955	21,034,600	26,295,907	22,449,824	20,466,075	24,218,779	20,873,611	21,167,074				
3RD	16,954,313	16,445,462	14,295,288	21,034,600	26,295,907	22,449,824	20,466,075	24,218,779	20,873,611					
4TH	16,954,313	16,445,462	14,295,288	21,034,600	26,295,907	22,449,824	20,466,075	24,218,779						
5TH	16,954,313	16,445,462	14,295,288	21,034,600	26,295,907	22,449,824	20,466,075							
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	5 YEAR AVERAGE	ACCUM.	SELECTED	
1ST	0.9945	0.9988	0.9990	0.9997	1.0090	1.0146	1.0021	0.9977	1.0075	1.0196	1.0083	1.0083	1.0083	
2-3	0.9973	1.0000	0.9995	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000	
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	

PAYROLLS
BITUMINOUS SURFACE (1014)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	72,508,648	62,272,331	72,008,001	84,685,809	77,151,225	63,473,577	54,685,762	41,179,672	28,999,042	34,474,120	35,266,431			
2ND	73,054,482	61,784,394	72,711,558	86,074,064	76,452,811	61,349,745	54,050,731	40,934,048	29,127,089	33,140,780				
3RD	73,054,482	61,784,394	72,711,558	86,074,064	76,452,811	61,349,745	54,050,731	40,934,048	29,127,089					
4TH	73,054,482	61,784,394	72,711,558	86,074,064	76,452,811	61,349,745	54,050,731	40,934,048						
5TH	73,054,482	61,784,394	72,711,558	86,074,064	76,452,811	61,349,745	54,050,731							
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	5 YEAR AVERAGE	ACCUM.	SELECTED	
1-2	1.0075	0.9922	1.0098	1.0164	0.9909	0.9665	0.9884	0.9940	1.0044	0.9613	0.9829	0.9829	1.0000	
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000	
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	

Source: CMCRB Database as of 4-30-2019 - Traumatic Payroll Reports

COAL MINE COMPENSATION RATING BUREAU
Payroll Development

Exhibit X-E
Page 3

PAYROLLS COKE (1469)													
RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1ST	9,761,146	5,173,552	5,435,658	3,599,086	5,738,105	4,791,910	4,464,398	4,057,561	4,435,066	4,462,231	4,375,412		
2ND	9,761,146	5,173,552	5,435,658	3,599,086	5,738,105	4,791,910	4,464,398	4,340,376	4,435,066	4,566,113			
3RD	9,761,146	5,173,552	5,435,658	3,599,086	5,738,105	4,791,910	4,464,398	4,340,376	4,435,066				
4TH	9,761,146	5,173,552	5,435,658	3,599,086	5,738,105	4,791,910	4,464,398	4,340,376					
5TH	9,761,146	5,173,552	5,435,658	3,599,086	5,738,105	4,791,910	4,464,398						
5 YEAR													
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0697	1.0000	1.0233	1.0186	1.0186	1.0186
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000
PAYROLLS AUGER (1015)													
RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1ST	2,489,280	935,743	793,313	1,151,902	789,136	1,082,639	876,196	592,775	372,496	452,051	560,126		
2ND	2,488,558	926,163	806,696	1,176,255	808,208	1,025,399	806,976	582,619	372,496	449,009			
3RD	2,488,558	926,163	806,696	1,176,255	808,208	1,025,399	806,976	582,619	372,496				
4TH	2,488,558	926,163	806,696	1,176,255	808,208	1,025,399	806,976	582,619					
5TH	2,488,558	926,163	806,696	1,176,255	808,208	1,025,399	806,976						
5 YEAR													
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2	0.9997	0.9898	1.0169	1.0211	1.0242	0.9471	0.9210	0.9829	1.0000	0.9933	0.9689	0.9689	1.0000
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000

Source: CMCRB Database as of 4-30-2019 - Traumatic Payroll Reports

COAL MINE COMPENSATION RATING BUREAU
Payroll Development

Exhibit X-E
Page 4

PAYROLLS
ANTHRACITE CO-GEN (1021)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	7,974,156	8,083,804	8,455,858	11,710,908	10,377,312	8,678,376	9,279,611	10,646,550	10,847,424	9,038,435	11,591,488			
2ND	7,958,335	8,004,644	8,481,228	11,720,035	10,273,004	8,342,651	9,060,883	10,469,089	8,994,602	8,819,700				
3RD	7,958,335	8,004,644	8,481,228	11,720,035	10,273,004	8,342,651	9,060,883	10,469,089	8,994,602					
4TH	7,958,335	8,004,644	8,481,228	11,720,035	10,273,004	8,342,651	9,060,883	10,469,089						
5TH	7,958,335	8,004,644	8,481,228	11,720,035	10,273,004	8,342,651	9,060,883							
												5 YEAR		
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2	0.9980	0.9902	1.0030	1.0008	0.9899	0.9613	0.9764	0.9833	0.8292	0.9758		0.9452	0.9452	1.0000
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	1.0000	1.0000

PAYROLLS
BITUMINOUS CO-GEN (1023)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	8,469,399	7,861,068	9,236,721	9,015,644	9,057,266	13,079,796	11,451,621	11,723,112	11,386,837	11,576,297	11,996,610			
2ND	8,468,561	7,866,413	8,732,701	9,102,411	9,047,745	10,355,884	11,721,184	11,748,205	11,327,552	11,435,057				
3RD	8,468,561	7,866,413	8,732,701	9,102,411	9,047,745	10,355,884	11,721,184	11,748,205	11,327,552					
4TH	8,468,561	7,866,413	8,732,701	9,102,411	9,047,745	10,355,884	11,721,184	11,748,205						
5TH	8,468,561	7,866,413	8,732,701	9,102,411	9,047,745	10,355,884	11,721,184							
												5 YEAR		
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		<u>AVERAGE</u>	<u>ACCUM.</u>	<u>SELECTED</u>
1-2	0.9999	1.0007	0.9454	1.0096	0.9989	0.7917	1.0235	1.0021	0.9948	0.9878		0.9600	0.9600	1.0000
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000	1.0000	1.0000

Source: CMCRB Database as of 4-30-2019 - Traumatic Payroll Reports

COAL MINE COMPENSATION RATING BUREAU
Payroll Development

Exhibit X-E
Page 5

PAYROLLS
ANTHRACITE PREP PLANT (1025)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	6,320,163	6,785,937	5,723,658	7,300,075	8,617,327	8,249,896	8,098,851	7,770,095	6,971,270	7,502,719	9,572,250			
2ND	6,390,767	6,749,748	5,762,086	7,236,583	8,671,140	8,265,665	8,234,771	7,606,274	7,018,927	7,746,154				
3RD	6,390,767	6,749,748	5,762,086	7,236,583	8,671,140	8,265,665	8,234,771	7,606,274	7,018,927					
4TH	6,390,767	6,749,748	5,762,086	7,236,583	8,671,140	8,265,665	8,234,771	7,606,274						
5TH	6,390,767	6,749,748	5,762,086	7,236,583	8,671,140	8,265,665	8,234,771							
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	5 YEAR AVERAGE	ACCUM.	SELECTED	
1-2	1.0112	0.9947	1.0067	0.9913	1.0062	1.0019	1.0168	0.9789	1.0068	1.0324	1.0074	1.0074	1.0074	
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000	1.0000	1.0000	
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	

PAYROLLS
BITUMINOUS PREP PLANT (1027)

RPT	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018			
1ST	20,315,099	19,852,091	25,843,606	34,632,323	34,353,700	33,730,152	43,397,620	34,011,862	22,065,227	28,602,522	31,517,751			
2ND	21,250,256	19,828,012	26,313,130	35,155,068	34,211,729	34,207,489	43,520,040	33,564,176	23,689,882	28,816,678				
3RD	21,250,256	19,828,012	26,313,130	35,155,068	34,211,729	34,253,697	43,520,040	33,564,176	23,689,882					
4TH	21,250,256	19,828,012	26,313,130	35,155,068	34,211,729	34,253,697	43,520,040	33,564,176						
5TH	21,250,256	19,828,012	26,313,130	35,155,068	34,211,729	34,253,697	43,520,040							
DEV.	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	5 YEAR AVERAGE	ACCUM.	SELECTED	
1-2	1.0460	0.9988	1.0182	1.0151	0.9959	1.0142	1.0028	0.9868	1.0736	1.0075	1.0170	1.0173	1.0170	
2-3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0014	1.0000	1.0000	1.0000		1.0003	1.0003	1.0000	
3-4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	
4-5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000	1.0000	

Source: CMCRB Database as of 4-30-2019 - Traumatic Payroll Reports

COAL MINE COMPENSATION RATING BUREAU
OD Frequencies From Approved Filing

Exhibit X-F

		State OD Class Code	State OD Indicated Frequency (Eff. 4/1/2019) (1)	Federal OD Class Code	Federal OD Basic Indicated Frequency (Eff. 4/1/2019) (2)	Federal OD Excess Indicated Frequency (Eff. 4/1/2019) (3)
Underground:	Anthracite	1011	0.195274	160	0.204365	0.077841
	Bituminous	1002	0.017266	158	0.010342	0.006680
Surface:	Anthracite	1016	0.026111	153	0.059501	0.011588
	Bituminous	1013	0.006445	156	0.023691	0.002194
	Coke	1017	0.002498	154	0.002260	0.001004
	Auger	1019	0.005209	157	0.010935	0.002158
Co-Gen:	Anthracite	1022	0.005280	181	0.010787	0.001961
	Bituminous	1024	0.007351	182	0.007228	0.002519
Prep Plants:	Anthracite	1026	0.048208	183	0.022206	0.020957
	Bituminous	1028	0.003889	184	0.008547	0.001484

Source: (1): Exhibit III Column (3) of prior filing.
(2) & (3): Exhibit IV-A Column (3) of prior filing.

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Effective Date - April 01, 2020
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COAL MINE COMPENSATION RATING BUREAU
Calculation of Coal Class Adjustment Factor to SAWW

Exhibit X-G

Average Coal Class Weekly Wages										
Year	Anthracite Underground	Bituminous Underground	Anthracite Surface	Bituminous Surface	Coke	Auger	Anthracite Co-gen	Bituminous Co-gen	Anthracite Prep Plant	Bituminous Prep Plant
	1010	1001	1012	1014	1469	1015	1021	1023	1025	1027
2009	#	1,186.72	889.44	882.89	699.10	450.40	994.20		1,054.05	1,006.54
2010	#	1,196.34	875.36	869.71	428.37	559.30	650.50	868.00	670.27	1,056.50
2011	#	1,268.15	956.16	965.20	509.19	583.00	638.00	902.00	709.93	1,168.50
2012	#	1,409.80	1,026.52	1,033.50		405.00	1,049.67	1,370.33	1,225.08	1,074.90
2013	#	1,450.44	961.94	1,056.17	584.76	556.80	933.53	1,188.00	836.20	1,268.33
2014	#	1,489.37	972.96	988.63	100.00	520.00	843.52	908.00	943.94	1,307.50
2015	#	1,634.39	1,071.78	968.80	564.33	722.00	1,075.00	836.67	1,005.00	1,295.56
2016	#	1,661.23	1,076.11	1,062.83	2,109.00		1,133.39	714.00	1,148.41	1,816.23
2017	#	1,564.44	1,163.04	1,381.20	588.83		1,206.39	1,376.75	1,277.00	1,419.95
2018	#	1,583.66	1,434.53	1,269.33	546.00		950.16	1,323.83	1,021.75	1,103.76

Number of Wage Records Used to Calculate Average Coal Class Weekly Wages										
Year	1010	1001	1012	1014	1469	1015	1021	1023	1025	1027
2009	#	119	21	30	10	2	4		4	6
2010	#	113	24	21	1	2	4	2	5	6
2011	#	106	21	31	3	4	2	2	8	12
2012	#	124	20	30		1	6	3	7	10
2013	#	90	25	29	2	5	7	1	7	9
2014	#	216	21	19	1	2	3	5	6	16
2015	#	134	18	10	3	2	3	3	4	8
2016	#	99	22	6	1		7	1	4	9
2017	#	116	23	5	6		7	4	1	6
2018	#	106	11	6	1		11	6	4	5
Total		1223	206	187	28	18	54	27	50	87

Average Coal Class Weekly Wage Indexed to Statewide Average Weekly Wage											
Year	SAWW	1010	1001	1012	1014	1469	1015	1021	1023	1025	1027
2009	836	#	1.420	1.064	1.056	0.836	0.539	1.189		1.261	1.204
2010	845	#	1.416	1.036	1.029	0.507	0.662	0.770	1.027	0.793	1.250
2011	858	#	1.478	1.114	1.125	0.593	0.679	0.744	1.051	0.827	1.362
2012	888	#	1.588	1.156	1.164		0.456	1.182	1.543	1.380	1.210
2013	917	#	1.582	1.049	1.152	0.638	0.607	1.018	1.296	0.912	1.383
2014	932	#	1.598	1.044	1.061	0.107	0.558	0.905	0.974	1.013	1.403
2015	951	#	1.719	1.127	1.019	0.593	0.759	1.130	0.880	1.057	1.362
2016	978	#	1.699	1.100	1.087	2.156		1.159	0.730	1.174	1.857
2017	995	#	1.572	1.169	1.388	0.592		1.212	1.384	1.283	1.427
2018	1025	#	1.545	1.400	1.238	0.533		0.927	1.292	0.997	1.077
Average			1.562	1.126	1.132	0.728	0.609	1.024	1.131	1.070	1.354

Average Coal Class Weekly Wage Indexed to Statewide Average Weekly Wage - Classes Combined										
Year	SAWW	Bit. Und. & Prep				All Other Classes				
2009	836				1.410				1.032	
2010	845				1.408				0.973	
2011	858				1.466				1.028	
2012	888				1.560				1.192	
2013	917				1.564				1.036	
2014	932				1.585				0.999	
2015	951				1.699				1.024	
2016	978				1.712				1.132	
2017	995				1.565				1.145	
2018	1025				1.524				1.161	
Average					1.549				1.072	
Selected Coal Class Adj. Factor to SAWW					1.549				1.072	

Notes: Average Coal Class Weekly Wages were derived from CMCRB database for Traumatic Claims.

Average Weekly Wages by class exclude years with zero claims.

Data for Anthracite Underground was too thin for inclusion.

SAWW = Statewide Average Weekly Wage

The number of records with wage histories are very close to, but less than, lost time claim counts due to missing wage records for some lost time accidents.

For these Classes and Years, there isn't any data.

Section A. Office of Small Business Advocate Assessment Factor Calculation

1.	2019-2020 Small Business Advocate Assessment	\$	280,000
2.	2018 Insurance Carrier Paid Losses		
	CMCRB		22,470,375
	PCRB		<u>2,216,375,969</u>
	Total		2,238,846,344
3.	Insurer Assessment Ratio (item 1 divided by item 2)		0.0001

Section B. Employer Assessment Factor Calculation

1.	2019/2020 INSURANCE CARRIER ASSESSMENT AMOUNTS		
	A. Administrative Fund		51,723,784
	B. Subsequent Injury Fund		143,627
	C. Supersedeas Fund		16,012,749
	D. Uninsured Employers Guaranty Fund		<u>5,603,317</u>
	TOTAL		73,483,477
2.	2018 Employer Assessment Premium Base		3,627,074,324
3.	2018 Coal Mine Premium Base		20,697,683
4.	Coal Premium percent of Total (3)/(2)		0.571%
5.	Assessments to be paid by coal employers		419,329
6.	Coal Employer Assessment Factor		0.0203

Source: Pa. Dept. of Labor & Industry
PCRB

PAB

File: 2-C:c:\2019 Rate Filing\XL\2019-11.xlsm]XI-A
Run Date: November 04, 2019 - 01:20:58 PM

Effective Date - April 01, 2020
Checksum:8,273,131,005.098750

COAL MINE COMPENSATION RATING BUREAU

Exhibit XII-A

CATASTROPHE - Spread of Loss Cost to Classes

<u>Classification</u>		(1) 2018 Developed Payrolls	(2) Hazard Weights	(3) Payroll Weight (1)x(2)/1000	(4) Percentage of Exposure	(5) Catastrophe Losses (4)xAverage	(6) Actual Loss Cost Spread [(5)/(1)]x100	(7) Approved Loss Cost 4/1/2019	(8) <u>Selected</u>	(9) Rate Change (8)/(7) - 1
Underground										
Anthracite Underground	1010	\$183,346								
<u>Bituminous Underground</u>	1001	<u>179,699,685</u>								
Total		179,883,031	7	1,259,181	91.0%	337,822	0.19	0.17	0.19	11.8%
Other than Underground										
Anthracite Surface	1012	19,677,526								
Bituminous Surface	1014	35,266,431								
Coke	1469	4,456,795								
Auger	1015	560,126								
Anthracite Co-Gen	1021	11,591,488								
Bituminous Co-Gen	1023	11,996,610								
Anthracite Prep Plant	1025	9,643,085								
<u>Bituminous Prep Plant</u>	1027	<u>32,053,553</u>								
Total		125,245,614	1	125,246	9.0%	33,602	0.03	0.02	0.03	50.0%
Grand Total		305,128,645	8	1,384,427	100.0%	371,424	0.12	a-0.11	0.12	9.1%

a - Current Total Loss Cost is based on 2018 Payroll weights
b- Auger = one-third underground & two-thirds surface or \$0.08

Source: (1) Payroll - Exhibit X-A
(2) Hazard Weights - Judgement
(5) Catastrophe Losses, Grand Total - Exhibit XII-B

COAL MINE COMPENSATION RATING BUREAU
CATASTROPHE CALCULATION
TRAUMATIC ON-LEVEL LOSSES IN EXCESS OF \$1,250,000

Exhibit XII-B

Accident <u>Year</u>	Number of Excess <u>Claims</u>	Excess Loss <u>Dollars</u>
1999	1	371,479
2000	-	-
2001	-	-
2002	1	419,300
2003	2	693,187
2004	2	1,437,001
2005	3	1,569,911
2006	-	-
2007	1	2,458,497
2008	1	163,112
2009	-	-
2010	-	-
2011	1	95,337
2012	1	1,673
2013	-	-
2014	-	-
2015	-	-
2016	-	-
2017	-	-
2018	<u>1</u>	<u>218,981</u>
	14	7,428,478
Average over 20 years		371,424
2018 Developed Payroll from Exhibit XII-A		305,128,645
Loss Cost		0.12

Source: Claims detail from Exhibit XII-C

COAL MINE COMPENSATION RATING BUREAU
CATASTROPHE CALCULATION
TRAUMATIC LOSSES OVER \$1,250,000

Exhibit XII-C

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Key		Accident	Injury	Incurred	Incurred	Paid	O/S	Act		Medical	Loss at	
Number	Class	Year	Type	& Funeral	Medical	Medical	Medical	44 Factor	Trend	Act 44 Factor	Current	Excess
34602	100100	1999	9	358,233	512,500	512,500	-	1.0000	1.8622	954,378	1,621,479	371,479
Que Creek	100100	2002	9	892,793	116,396	116,396	-	1.0000	1.6541	192,531	1,669,300	419,300
39840	100100	2003	2	419,207	485,877	277,042	208,835	1.0000	1.6222	788,190	1,468,227	218,227
39990	100100	2003	1	1,063,346	-	-	-	1.0000	1.6222	-	1,724,960	474,960
40926	100100	2004	9	727,254	603,807	477,759	126,048	1.0000	1.5870	958,242	2,112,394	862,394
41102	102700	2004	2	505,991	643,730	643,730	-	1.0000	1.5870	1,021,600	1,824,607	574,607
41534	101400	2005	1	920,373	25,566	25,566	-	1.0000	1.5293	39,098	1,446,625	196,625
41672	100100	2005	2	904,841	442,000	356,709	85,291	1.0000	1.5293	675,951	2,059,724	809,724
41676	100100	2005	2	1,010,877	175,000	88,251	86,749	1.0000	1.5293	267,628	1,813,562	563,562
43059	101200	2007	2	638,373	2,000,000	1,662,038	337,962	1.0000	1.4056	2,811,200	3,708,497	2,458,497
43835	100100	2008	1	1,029,995	11,432	11,432	-	1.0000	1.3569	15,512	1,413,112	163,112
46013	100100	2011	9	255,666	798,508	408,316	390,192	1.0000	1.2762	1,019,056	1,345,337	95,337
46135	100100	2012	9	246,748	768,314	768,314	-	1.0000	1.2331	947,408	1,251,673	1,673
50046	102100	2018	1	375,064	1,000,000	694,584	305,416	1.0000	1.0683	1,068,300	1,468,981	218,981

Totals	14										24,928,478	7,428,478
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Sources: Columns (1) through (8) from CMCRB Database.

Injury types are as follows: 1 (Death), 2 (Permanent Total), 9 (Permanent Partial).

Column (9): Exhibit VI-B page 1

Column (10): Exhibit XII-D.

Column (11) is equal to Columns [(7) X (9) + (8)] x (10)

Column (12) is equal to Columns (5) X (10) + (11)

Column (13) is equal to Column (12), minus \$1,250,000

20 Year Average	371,424
2018 Developed Payroll	305,128,645
Loss Cost	0.12

Coal Mine Compensation Rating Bureau
Catastrophe Calculation
Trend Factors for Medical and Indemnity

Exhibit XII-D

<u>Year</u>	<u>Statewide Average Weekly Wage</u>	<u>Yearly Percentage Change</u>	<u>Trend Factor</u>	<u>Year</u>	<u>Statewide Average Weekly Wage</u>	<u>Yearly Percentage Change</u>	<u>Trend Factor</u>
1999	\$588		1.8622	2010	\$845	1.1%	1.2959
2000	\$611	3.9%	1.7921	2011	\$858	1.5%	1.2762
2001	\$644	5.4%	1.7003	2012	\$888	3.5%	1.2331
2002	\$662	2.8%	1.6541	2013	\$917	3.3%	1.1941
2003	\$675	2.0%	1.6222	2014	\$932	1.6%	1.1749
2004	\$690	2.2%	1.5870	2015	\$951	2.0%	1.1514
2005	\$716	3.8%	1.5293	2016	\$978	2.8%	1.1196
2006	\$745	4.1%	1.4698	2017	\$995	1.7%	1.1005
2007	\$779	4.6%	1.4056	2018	\$1,025	3.0%	1.0683
2008	\$807	3.6%	1.3569	2019	\$1,049	2.3%	1.0439
2009	\$836	3.6%	1.3098				

Average of All Years= 2.94%
Average of last 10 years= 2.30%
Average of last 5 years= 2.39%
Average of last 3 years= 2.36%

Selected= 2.50% (Last Year's Selection was 2.50%)

	<u>Projected Wage</u>		<u>Weight</u>
01-01-2020	\$1,075	a	28.125%
01-01-2021	\$1,102	a	68.750%
01-01-2022	\$1,130	a	3.125%

Average Weekly Wage For Policies effective between 04-01-2020 and 04-01-2022

\$1,095 b

- a. Previous year's wage times annual increase of 2.50%
b. Weighted average of projected wage levels from 01-01-2020 to 01-01-2022

Source: Statewide Average Weekly Wage data is from the Pennsylvania Workers' Compensation Act booklet or the Department of Labor and Industry website.

Coal Mine Compensation Rating Bureau
Catastrophe Calculation
Traumatic Losses by Class

<u>Class Code</u>	<u>Description</u>	<u>Number of Claims</u>	<u>Excess Over \$1,250,000</u>
1010	Anthracite Underground	-	-
1001	Bituminous Underground	10	3,979,768
1012	Anthracite Surface	1	2,458,497
1014	Bituminous Surface	1	196,625
1469	Coke	-	-
1015	Auger	-	-
1021	Anthracite Co-Gen	1	218,981
1023	Bituminous Co-Gen	-	-
1025	Anthracite Prep Plant	-	-
1027	Bituminous Prep Plant	1	574,607
	Total	14	\$7,428,478

Sources: Adjusted to On-Level and Post-Act 44 basis in Exhibit XII-C

Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating Plan
Basic Data Lookup Tables

Exhibit XIII-A

50K-150K

Page 1

2020 plan factors at 50k and 150 k splits:

Table A: Ratemaking Factors

Year:	2018	2017	2016	Average
Loss Develop.	1.7322	1.2096	1.1044	split by
Layers:	Split of total losses by Layer			Layer
0- 50	0.63976	0.41578	0.45140	0.50231
50-150	0.06473	0.22781	0.15997	0.15084
Over 150	0.29551	0.35641	0.38863	0.34685
Trend	1.0468	1.0641	1.0793	1.0000

Table B: Payroll Development

Classification	Payroll Development
1001 Bit deep	1.0058
1010 Anth deep	1.0000
1012 Anth surf	1.0083
1014 Bit surf	1.0000
1015 Auger	1.0000
1021 Anth Co-gen	1.0000
1023 Bit Co-gen	1.0000
1025 Anth Prep	1.0074
1027 Bit Prep	1.0170
1469 Coke	1.0186

Table C: Unloaded Loss Costs - Traumatic

Classification	Unloaded Loss Cost (1)
1001 Bit deep	6.65
1010 Anth deep	20.12
1012 Anth surf	7.84
1014 Bit surf	1.79
1015 Auger	8.76
1021 Anth Co-gen	5.95
1023 Bit Co-gen	1.32
1025 Anth Prep	4.14
1027 Bit Prep	2.66
1469 Coke	3.73

Table D: Manual Loss Costs - Traumatic

Classification	Unloaded Loss Cost (1)	Loadings			Manual Loss Cost (5)	Off-* Balances
		Catastrophe Exh. XII-A (2)	Small Business Assessment (3)	Off-Balances# (4)		
1001 Bit deep	6.65	0.19	1.0001	1.0176	6.96	1.0002
1010 Anth deep	20.12	0.19	1.0001	1.0176	20.67	1.0174
1012 Anth surf	7.84	0.03	1.0001	1.0176	8.01	
1014 Bit surf	1.79	0.03	1.0001	1.0176	1.85	
1015 Auger	8.76	0.08	1.0001	1.0176	9.00	
1021 Anth Co-gen	5.95	0.03	1.0001	1.0176	6.09	
1023 Bit Co-gen	1.32	0.03	1.0001	1.0176	1.37	
1025 Anth Prep	4.14	0.03	1.0001	1.0176	4.24	
1027 Bit Prep	2.66	0.03	1.0001	1.0176	2.74	
1469 Coke	3.73	0.03	1.0001	1.0176	3.83	

Table E: Expected Traumatic Loss Costs

Table E: Expected Traumatic Loss Costs			2018						2017						2016					
			All Layers		Layer 0-50	Layer 50-150	XS over 150	All Layers		Layer 0-50	Layer 50-150	XS over 150	All Layers		Layer 0-50	Layer 50-150	XS over 150			
			De-trended Loss Cost*	Undeveloped Losses**	Split of total losses by Layer			De-trended Loss Cost*	Undeveloped Losses**	Split of total losses by Layer			De-trended Loss Cost*	Undeveloped Losses**	Split of total losses by Layer					
					0.63976	0.06473	0.29551			0.41578	0.22781	0.35641			0.45140	0.15997	0.38863			
					Undeveloped Expected Loss Cost***					Undeveloped Expected Loss Cost***					Undeveloped Expected Loss Cost***					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)			
1001	Bit deep	6.65	6.35	3.67	2.35	0.24	1.08	6.25	5.17	2.15	1.18	1.84	6.16	5.58	2.52	0.89	2.17			
1010	Anth deep	20.12	19.22	11.10	7.10	0.72	3.28	18.91	15.63	6.50	3.56	5.57	18.64	16.88	7.62	2.70	6.56			
1012	Anth surf	7.84	7.49	4.32	2.76	0.28	1.28	7.37	6.09	2.53	1.39	2.17	7.26	6.57	2.97	1.05	2.55			
1014	Bit surf	1.79	1.71	0.99	0.63	0.06	0.29	1.68	1.39	0.58	0.32	0.50	1.66	1.50	0.68	0.24	0.58			
1015	Auger	8.76	8.37	4.83	3.09	0.31	1.43	8.23	6.80	2.83	1.55	2.42	8.12	7.35	3.32	1.18	2.86			
1021	Anth Co-gen	5.95	5.68	3.28	2.10	0.21	0.97	5.59	4.62	1.92	1.05	1.65	5.51	4.99	2.25	0.80	1.94			
1023	Bit Co-gen	1.32	1.26	0.73	0.47	0.05	0.22	1.24	1.03	0.43	0.23	0.37	1.22	1.10	0.50	0.18	0.43			
1025	Anth Prep	4.14	3.95	2.28	1.46	0.15	0.67	3.89	3.22	1.34	0.73	1.15	3.84	3.48	1.57	0.56	1.35			
1027	Bit Prep	2.66	2.54	1.47	0.94	0.10	0.43	2.50	2.07	0.86	0.47	0.74	2.46	2.23	1.01	0.36	0.87			
1469	Coke	3.73	3.56	2.06	1.32	0.13	0.61	3.51	2.90	1.21	0.66	1.03	3.46	3.13	1.41	0.50	1.22			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			

* Detrended loss costs are calculated by dividing the unloaded manual lost costs (Table C) by the trend factors (Table A row 7), and rounding.

** The total undeveloped loss costs are calculated by dividing the De-trended loss cost by the Total Limits loss development factor (Table A row 2), and rounding; then the costs are allocated to layers.

*** Detrended, undeveloped loss costs are allocated to layers by the splitting factors (Table A rows 4-6) based on the average shares for the same report age for the latest 6 years, and rounded to 2 decimal places.

Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating Plan
Loss Development and Trend Factors by Experience Year

Exhibit XIII-A

50K-150K

Page 2

		Reported Losses	LDF	Untrended Developed Losses	Weight: Percent Indemnity vs Medical	Medical Loss Development	Indemnity Loss Development	Combined Loss Development Weighted by % indemnity vs medical by year
<u>Indemnity</u>	2016	\$8,661,045	1.0947	\$9,481,246	66.81%	1.1238	1.0947	1.1044
	2017	\$8,255,335	1.2728	\$10,507,390	61.73%	1.1076	1.2728	1.2096
	2018	\$5,566,332	2.0500	<u>\$11,410,981</u>	<u>63.50%</u>	1.1792	2.0500	1.7322
				\$31,399,617	63.84%			
<u>Medical</u>	2016	\$4,190,581	1.1238	\$4,709,375	33.19%			
	2017	\$5,882,211	1.1076	\$6,515,137	38.27%			
	2018	\$5,562,604	1.1792	<u>\$6,559,423</u>	<u>36.50%</u>			
				\$17,783,935	36.16%			
Total				\$49,183,552	1.0000			
					Years of Trend	Medical / HB 1846 Trend at <u>2.1%</u>	Indemnity / HB 1840 Trend at <u>1.1%</u>	Combined Trend Weighted by % indemnity vs medical by year
Average Exp date AY 2016			7/1/2016	4.75		1.1038	1.0671	1.0793
Average Exp date AY 2017			7/1/2017	3.75		1.0811	1.0536	1.0641
Average Exp date AY 2018			7/1/2018	2.75		1.0588	1.0399	1.0468
Average Date of Accident			4/1/2021					

Source: Loss Development - Exhibit V-C
Trend - Exhibit V-F
Reported Losses - Exhibit V-B page 1

2020 Credibility Tables

PCRB shape

Expected Losses Greater than	Equivalent Modified Payroll at \$5.40 *	Primary Credibility	Excess Credibility
------------------------------------	--	------------------------	-----------------------

Credibility Z_p or Z_e
 $= (S^*Payroll + I^*G) / (J^*S^*Payroll + K^*G)$
 [where S adjusts Payroll to Expected Losses]

Variable	Layer 1	Layer 2
Av Claim G	N/A	11,512
S	N/A	0.054
I	N/A	43.50
J	N/A	2.4000
K	N/A	700.00
14,394	300,000	0.30
17,632	326,523	0.31
21,218	392,926	0.32
23,729	439,431	0.33
25,895	479,537	0.34
28,223	522,653	0.35
31,724	587,481	0.36
33,340	617,398	0.37
36,148	669,407	0.38
39,261	727,048	0.39
42,723	791,171	0.40
46,173	855,049	0.41
50,260	930,736	0.42
54,480	1,008,881	0.43
58,930	1,091,292	0.44
64,137	1,187,728	0.45
69,460	1,286,294	0.46
72,885	1,349,720	0.47
75,602	1,400,029	0.48
78,457	1,452,911	0.49
81,395	1,507,309	0.50
84,414	1,563,223	0.51
87,590	1,622,044	0.52
90,840	1,682,219	0.53
94,219	1,744,800	0.54
97,737	1,809,949	0.55
101,336	1,876,590	0.56
105,125	1,946,752	0.57
109,027	2,019,009	0.58
113,042	2,093,361	0.59
117,273	2,171,713	0.60
121,605	2,251,947	0.61
126,119	2,335,535	0.62
130,628	2,419,044	0.63
135,136	2,502,519	0.64
146,976	2,721,780	0.65
159,790	2,959,082	0.66
174,343	3,228,580	0.67
190,774	3,532,857	0.68
208,366	3,858,636	0.69
228,292	4,227,627	0.70
249,705	4,624,167	0.71
274,047	5,074,950	0.72
302,119	5,594,796	0.73
333,210	6,170,556	0.74
366,752	6,791,694	0.75
407,662	7,549,296	0.76
450,677	8,345,864	0.77
498,112	9,224,296	0.78
558,410	10,340,932	0.79
624,012	11,555,775	0.80
697,648	12,919,407	0.81
788,985	14,610,833	0.82
894,945	16,573,056	0.83
1,018,370	18,858,704	0.84
1,157,231	21,430,206	0.85
1,321,831	24,478,349	0.86
1,528,079	28,297,762	0.87
1,528,079	30,964,397	0.87
1,795,880	33,257,030	0.88
2,120,319	39,265,167	0.89
2,505,663	46,401,167	0.90
2,505,663	49,908,820	0.90
3,000,680	55,568,142	0.91
3,000,680	62,598,008	0.91
3,851,016	71,315,105	0.92
3,851,016	78,526,990	0.92
4,547,151	84,206,500	0.93
4,547,151	99,118,112	0.93
6,019,437	111,471,058	0.94
6,019,437	126,769,048	0.94
6,019,437	144,482,928	0.94
6,019,437	165,861,750	0.94
6,019,437	192,174,145	0.94
6,019,437	225,350,644	0.94
6,019,437	268,480,093	0.94
6,019,437	326,831,699	0.94
6,019,437	410,191,138	0.94

* The average unloaded loss cost underlying the proposed filing is \$5.40.
the table was updated to reflect this change.

PAB

**Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating 2020
Mod Comparisons**

Exhibit XIII-B
Page 1

<u>File</u>	<u>Proposed Manual Premium</u>	<u>Proposed 2020 Mod</u>	<u>Proposed Experience Rated Premium</u>	<u>2019 Mod</u>	<u>Change in Mod Factor</u>
2	2,093	0.839	1,756	0.828	0.011
37	155,283	1.292	200,626	1.142	0.150
52	7,886	0.786	6,198	0.780	0.006
55	557,947	0.838	467,560	0.687	0.151
66	5,091	0.869	4,424	0.912	-0.043
99	18,846	0.827	15,586	0.835	-0.008
119	114,737	0.930	106,705	0.822	0.108
121	180,084	0.667	120,116	0.657	0.010
124	16,502	0.688	11,353	0.717	-0.029
214	24,959	0.891	22,238	0.941	-0.050
283	16,901	0.652	11,019	0.648	0.004
288	4,294	0.836	3,590	0.833	0.003
306	153,552	1.246	191,326	1.264	-0.018
316	2,898	0.834	2,417	0.826	0.008
325	22,024	0.773	17,025	0.763	0.010
342	2,070	0.834	1,726	0.811	0.023
352	7,123	1.789	12,743	1.740	0.049
354	17,386	1.844	32,060	4.631	-2.787
360	2,180	0.838	1,827	0.834	0.004
370	2,826	0.833	2,354	0.828	0.005
421	10,882	0.774	8,423	0.751	0.023
426	104,279	1.484	154,750	1.334	0.150
652	362,492	0.859	311,381	0.887	-0.028
690	23,528	1.054	24,799	1.257	-0.203
722	3,512	0.805	2,827	0.779	0.026
954	10,530	0.756	7,961	0.714	0.042
1016	7,006	1.177	8,246	0.914	0.263
1037	39,584	0.819	32,419	1.090	-0.271
1158	2,195	0.842	1,848	n/a	n/a
1361	2,261	0.837	1,892	0.837	0.000
1444	416,873	1.075	448,138	1.221	-0.146
1700	28,379	0.755	21,426	0.722	0.033
2353	11,299	0.797	9,005	0.794	0.003
2458	10,040	0.828	8,313	n/a	n/a
2687	41,749	0.728	30,393	0.761	-0.033
2839	30,028	1.163	34,923	1.058	0.105
3157	29,453	0.792	23,327	0.785	0.007
3190	6,483	0.776	5,031	0.743	0.033
3194	2,727	1.200	3,272	0.811	0.389
3527	3,019	0.858	2,590	0.863	-0.005
3552	8,612	0.777	6,692	1.827	-1.050
3614	42,409	1.790	75,912	1.161	0.629
3619	15,084	0.820	12,369	0.802	0.018
3629	28,464	0.792	22,543	0.782	0.010
3691	61,886	1.470	90,972	1.167	0.303

PAB

Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating 2020
Mod Comparisons

Exhibit XIII-B
Page 2

<u>File</u>	<u>Proposed Manual Premium</u>	<u>Proposed 2020 Mod</u>	<u>Proposed Experience Rated Premium</u>	<u>2019 Mod</u>	<u>Change in Mod Factor</u>
3798	2,329	0.835	1,945	0.813	0.022
3804	11,664	0.737	8,596	0.680	0.057
3932	8,189	0.775	6,346	0.767	0.008
3944	6,412	0.786	5,040	0.757	0.029
3977	56,944	1.055	60,076	1.018	0.037
3978	6,850	0.830	5,686	0.777	0.053
3981	2,881	0.833	2,400	0.820	0.013
3982	20,634	1.300	26,824	1.104	0.196
3988	8,988	0.817	7,343	0.811	0.006
3994	0	0.852	0	0.819	0.033
3997	2,516	0.834	2,098	0.814	0.020
4001	1,755	0.772	1,355	0.655	0.117
4011	372,475	0.583	217,153	1.033	-0.450
4016	0	0.761	0	1.654	-0.893
4024	22,331	0.827	18,468	1.046	-0.219
4025	9,720	0.828	8,048	0.880	-0.052
4030	3,239	0.803	2,601	1.857	-1.054
4031	39,778	1.069	42,523	1.055	0.014
4042	43,702	1.310	57,250	0.670	0.640
4044	149,725	0.783	117,235	1.043	-0.260
4052	39,553	0.641	25,353	0.737	-0.096
4054	2,275	1.200	2,730	0.850	0.350
4058	18,424	0.691	12,731	0.695	-0.004
4060	0	0.818	0	1.007	-0.189
4062	4,821	1.181	5,694	1.400	-0.219
4063	378	0.835	316	0.799	0.036
4072	468,756	0.833	390,474	0.846	-0.013
4077	711,939	1.224	871,413	1.060	0.164
4078	88,108	1.129	99,474	0.854	0.275
4081	2,674	0.820	2,193	0.798	0.022
4089	11,138	0.815	9,077	0.959	-0.144
4094	41,871	1.225	51,292	0.679	0.546
4096	1,902	0.841	1,600	0.826	0.015
4100	4,150,781	1.024	4,250,400	1.026	-0.002
4101	0	0.840	0	0.905	-0.065
4103	23,306	0.803	18,715	0.800	0.003
4104	2,215,630	1.025	2,271,021	1.091	-0.066
4110	15,318	0.718	10,998	0.766	-0.048
4114	24,404	0.735	17,937	0.772	-0.037
4116	9,618	0.925	8,897	n/a	n/a
4118	5,903	0.797	4,705	n/a	n/a
4120	45,283	0.755	34,189	0.803	-0.048
999011	43,649	0.800	34,919	1.300	-0.500
999013	37,845	0.813	30,768	2.150	-1.337
999019	529,986	0.932	493,947	0.885	0.047

Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating 2020
Mod Comparisons

Exhibit XIII-B
Page 3

<u>File</u>	<u>Proposed Manual Premium</u>	<u>Proposed 2020 Mod</u>	<u>Proposed Experience Rated Premium</u>	<u>2019 Mod</u>	<u>Change in Mod Factor</u>
999020	12,682	0.745	9,448	1.523	-0.778
999024	7,686	0.824	6,333	0.819	0.005
999038	102,471	0.970	99,397	0.784	0.186
999039	65,402	1.393	91,105	1.250	0.143
999051	69,038	1.433	98,931	1.125	0.308
999052	1,034,586	0.955	988,030	1.750	-0.795
999053	54,075	0.993	53,696	2.608	-1.615
999061	0	1.200	0	0.791	0.409
999063	792,052	0.812	643,146	1.101	-0.289
999065	3,208,603	1.044	3,349,782	0.813	0.231
999075	3,551	0.823	2,922	1.910	-1.087
999077	57,092	2.256	128,800	0.719	1.537

Coal Mine Compensation Rating Bureau of Pennsylvania
Experience Rating 2020
Mod Comparisons

Exhibit XIII-C

The following files have indicated increases or decreases in their Experience Mods of greater than 0.35 as displayed on Exhibit XIII-B, pages 1-3. This list includes all files with increases or decreases of this magnitude. It is proposed that the indicated increases or decreases be limited to a maximum of 0.35. Below are the affected files, their current mod and their proposed mod. If approved, the below stated limited mod would apply to the respective file number.

Experience Mod Caps (plus or minus 0.35)

File	2019 Mod	Proposed 2020 Mod	Limited Mod
354	4.631	1.844	4.281
3194	0.811	1.200	1.161
3552	1.827	0.777	1.477
3614	1.161	1.790	1.511
4011	1.033	0.583	0.683
4016	1.654	0.761	1.304
4030	1.857	0.803	1.507
4042	0.670	1.310	1.020
4094	0.679	1.225	1.029
999011	1.300	0.800	0.950
999013	2.150	0.813	1.800
999020	1.523	0.745	1.173
999052	1.750	0.955	1.400
999053	2.608	0.993	2.258
999061	0.791	1.200	1.141
999075	1.910	0.823	1.560
999077	0.719	2.256	1.069

PAB

COAL MINE COMPENSATION RATING BUREAU
MERIT RATING PLAN

Exhibit XIV-A
Page 1

MERIT RATING PLAN OFF-BALANCE CALCULATION

<u>Class</u>	(1) 2018 Developed Payroll	(2) Traumatic Proposed Unloaded Loss Cost	(3) Credits/ Surcharge	(4) Loss Cost Premium	<u>Off-Balance</u>
Underground Anthracite (1010)					
Total	\$183,346	20.12		\$36,889	
Credit	0	20.12	-5.00%	0	
Surcharge	0	20.12	5.00%	0	
Underground Bituminous (1001)					
Total	\$179,699,685	6.65		\$11,950,029	
Credit	0	6.65	-5.00%	0	
Surcharge	0	6.65	5.00%	0	
Surface Anthracite (1012)					
Total	\$19,677,526	7.84		\$1,542,718	
Credit	221,562	7.84	-5.00%	-869	
Surcharge	0	7.84	5.00%	0	
Surface Bituminous (1014)					
Total	\$35,266,431	1.79		\$631,269	
Credit	1,891,631	1.79	-5.00%	-1,693	
Surcharge	0	1.79	5.00%	0	
Coke (1469)					
Total	\$4,456,795	3.73		\$166,238	
Credit	0	3.73	-5.00%	0	
Surcharge	0	3.73	5.00%	0	
Auger (1015)					
Total	\$560,126	8.76		\$49,067	
Credit	74,030	8.76	-5.00%	-324	
Surcharge	0	8.76	5.00%	0	
Anthracite Co-Gen (1021)					
Total	\$11,591,488	5.95		\$689,694	
Credit	0	5.95	-5.00%	0	
Surcharge	0	5.95	5.00%	0	
Bituminous Co-Gen (1023)					
Total	\$11,996,610	1.32		\$158,355	
Credit	4,630	1.32	-5.00%	-3	
Surcharge	0	1.32	5.00%	0	
Anthracite Prep Plant (1025)					
Total	\$9,643,085	4.14		\$399,224	
Credit	54,193	4.14	-5.00%	-112	
Surcharge	0	4.14	5.00%	0	
Bituminous Prep Plant (1027)					
Total	\$32,053,553	2.66		\$852,625	
Credit	0	2.66	-5.00%	0	
Surcharge	0	2.66	5.00%	0	
All Classes Combined					
Total	\$305,128,645			\$16,476,108	
Credit	2,246,046		-5.00%	-3,001	
Surcharge	0		5.00%	0	
				\$16,473,107	1.0002

Source: (1) Exhibit XIV-A Page2
(2) Exhibit II
(4)=(1)*(2)*(3)

COAL MINE COMPENSATION RATING BUREAU
MERIT RATING PLAN

Exhibit XIV-A
Page 2

2018 PAYROLL BY CLASS

Class	2018 Total Developed Payroll	2018 Experience Rated Payroll	2018 Merit Rated Payroll	2018 Manual Payroll
Underground Anthracite (1010)	\$183,346	\$183,346	\$0	\$0
Underground Bituminous(1001)	179,699,685	179,500,669	0	199,016
Surface Anthracite (1012)	19,677,526	19,326,090	221,562	129,874
Surface Bituminous (1014)	35,266,431	31,768,187	1,891,631	1,606,613
Coke (1469)	4,456,795	4,456,795	0	0
Auger (1015)	560,126	148,498	74,030	337,598
Anthracite Co-Gen (1021)	11,591,488	10,627,270	0	964,218
Bituminous Co-Gen (1023)	11,996,610	11,561,116	4,630	430,864
Anthracite Prep Plant(1025)	9,643,085	8,716,878	54,193	872,014
<u>Bituminous Prep Plant(1027)</u>	<u>32,053,553</u>	<u>31,778,594</u>	<u>0</u>	<u>274,959</u>
TOTAL	\$305,128,645	\$298,067,443	\$2,246,046	\$4,815,156

MERIT PAYROLL - CREDIT/SURCHARGE

Class	2018 Merit Rated Payroll	2018 Merit Credit Payroll	2018 Merit No Adjustment Payroll	2018 Merit Surcharge Payroll
Underground Anthracite (1010)	\$0	\$0	\$0	\$0
Underground Bituminous(1001)	0	0	0	0
Surface Anthracite (1012)	221,562	221,562	0	0
Surface Bituminous (1014)	1,891,631	1,891,631	0	0
Coke (1469)	0	0	0	0
Auger (1015)	74,030	74,030	0	0
Anthracite Co-Gen (1021)	0	0	0	0
Bituminous Co-Gen (1023)	4,630	4,630	0	0
Anthracite Prep Plant(1025)	54,193	54,193	0	0
<u>Bituminous Prep Plant(1027)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL	\$2,246,046	\$2,246,046	\$0	\$0

Source: Exhibit X-A and CMCRB database as of 4/30/2019

COAL MINE COMPENSATION RATING BUREAU
SAFETY COMMITTEE CREDIT OFFSET

Exhibit XIV-B

<u>CLASS</u>	(1) 2018 Developed Payroll	(2) Traumatic Proposed Unloaded Loss Cost	(3) <u>Credit</u>	(4) Loss Cost <u>Premium</u>	<u>Off-Balance</u>
Underground Anthracite(1010)					
Total	\$183,346	\$20.12		\$36,889	
Safety Committee	0	20.12	-5.00%	0	
Underground Bituminous(1001)					
Total	179,699,685	6.65		\$11,950,029	
Safety Committee	61,748,681	6.65	-5.00%	(205,314)	
Surface Anthracite(1012)					
Total	19,677,526	7.84		\$1,542,718	
Safety Committee	8,437,719	7.84	-5.00%	(33,076)	
Surface Bituminous(1014)					
Total	35,266,431	1.79		\$631,269	
Safety Committee	5,188,654	1.79	-5.00%	(4,644)	
Coke(1469)					
Total	4,456,795	3.73		\$166,238	
Safety Committee	0	3.73	-5.00%	0	
Auger(1015)					
Total	\$560,126	8.76		\$49,067	
Safety Committee	0	8.76	-5.00%	0	
Anthracite Co-gen(1021)					
Total	11,591,488	5.95		\$689,694	
Safety Committee	3,091,233	5.95	-5.00%	(9,196)	
Bituminous Co-gen(1023)					
Total	11,996,610	1.32		\$158,355	
Safety Committee	0	1.32	-5.00%	0	
Anthracite Prep Plant(1025)					
Total	9,643,085	4.14		\$399,224	
Safety Committee	2,758,619	4.14	-5.00%	(5,710)	
Bituminous Prep Plant(1027)					
Total	32,053,553	2.66		\$852,625	
Safety Committee	17,960,886	2.66	-5.00%	(23,888)	
<u>All Classes Combined</u>					
Total	305,128,645			16,476,108	
Safety Committee	99,185,792			(281,828)	
				16,194,280	1.0174

Source: (1) Exhibit X-A and CMCRB Database as of 4-30-2019
(2) Exhibit II
(4)=(1)*(2)*(3)

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