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UNITED STATES BANKRUPTCY COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

In re **PATRIOT COAL CORPORATION, *et al.*,** **Debtors.**	**Chapter 11** **Case No. 12-51502-659** **(Jointly Administered)** **Hearing Date:** **April 29, 2013 at 10:00 a.m.** **(prevailing Central Time)** **Hearing Location:** **Courtroom 7 North** **Re: ECF Nos. 3214, 3326, 3585, 3586, 3605, 3606, 3608, 3609, 3610, 3616, 3617, 3618, 3623, 3624**

REPLY DECLARATION OF SETH SCHWARTZ IN SUPPORT OF THE DEBTORS' MOTION TO REJECT COLLECTIVE BARGAINING AGREEMENTS AND TO MODIFY RETIREE BENEFITS PURSUANT TO 11 U.S.C. §§ 1113, 1114

Seth Schwartz declares pursuant to 28 U.S.C. § 1746:

1. I am President of Energy Ventures Analysis, Inc. ("EVA"), which was retained in June 2012 by Patriot Coal Corporation ("Patriot") as an expert consultant in connection with these chapter 11 proceedings. I have previously filed a declaration in this case. The purpose of this declaration is to reply to statements made by Srinivas. Akunuri and Micheal Buckner in declarations which they filed on behalf of the United Mine Workers of America ("UMWA") [ECF Nos. 3630, 3613].

SUMMARY OF OPINIONS

2. The following is a summary of my principal opinions in this reply declaration.

- The coal market price forecasts used by Patriot in its Business Plan are reasonable and, if anything, are more optimistic than current futures market prices and recent coal market price forecasts. Mr. Akunuri's conclusion that Patriot's revenues would be significantly higher if it had used other third-party price forecasts is flawed due to a major mistake in excluding production taxes from Patriot's sales revenues in its Business Plan.

- Mr. Akunuri claims that the recent recovery of natural gas futures prices supports a more positive outlook for thermal coal market prices. However, the recent recovery has been for short-term natural gas prices, due to cold weather, while long-term prices for natural gas have not increased. A more relevant measure of the outlook for future coal prices comes from the coal futures market itself and coal company stock prices, both of which have fallen since the beginning of 2013 while short-term gas prices have increased.

- Mr. Buckner asserts that Patriot's UMWA-represented mines have labor productivity better than average in their coal regions and have labor costs lower than Patriot's non-union mines. He made numerous errors in his analysis and is wrong on both counts. Despite the fact that Patriot has far superior mining conditions at its UMWA-represented mines (thicker coal seams for deep mines and lower strip ratios for surface mines), Patriot's UMWA-represented mines have lower productivity than its competitors in the region and higher labor costs than at Patriot's non-union mines. These problems can only be explained by the high hourly wage and benefit costs and the restrictive work rules in the UMWA labor contracts, which Patriot is trying to modify in this proceeding.

COAL MARKETS AND COAL PRICES

A. The Price Forecasts Used by Patriot in Its Business Plan Are Reasonable

3. Mr. Akunuri states that "Patriot's projections for future thermal coal prices are understated" and are inconsistent with third-party price forecasts.[1] Mr. Buckner agreed with Mr. Akunuri that Patriot's coal price forecasts are "overly conservative", and further opined that the

[1] Akunuri Decl., ¶¶ 7, 19, 25.

metallurgical coal prices forecasted by my company, EVA, in December 2012 were substantially more optimistic than the projections in Patriot's five-year business plan.[2] Mr. Akunuri makes major errors in his analysis of the prices in Patriot's business plan. Further, Mr. Akunuri and Mr. Buckner rely on outdated price forecasts for some of their comparisons. A correct comparison of the price forecast used by Patriot in its business plan with both market prices and other forecasts shows that the prices used are reasonable, and if anything, are optimistic, not conservative.

4. Mr. Akunuri has made a very basic error in his analysis, which misstates the market prices used in Patriot's business plan. Rather than use Patriot's actual Five-Year Business Plan (the "Business Plan") to determine the prices used in the model (the prices are contained on a tab called Coal Price Forecast)[3] or the data room document Coal Price Forecast Mapping[4], both of which explicitly present the coal market prices used in Patriot's business plan, Mr. Akunuri made his own calculations of Patriot's average sales price for each thermal coal mine from the Mine Level P&L forecast and attributed them to the Business Plan.[5] Mr. Akunuri calculated the average sales price for each mine by dividing the dollar amount shown for "Coal sales before Taxes" by the tons sold.[6] This is a major error because the sales price for Patriot's coal includes taxes, as explicitly shown in the Business Plan. The taxes which Mr. Akunuri has excluded from the calculation of Patriot's sales price are:

- the Federal Black Lung Tax, which is equal to $1.10 per ton for deep mines and $0.55 per ton for surface mines;

[2] Buckner Decl. ¶¶ 72, 75.

[3] Data room item 1.2.2.3.

[4] Data room item 1.2.21.

[5] Data room item 1.2.25.6.

[6] Akunuri Decl., Ex. F.

- the Federal Reclamation Fee, which is equal to $0.12 per ton for deep mines and $0.28 per ton for surface mines;
- the State of West Virginia workers compensation tax, which is equal to $0.56 per ton;
- the State of West Virginia special reclamation tax, which is equal to $0.299 per ton;
- the State of West Virginia severance tax, which is equal to 5.0% of the gross sales price; and
- the Commonwealth of Kentucky severance tax, which is equal to 4.5% of the gross sales price.

These taxes are paid by Patriot and included in the coal sales price. The coal market prices quoted on the NYMEX futures exchange and the coal market price forecasts of my company and other forecasters—including SNL Energy and Wood Mackenzie, the services relied on by Mr. Akunuri—all include these taxes levied on coal production in the market price of coal.[7] Thus, the most elementary reason that Mr. Akunuri finds Patriot's coal prices used in the business plan to be "understated" is that he has made a mistake in calculating these prices, rather than use the prices provided by Patriot.

5. A proper measure of the reasonableness of the coal price forecast used in Patriot's Business Plan would be to compare the coal prices used by Patriot with both coal market futures

[7] Mr. Akunuri claimed in his deposition that SNL Energy and Wood Mackenzie told members of his team that their forecast prices did not include these add-on taxes. I am personally aware of the fact that all reports on coal market prices and forecasts of coal market prices include these taxes in the reported market prices for coal. The director of SNL's coal forecast service has personally confirmed that the cost of severance taxes, reclamation fees and the federal black lung tax are included in SNL's price forecast. See email dated April 19, 2013 from Steve Piper, Associate Director, Energy Fundamentals, SNL Energy, a true and correct copy of which is attached hereto as Exhibit A.

prices as well as other market price forecasts.[8] I have prepared this comparison and have shown the data on Exhibit 1. This analysis shows that:

- Patriot's long-term price forecast for Central Appalachia thermal coal (its most important thermal product) is than the current futures market prices and higher than the market price forecasts from EVA, Wood Mackenzie and SNL Energy.
- Patriot's long-term price forecast for Illinois Basin thermal coal is than the current futures market price and than the price forecasts of EVA and SNL, but than the forecast of Wood Mackenzie.
- Patriot's long-term price forecast for Northern Appalachia coal (which accounts for less than 20% of Patriot's coal production and only 16% of its revenue) is than the current futures market price and EVA's forecast, but more than than the price forecasts of SNL and Wood Mackenzie.
- Patriot's long-term price forecast for high-volatile A metallurgical coal is than the EVA forecast (there is no futures market for metallurgical coal and the other forecasts cited by Mr. Akunuri do not provide metallurgical coal prices). Mr. Buckner provided no citation for his assertion that the EVA metallurgical price forecast was "substantially more optimistic" than the Business Plan, but it is clearly incorrect.

[8] All futures market prices are from ICAP Energy as of April 12, 2013. Except where otherwise noted, the comparisons I have drawn are to EVA's forecasts as of the first quarter of 2013, SNL's forecasts as of February 28, 2013, and Wood Mackenzie's forecasts as of November 2012, each the most recent long-term forecasts from these services.

Exhibit 1

Comparison of Coal Price Forecasts

6. EVA publishes a quarterly forecast of U.S. coal prices which it sells to subscribers.[9] We provide forecasts of supply, demand and prices for each coal basin and a variety of coal quality specifications commonly sold in the industry. Mr. Buckner cites EVA's 4th Quarter 2012 Quarterly Coal Report (published in December 2012) in reference to our metallurgical coal price forecasts, discussed above.[10] EVA has published a more recent forecast for the 1st Quarter of 2013 in March 2013. In our more recent forecast, we have reduced our projection of future coal prices for U.S. coals—both thermal and metallurgical—for a number of reasons, including:

- persistent excess coal production capacity in most coal basins, reducing profit margins;
- reduced rates of cost inflation affecting coal prices;
- lower international market prices for both thermal and metallurgical coals;
- increased retirements of existing U.S. coal-fired power plants due to EPA regulations; and
- lower outlook for long-term U.S. natural gas prices.

EVA's older forecast of coal prices in 2015 was generally similar to the prices used by Patriot in its Business Plan, with prices about the same for CAPP thermal coal, Patriot higher for ILLB and metallurgical coals, and EVA higher for NAPP coal. With the reduced price forecast in EVA's more recent report, Patriot's Business Plan prices are substantially higher than EVA's forecast for all coals except the NAPP thermal coal.

[9] EVA's forecasts are developed without regard to the particular coals produced or consumed by any of its subscribers. No forecast has been produced by EVA specifically for Patriot to use for the purpose of developing its Business Plan, developing its proposals under sections 1113 and 1114, negotiating with the UMWA, or litigating this motion under sections 1113 and 1114 of the Bankruptcy Code.

[10] Buckner Decl. ¶ 75.

7. Mr. Akunuri stated that Patriot assumed in its Business Plan that "declining coal prices are permanent."[11] As shown on Exhibit 1, that is not the case. Patriot assumed significant increases in coal market prices in its business plan from 2013 to 2016. The increases in thermal coal prices assumed by Patriot over this 3-year period are Central Appalachia, in Northern Appalachia and in the Illinois Basin.

8. Mr. Akunuri asserts that "[a] switch from natural gas back to coal will occur when natural gas prices increase, making thermal coal a more economic option once again".[12] He further claims that there has already been a significant increase in the natural gas futures price.[13] Mr. Buckner agrees with Mr. Akunuri as well.[14] They opine that increasing natural gas prices will cause the market for thermal coal to improve, thus supporting higher coal prices than used by Patriot in its Business Plan.

9. The increase in natural gas prices cited by Mr. Akunuri and Mr. Buckner is only an increase in the **spot** price for natural gas, which was unusually depressed during 2012 because of the extremely mild winter weather. The indicator of the long-term future market for thermal coal is the **long-term** futures price for natural gas, not the spot price. As shown on Exhibit 2, while the spot price has increased from its extreme lows of early 2012, the long-term futures price has **declined**. For example, when spot gas prices were at their low point at the beginning of April 2012, the long-term price average for calendar year 2017 was $4.77 per million Btu, the most recent futures price (April 17, 2013) for the same year has fallen to $4.55 per million Btu. Thus, the long-term fundamentals for coal competing with gas have not improved; if anything

[11] Akunuri Decl. ¶ 7

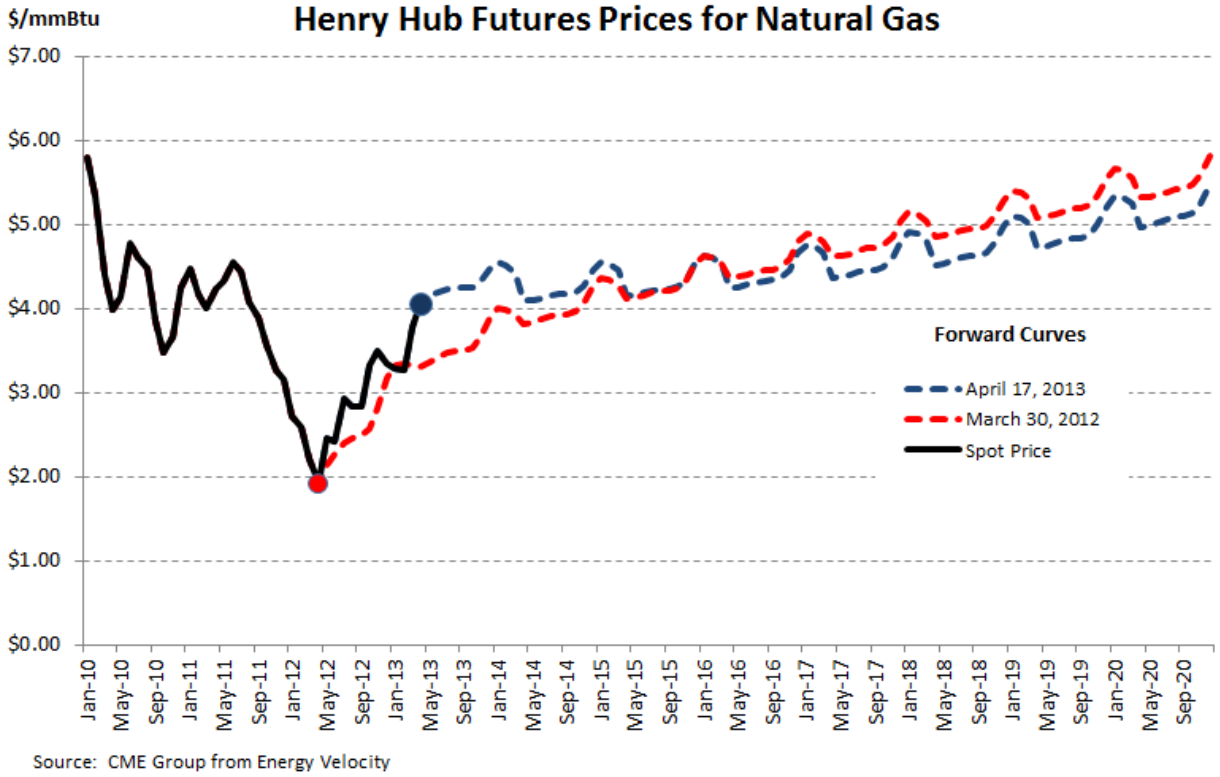
[12] Akunuri Decl. ¶ 10.

[13] Akunuri Decl. ¶ 11.

[14] Buckner Decl. ¶ 72.

they have gotten worse. While the power market will continue to use lower-cost thermal coals, such as the high-sulfur coals from Northern Appalachia and the Illinois Basin, the high-cost Central Appalachia mines will continue to be uneconomic compared to generation from natural gas.

Exhibit 2

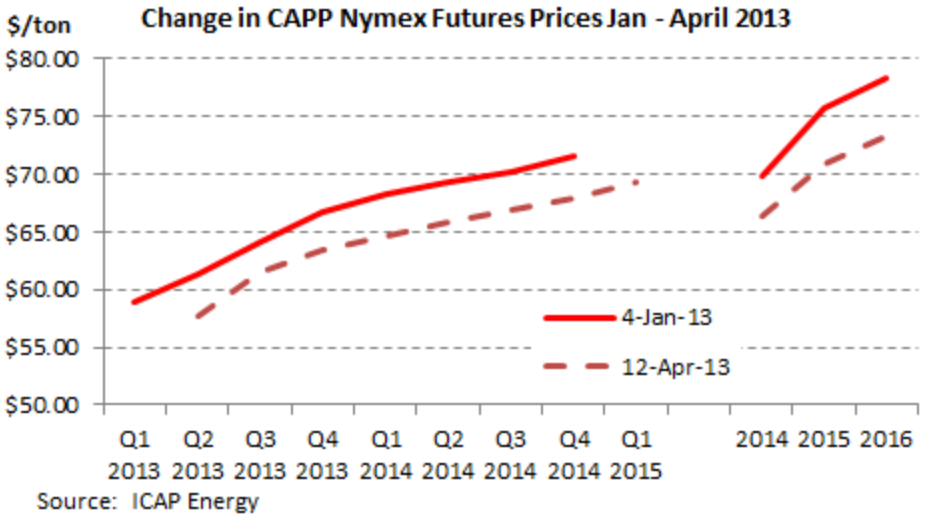


Source: CME Group from Energy Velocity

10. Not only have thermal coal prices not increased with the recent increase in the spot price of natural gas, coal prices have actually fallen. The NYMEX futures market price for Central Appalachia coal has fallen 6% from January to April, as shown on Exhibit 3, even while spot gas prices climbed from $3.35 to $4.05 per million Btu over the same time period. Investors in the coal and natural gas markets understand that short-term swings in prices due to weather do not change the long-term fundamentals, which are still not favorable for a recovery of the domestic thermal coal market to levels prior to the changes of recent years, including the

development of large supplies of natural gas from shale formations and restrictions on the use of coal for electricity generation.

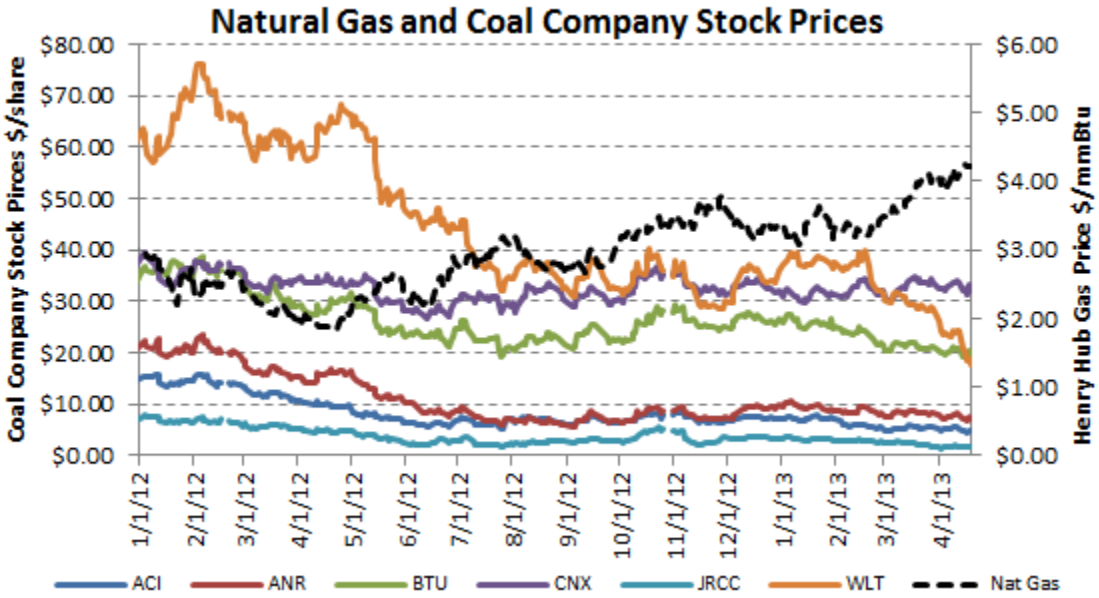
Exhibit 3



Source: ICAP Energy

11. The value of coal companies, like Patriot, and their assets is not correlated with changes in short-term natural gas prices. The value of these companies is based upon the long-term outlook for coal and the expected profitability of producing and selling coal. The stock prices of publicly-traded U.S. coal companies reflect investor expectations for the future profitability of mining coal in the United States. As shown on Exhibit 4, the stock prices for coal companies have fallen since the beginning of 2012 despite the large increase in short-term natural gas prices. The long-term prospects for coal have not improved, despite the increase in short-term gas prices.

Exhibit 4



12. While Mr. Buckner cites statements by executives of other metallurgical coal producers (Alpha Natural Resources, Arch Coal, James River Coal and Walter Energy) in February and March 2013 that the world coal market shows signs of improvement,[15] public investors obviously do not agree that their companies' future prospects have improved. From February 1, 2013 through April 19, 2013, the common stock prices of these four companies have declined by 19%, 32%, 44% and 53%, respectively.

B. Mr. Akunuri's Analysis of Patriot's Future Coal Revenues Is Fundamentally Flawed

13. Mr. Akunuri purports to perform a "sensitivity analysis to assess the impact of increased pricing on the profitability of Patriot"[16] by "[u]tilizing reasonable coal prices"[17]

[15] Buckner Decl. ¶¶ 81-83.

[16] Akunuri Decl. ¶ 21.

[17] Akunuri Decl. ¶ 23.

obtained from SNL Energy and Wood Mackenzie instead of using the prices in Patriot's Business Plan. Mr. Akunuri's analysis has a number of major flaws:

- He did not use Patriot's actual forecast of thermal coal sales revenues, even though he relied upon a document containing that forecast to determine the amount of priced and unpriced thermal coal sales.[18] Rather, he recalculated Patriot's thermal coal sales from the mine-by-mine forecasts and he made errors, which make the analysis inaccurate and misleading. As discussed above, Mr. Akunuri excluded the taxes that are included in Patriot's coal sales prices from his calculation of Patriot's thermal coal sales revenues under Patriot's business plan. The taxes excluded by Mr. Akunuri totaled in revenues for the 4-year period 2013 – 2016, which accounts for most of the difference in revenue in his "sensitivity analysis."
- Mr. Akunuri did not use the actual sales prices for the priced thermal coal sales (the coal which Patriot has already sold for future delivery under contracts with fixed prices) as reported by Patriot. Instead, he assumed that the sales of priced coal would be at the same price as the average price for all of Patriot's coal sales in the business plan.[19]
- Mr. Akunuri performs adjustments to the sales prices from the third-party market price forecasts to account for coal quality differences which are not proper measures of the impact of quality differences on market prices.[20]
- Mr. Akunuri calculates the difference in Patriot's coal **revenues**, not the difference in Patriot's **profitability** as he represents. Because Patriot pays royalties and severance taxes which are a percentage of the sales price,

[18] Akunuri Decl. Fig. 5; data room item 1.2.27.3.

[19] Akunuri Decl. Fig. 5, total priced tons at business plan price per ton.

[20] Additionally, Mr. Akunuri assumed that the actual heat content of Patriot's coal in 2012 would remain constant through the forecasted years, when in fact heat content changes from year to year and was uncharacteristically high in 2012. I have not utilized the forecasted heat content of the coals in my reanalysis, but assuming the 2012 values has the effect of amplifying the overstatement in revenue.

any increase in sales prices will be partly offset by increased costs of royalties and taxes.

14. I have recalculated the change in Patriot's coal sales revenues for the period 2013 – 2016 using the third-party price forecasts with the prices as adjusted by Mr. Akunuri. As shown on Exhibit 5, the increase in Patriot's revenues using the SNL and Wood Mackenzie price forecasts in 2016 would be

as calculated by Mr. Akunuri.[21]

Exhibit 5
Calculation of Change in Patriot Thermal Coal Revenues under Alternate Price Forecasts

15. Mr. Akunuri ignored the effect of the royalties and severance taxes paid by Patriot as a percentage of the sales price and assumed that an increase in revenues would be an increase in profitability. Patriot's consolidated income statements show that royalties and severance taxes

[21] The revenue increase using the Wood Mackenzie forecast is much larger in 2013 and 2014 because this is an old forecast published by Wood Mackenzie in 2012. SNL's recent forecast takes into account the current market conditions and does not show increased revenues over the Patriot Business Plan in those years. In footnote 25 of his declaration, Mr. Akunuri acknowledges that the coal for 2013 may already be sold, so the "sensitivities shown for 2013 may not be an accurate reflection of the potential impact of increased prices."

average between 9% and 10% of its sales revenues.[22] Thus any increase in revenues would be reduced by almost 10% to assess the impact on Patriot's profitability.

PRODUCTIVITY AND PRODUCTION COSTS

A. The Productivity of Patriot's UMWA Mines Is Worse Than Industry Average

16. Mr. Buckner claims that the labor productivity of Patriot's union mines is better than the average productivity in the coal industry in the regions where they operate. He is wrong. Patriot's union mines have productivity worse than the industry averages even though Patriot's union mines are operating in superior mining conditions and have the most expensive and productive mining equipment compared to their competitors in those coal regions. Patriot's mines should have labor productivity better than the industry average, not worse, because of the advantages of superior geology and equipment. The most likely explanation for this difference is that Patriot's UMWA contracts cause its union mines to have lower productivity than they should have.

17. Mr. Buckner used productivity data from the Energy Information Administration (EIA) and compared it to data on the productivity calculations in my declaration for the Highland and Federal mines and concluded that these data show "Patriot's union mines are above or in line with the average productivity in their respective regions."[23] This claim is false. In my declaration, I calculated labor productivity using only deep and surface mine labor, not including labor at preparation plants and office labor.[24] The EIA report used by Mr. Buckner calculated labor productivity from the same data source as I used: the Mine Safety and Health Administration ("MSHA") form 7000-2. However, EIA calculated labor productivity using total

[22] Data room item 1.2.2.3.

[23] Buckner Decl. ¶ 62.

[24] Schwartz Decl., p. 39.

labor hours, including preparation and office workers.[25] Thus the EIA data shows lower labor productivity per ton produced because it includes more categories of labor hours divided into the same number of tons. By comparing my results to EIA, this is not an "apples-to-apples" comparison of labor productivity. As Mr. Buckner said he "looked at the same data source" as I used for my calculations, he should have known that the methods were not directly comparable and he could have performed the calculations on the same basis.

18. Had Mr. Buckner looked at the same data source, he would have known that the Highland mine and preparation plant had a total labor productivity of 3.43 tons per hour (tph), not 3.86 tph in 2011, which number was based on only mine labor hours.[26] Thus the Highland mine had productivity lower than average for underground mines in western Kentucky (3.53 tph) and the Illinois Basin (3.70 tph), not higher.

19. Similarly, the 2011 labor productivity at the UMWA-represented Federal mine including all hours worked (as EIA does) was 2.96 tph[27], not 3.35 tph as I calculated by using just deep and surface miner hours. This productivity was much less than the average for Northern Appalachia deep mines of 3.45 tph and even further below the average of 4.00 tph for longwall deep mines (like Federal) calculated by EIA for Northern Appalachia.[28]

20. Mr. Buckner makes the same mistake in his comparison of Patriot's CAPP union deep mines. He compares the productivity using only the mine labor hours for the Big Mountain and Black Oak mines and compares them to the productivity for southern West Virginia from the

[25] EIA Annual Coal Report 2011, p. 34.

[26] MSHA, data retrieval system for mine numbers 1502709 and 1511012 show 3,886,256 tons divided by 1,006,011 hours worked at the mine plus 125,749 hours worked at the preparation plant for calendar year 2011.

[27] MSHA, data retrieval system for mine number 4601456 shows 3,744,764 tons divided by 1,264,731 total hours worked for calendar year 2011.

[28] EIA Annual Coal Report 2011, Table 22.

EIA report, which includes all hours (mine, preparation and office). I have allocated the hours for the preparation plants at which the coal from these mines is washed (the Big Mountain and Rocklick preparation plants) to determine the labor productivity on a comparable basis to the EIA data. Including the preparation plant labor, the 2011 labor productivities for the Big Mountain and Black Oak mines were 1.91 and 1.33 tph, while the EIA average for southern West Virginia was 1.62 tph.

21. However, even this comparison is not appropriate for Central Appalachia, because it does not account for the differences in mining conditions and markets. While the comparisons that I made in the Illinois Basin (Highland vs. average) and Northern Appalachia (Federal vs. other Pittsburgh seam longwall mines) were selected to compare these mines with mines in similar mining conditions producing similar coal products that compete in the market with the other mines, Big Mountain and Black Oak are very different mines, as Big Mountain produces thermal coal while Black Oak produces a very high-quality high-vol A metallurgical coal. Therefore, even though Big Mountain had higher productivity and lower production costs than Black Oak, Patriot closed Big Mountain in 2012 because it was unprofitable, while Black Oak is still operating profitably. The appropriate standard of comparison for these mines is other mines in southern West Virginia producing similar products with which they compete in the market.

22. I have compared the production and productivity data (mine hours only, excluding office and preparation hours) from MSHA for all southern West Virginia underground mines, divided into those producing thermal and metallurgical products and divided into UMWA and non-union mines. As shown on Exhibit 6, Patriot's UMWA-represented Big Mountain mine had labor productivity far below average for all thermal coal mines in southern West Virginia, which

is why it was closed in 2012. Patriot's Black Oak mine also had productivity below average for the region, but not as far below as Big Mountain.

Exhibit 6
Southern West Virginia Underground Mine Productivity

Market	Union	Mine	2009	2010	2011	2012
			Tons Produced			
Thermal	All	All	15,778,812	14,749,863	13,398,660	9,950,334
Thermal	Non-union	All	14,716,242	13,763,585	12,320,145	9,896,578
Thermal	UMWA	Big Mountain	986,174	986,278	1,078,515	53,756
Metallurgical	All	All	31,186,457	32,098,598	31,154,780	30,827,182
Metallurgical	Non-union	All	27,481,605	28,678,968	26,735,076	26,567,553
Metallurgical	UMWA	Black Oak	43,290	103,491	650,591	492,498
			Mine Hours Worked			
Thermal	All	All	4,953,367	5,046,295	5,043,337	3,423,977
Thermal	Non-union	All	4,454,149	4,556,670	4,542,428	3,365,389
Thermal	UMWA	Big Mountain	451,091	487,673	498,917	58,164
Metallurgical	All	All	13,921,392	15,969,110	18,912,893	18,094,908
Metallurgical	Non-union	All	11,548,531	13,320,307	15,860,846	15,745,566
Metallurgical	UMWA	Black Oak	64,643	97,650	446,002	313,849
			Tons per hour worked			
Thermal	All	All	3.19	2.92	2.66	2.91
Thermal	Non-union	All	3.30	3.02	2.71	2.94
Thermal	UMWA	Big Mountain	2.19	2.02	2.16	0.92
Big Mountain % of non-union			**66%**	**67%**	**80%**	**31%**
Metallurgical	All	All	2.24	2.01	1.65	1.70
Metallurgical	Non-union	All	2.38	2.15	1.69	1.69
Metallurgical	UMWA	Black Oak	0.67	1.06	1.46	1.57
Black Oak % of non-union			**28%**	**49%**	**87%**	**93%**

23. In summary, Mr. Buckner is simply wrong about Patriot's UMWA mines in all regions. All of Patriot's UMWA-represented mines have productivity below average for the competitors in the region producing the same type of coal.

24. Mr. Buckner also makes a grossly inappropriate comparison of Patriot's UMWA-represented Federal #2 mine and Patriot's non-union Panther and Brody (Black Stallion) mines.[29] These mines have little in common except that they are all underground mines. The Federal mine produces high-sulfur thermal coal and competes with other longwall mines in the thick Pittsburgh seam. The Panther and Brody mines produce low-sulfur metallurgical coal and compete with other mines producing similar high-quality coal in southern West Virginia. The Federal #2 mine has much superior geology, with thicker coal and less rock, so of course it has greater labor productivity than the Panther and Brody mines, but that does not show that Federal #2 is not hampered by the work rules in the NBCWA. In 2001, Federal #2 had a coal height of 94 inches (7.8 feet) and a preparation plant recovery of 77% (meaning only 23% of the raw coal mines was thrown away as waste after washing). In contrast, the Panther mine had a coal height of only 41 inches (3.4 feet) and the preparation plant recovery was just 37% (meaning 63% of the raw coal was thrown away in washing). The Brody mine had 53 inches of coal (4.4 feet) and preparation plant recovery of 47%. The biggest difference in mining costs among mines is geology, but this factor cannot be fixed. Among mines with the same geology, the productivity of the work force has the greatest impact on mining costs. The productivity at the Federal #2 mine in 2011 was only 3.35 tph, despite having the thickest seam in all of Appalachia. The Panther longwall mine had productivity of 2.20 tph while mining coal less than half as thick and throwing away almost 3 times the amount of raw coal. Measured in raw tons per hour worked, the Panther mine productivity was 5.95 tph, while Federal #2 mine was only 4.35 tph.

[29] Buckner Decl. ¶¶ 64, 66, 70.

25. Mr. Buckner makes the same inappropriate comparison between Patriot's UMWA-represented Highland mine and its non-union Dodge Hill mine.[30] In 2012, the Highland mine had labor productivity of 3.66 tph and was mining in coal height of 61 inches with a preparation plant recovery of 55%. Dodge Hill mine had productivity of 2.22 tph, but was mining 44 inches of coal with preparation plant yield of 40%. Dodge Hill is a high-cost mine, but it sells a higher-quality coal than most mines in the Illinois Basin, with a high sales price of $59.60 per ton in 2012. In contrast, Highland has lower costs, but its coal quality is similar to many high-sulfur mines in the Illinois Basin, with a sales price of $49.62 per ton in 2012.

26. Mr. Buckner does not mention the productivity of Patriot's UMWA-represented surface mines, which produce much of Patriot's thermal coal in the CAPP region (6.3 and 5.0 million tons in 2011 and 2012, respectively). These mines should have the best labor productivity in the entire region, because they have the lowest strip ratios (the amount of rock that needs to be removed per ton of coal produced, measured in bank cubic yards per ton) and the largest and most expensive mining equipment. Unfortunately, they have labor productivity lower than average, not higher. The EIA region average for southern West Virginia for large surface mine (producing more than 1.0 million tons per year) was 4.11 tph in 2011. Including all labor hours as EIA does in its tables (mine, preparation plant and office hours worked), Patriot's huge UMWA-represented Corridor G complex (Hobet 21 and Hill Fork mines) produced 3.6 million tons in 2011 and 2.8 million tons in 2012 and had average productivity of 3.13 tph in

[30] Buckner Decl. ¶ 57.

2011 and only 2.81 tph in 2012. Patriot's UMWA-represented Guyan complex (Guyan and Little White Oak mines) produced 2.7 and 2.2 million tons in 2011 and 2012, respectively, and had average labor productivity of 4.05 and 3.25 tph in those years, respectively. Patriot's UMWA-represented surface mines have all of the advantages of geology and capital investment in mining equipment over Patriot's competitors. For its primary earth-moving equipment, the Hobet 21 mine has a massive Bucyrus-Erie 1570 dragline, one of only two operating in all of Central Appalachia, which has an 80 cubic yard bucket. The Guyan mine has two Komatsu 5500 excavators with 37 cubic yard buckets. The typical surface mine in Central Appalachia uses much smaller front-end loaders (Caterpillar wheel loaders, with buckets typically less than 20 cubic yards). These mines also have attractive strip ratios. Hobet 21 had strip ratios of 15.3 and 15.8 in 2011 and 2012, respectively. Guyan had strip ratios of only 13.8 and 15.0 in 2011 and 2012 respectively. The typical surface mine in Central Appalachia is mining strip ratios of 18 – 20 bank cubic yards per ton. Despite their advantages, Patriot's huge UWMA-represented surface mines have lower productivity than the regional average. The only explanation for this poor performance is the handicap of the work rules in the UMWA labor contract.

B. Productivity of UMWA Mines in the Coal Industry

27. Mr. Buckner also cites my chart on the production and productivity of all of the Pittsburgh seam longwall mines and claims that it shows that the non-union Bailey mine had lower productivity in 2012 than 5 of the UMWA mines in that year.[31] He further points out that the chart shows that the productivity at the Bailey mine fell by more than 20% in 2012 from the prior year and opines that "[t]his drop is unlikely to be explained by the Bailey work force

[31] Schwartz Decl. ¶ 59; Buckner Decl. ¶ 61.

becoming 20% less efficient from 2011 to 2012." Contrary to Mr. Buckner's hypothesizing, there is a good explanation for the decline in the labor productivity at the Bailey mine in 2011 and 2012 from prior years. Consol Energy is building a huge expansion of the Bailey mine (called the BMX mine),[32] which resulted in the underground workforce increasing by 14% in 2011 and 20% in 2012, even though no more tons can yet be produced from the expansion. The increased workers to build the BMX mine caused the productivity to fall. Also, the productivity at both the Bailey and Enlow Fork mines was temporarily reduced in 2012 because of a structural failure at the preparation plant which interrupted production at both mines.[33]

28. Despite the decline in the Bailey mine productivity due to the expansion and the structural failure, the comparison of productivity among the Pittsburgh seam longwall mines shows the negative effects of the UMWA work rules quite clearly. This comparison, repeated in Exhibit 7 below, is an apples-to-apples comparison of 13 large mines all operating in the same seam with similar mining conditions and the same mining technology producing a similar product that competes in the same marketplace. The comparison shows a persistent difference in all years between the productivity at the UMWA mines and the non-union mines. Over the 4-year period, the non-union mines have productivity averaging 33% greater than the UMWA mines (which would have been even greater if not for the unusual factors depressing the Bailey mine productivity in 2012). This is a huge data sample; these mines produced a total of 310 million tons over this 4-year period. Because all of the other factors are the same, the only

[32] See "Consol Energy Announces 2012 Capital Budget" at http://phx.corporate-ir.net/phoenix.zhtml?c=66439&p=irol-newsArticle&ID=1646404&highlight=.

[33] See "Consol Energy Update Regarding Structural Failure at Bailey Prep Plant" at http://phx.corporate-ir.net/phoenix.zhtml?c=66439&p=irol-newsArticle&ID=1724431&highlight=.

explanation for the large and persistent difference in labor productivity is the negative effect of the UMWA contract and work rules.

Exhibit 7
Coal Production and Labor Productivity at Pittsburgh Seam Longwall Mines

				Tons Per Hour					Tons Produced				
Company	**Mine**	**ST**	**Union**	**2009**	**2010**	**2011**	**2012**	**Avg.**	**2009**	**2010**	**2011**	**2012**	**Total**
Murray Energy	Century	OH	None	6.03	6.24	6.34	6.73	6.36	6,033,455	6,214,246	7,080,629	8,446,709	27,775,039
Consol Energy	Enlow Fork	PA	None	6.97	6.07	6.24	5.44	6.16	11,092,684	9,941,681	10,190,255	9,459,485	40,684,105
Murray Energy	Powhatan	OH	UMWA	6.30	6.12	5.65	4.73	5.67	6,732,699	6,378,070	6,415,744	5,767,737	25,294,250
Alliance Resource	Tunnel Ridge	WV	None				5.38	5.38	-	-	-	1,580,447	1,580,447
Consol Energy	Bailey	PA	None	5.72	5.49	4.93	3.82	4.88	10,232,360	10,607,451	10,833,141	10,122,862	41,795,814
Consol Energy	McElroy	WV	UMWA	4.96	4.88	4.32	4.45	4.64	9,863,588	10,094,681	9,253,481	9,400,485	38,612,235
Alpha	Cumberland	PA	UMWA	4.80	4.23	4.25	4.87	4.53	6,818,681	5,764,385	6,185,076	6,425,363	25,193,505
Consol Energy	Loveridge	WV	UMWA	5.05	4.59	3.96	4.25	4.44	6,004,124	5,869,034	5,638,973	5,869,454	23,381,585
Consol Energy	Robinson Run	WV	UMWA	4.66	4.44	4.47	3.90	4.36	5,544,554	5,499,559	5,958,158	4,992,046	21,994,317
Patriot Coal	**Federal #2**	**WV**	**UMWA**	**4.09**	**4.07**	**3.35**	**3.56**	**3.74**	**3,810,192**	**3,731,625**	**3,744,764**	**4,044,937**	**15,331,518**
Consol Energy	Blacksville #2	WV	UMWA	3.33	3.79	3.67	3.27	3.53	3,768,844	4,507,606	4,341,984	3,231,148	15,849,582
Alpha	Emerald	PA	UMWA	4.44	3.68	2.74	3.31	3.53	5,558,640	4,901,640	3,713,206	4,384,253	18,557,739
Consol Energy	Shoemaker	WV	UMWA		2.82	3.43	3.40	3.23	-	3,849,862	5,148,574	5,316,374	14,314,810
				5.19	**4.73**	**4.46**	**4.33**	**4.65**	**75,459,821**	**77,359,840**	**78,503,985**	**79,041,300**	**310,364,946**
	Total		Non-union	6.25	5.86	5.68	4.99	5.64	27,358,499	26,763,378	28,104,025	29,609,503	111,835,405
	Total		UMWA	4.73	4.29	3.99	4.01	4.23	48,101,322	50,596,462	50,399,960	49,431,797	198,529,541

Source: Data filed with the Mine Safety and Health Administration
Note: Data excludes production and hours worked prior to longwall starts at the Tunnel Ridge and Shoemaker mines

29. The same EIA report which Mr. Buckner relies upon provides a direct comparison of the productivity between union and non-union mines in the regions where Patriot operates.[34] EIA specifically provides the difference in productivity between union mines and non-union mines in western Kentucky, where Patriot's Highland is the only union mine. The data show productivity of 3.43 tph for Highland and 3.55 tph for non-union underground mines in 2011.

30. In southern West Virginia, the EIA report shows that the average productivity for underground mines is 1.69 tph for non-union mines and only 1.30 tph for union mines (the UMWA is the only union representing coal mines in this region). For surface mines, EIA shows that the non-union mines average 3.39 tph, while the union mines average only 3.20 tph. Patriot produced most of the coal produced by union mines in southern West Virginia in 2011, with 6.3

[34] EIA Annual Coal Report 2011, Table 24.

million out of 8.9 million total union surface tons and 3.5 million out of 5.5 million tons of production from union underground mines.

C. Patriot's UMWA-Represented Mines Have Higher Costs Than Its Regional Competitors

31. In its Objection, the UMWA claims that my "own data" in my declaration filed in opposition to the motion for an equity committee show that Patriot's mines in Central Appalachia had lower costs than the average for the region and that "Patriot's mines in Central Appalachia were thus in a positive competitive position relative to its competitors."[35] This is not true. The UMWA has compared my chart on Figure F of that declaration, which shows Patriot's cash operating costs in *Appalachia*, with my chart on Figure G, which shows the regional average cash cost in *Central Appalachia*. The big difference is that Patriot's Federal #2 mine located in Northern Appalachia is included in the calculations in Figure F, but the Northern Appalachia mines are not included in the data for Central Appalachia in Figure G. Since the large longwall mines (like Federal #2) in Northern Appalachia have much lower costs than the mines in Central Appalachia, this comparison distorts the true difference in costs between Patriot and the Central Appalachia region.

32. Patriot's Federal #2 mine had average cash costs of $45.54 in 2011 and $44.27 per ton in 2012. Consol Energy is the largest producer in Northern Appalachia, with large longwall mines in the Pittsburgh seam similar to the Federal #2 mine. Consol reports a "thermal coal segment", which includes the Pittsburgh seam mines (Bailey, Blacksville #2, Enlow Fork, Loveridge, McElroy, Robinson Run and Shoemaker), plus some higher-cost Central Appalachia

[35] UMWA's Obj., pp. 28-29.

production from the Miller Creek and Fola complexes.[36] Consol's thermal coal segment average cash cost was $38.67 in 2011 and $40.60 per ton in 2012,[37] significantly less than Patriot's cash costs. Consol also reports a "high-vol metallurgical coal segment," which is principally coal sold from the non-union Bailey and Enlow Fork mines (as well as limited tonnage from the higher-cost Fola complex in Central Appalachia). This segment had average cash costs of $39.42 in 2011 and $38.28 in 2012, also substantially lower than the costs for the Federal #2 mine. The direct operating costs (including labor, supplies, maintenance, power and preparation plant charges, but excluding royalties, taxes and allocated direct services) for Consol's high-vol metallurgical segment (principally the Bailey and Enlow Fork mines) were just $30.15 in 2011 and $29.30 per ton in 2012. The direct operating costs for Consol's thermal coal segment were $29.86 and $31.56 per ton in 2011 and 2012, respectively. Measured on the same basis, the direct operating costs for the Federal #2 mine were $37.54 in 2011[38] and $37.66 in 2012.[39]

33. The financial results for the Illinois Basin operations of the publicly-traded U.S. coal producers for 2011 and 2012 are shown on Exhibit 8. These producers represented most of the total Illinois Basin production (77% in 2011 and 57% in 2012). Patriot had the highest cost operations in the entire region by a significant amount. The UMWA-represented Highland mine had cash operating costs that were $9.72 per ton above the average in 2011 and $9.74 per ton above average in 2012. The Highland mine has lower productivity, higher labor costs and higher total operating costs than its competition in the Illinois Basin.

[36] Consol Energy 2012 SEC Form 10-K, p. 172.

[37] Consol Energy 2012 SEC Form 10-K, p. 71.

[38] Complex Level EBITDAs, data room item 1.2.11.1.

[39] Mine level P&L 12-18-12.xls, data room item 1.2.25.6.

Exhibit 8
Public Financial Results for Illinois Basin Producers

	2011			2012		
	Coal Sales	Sales Price	Cash Cost	Coal Sales	Sales Price	Cash Cost
Company	**1000 tons**	**$/ton**	**$/ton**	**1000 tons**	**$/ton**	**$/ton**
Patriot Coal*	7,265	$42.89	$44.56	6,385	$49.88	$43.49
James River Coal	2,480	$42.49	$37.87	2,327	$44.30	$38.85
Vectren Corp.	5,200	$50.93	$36.97	4,500	$48.45	$38.30
Peabody Energy	29,100	$48.21	$34.37	27,400	$51.21	$35.63
Armstrong Energy	7,030	$42.57	$31.52			
Alliance Resource Partners	25,561	$50.45	$30.75	28,294	$52.51	$31.62
Hallador Energy	3,307	$41.73	$23.31	3,006	$43.70	$26.53
Foresight Energy	8,773	$45.87	$19.85			
Total/Average	**88,716**	**$47.50**	**$32.34**	**71,912**	**$50.89**	**$34.64**
Patriot - Highland Mine*	3,979	$40.28	$42.06	3,951	$49.62	$44.38

* Highland mine included in Patriot average above

Sources: SEC forms 10-K and S-1 and earnings releases; Patriot income statements
Note: Armstrong Energy and Foresight Energy have not filed updated forms S-1 for 2012

34. While Mr. Buckner is correct that labor costs (wage and benefit rates as well as productivity) are not the only costs incurred at a coal mine, they are the largest single cost category. For Patriot's largest underground mines in 2011, labor costs as a share of direct operating costs were 50% at Federal #2 and 41% at Highland. These mines are already equipped with modern highly-productive mining equipment and have geology better than average for the region. Labor costs are the largest controllable expense at Patriot's mines (many costs, such as fuel, power, taxes and royalties, are not controllable).

D. Patriot's UMWA-Represented Mines Have Higher Labor Costs Than Its Non-Union Mines

35. Mr. Buckner claims that Patriot's UMWA-represented mines have lower labor costs per ton produced than its non-union mines.[40] Mr. Buckner's analysis is far from the "apples-to-apples comparison" of the hourly worker wage and fringe costs that he claims. While Mr. Buckner admits in a footnote that he has excluded the retiree health costs in his comparisons, he fails to point out that he has also excluded Patriot's contribution to all of the UMWA funds from the UMWA hourly labor costs as well, including the large contribution to the 1974 Pension Plan, despite including the pension costs for the non-union employees. This selective exclusion of labor costs for the UMWA workers distorts the results of the analysis. As shown on Exhibit 9, Mr. Buckner excluded UMWA labor costs totaling per ton from his analysis, of which the contributions to the 1974 Pension Trust alone were per ton. Had he included those costs, the analysis would have shown that Patriot's UMWA-represented mines operate at a cost of per ton produced, while Patriot's non-union mines operate at a cost of per ton produced. Thus, it is not true that Patriot's labor costs per ton are lower at its UMWA-represented mines than at its non-union mines.

[40] Buckner Decl. ¶¶ 65-66.

Exhibit 9
Patriot Hourly Wage and Fringe Costs by Mine Complex

36. Further, Mr. Buckner has made no effort to consider the differences in mining conditions between Patriot's UMWA-represented mines and its non-union mines. These factors must be considered in an "apples-to-apples" comparison, as better geology will have a direct effect on labor productivity and labor costs per ton produced. I have summarized the most important measures of mining conditions for the underground and surface mines analyzed by Mr. Buckner for 2011 in Exhibit 10. At Patriot's UMWA-represented underground mines, the average coal height was 75 inches (with all 3 mines over 60 inches) and the average preparation plant yield (the percentage of raw material recovered as saleable coal) was 61%. In contrast, Patriot's non-union underground mines had average coal height of only 49 inches (with only one mine over 48 inches) and average preparation plant yield of 39%. For the surface mines, the best measure of mining conditions is the strip ratio, the amount of rock that must be removed per ton of saleable coal produced (measured in bank cubic yards per ton). Patriot's UMWA-represented mines had an average strip ratio of 14.8, while its non-union mines had an average strip ratio of 17.4.

Exhibit 10

Key Metrics of Mining Conditions at Patriot's Underground and Surface Mines - 2011

Mine Complex	Region	Union	Type	Tons Produced 1000	Coal Height inches	Prep Plant Yield %	Strip Ratio bcy/ton
Federal	NAPP	UMWA	UG	3,745	94	77%	
Big Mountain	CAPP	UMWA	UG	1,836	63	48%	
Highland	ILLB	UMWA	UG	3,886	62	58%	
		UMWA	**Average**	**9,467**	**75**	**61%**	
Panther	CAPP	Non-union	UG	1,843	41	37%	
Midland Trail	CAPP	Non-union	UG	1,489	68	35%	
Paint Creek	CAPP	Non-union	UG	889	42	34%	
Dodge Hill	ILLB	Non-union	UG	864	45	42%	
Bluegrass	ILLB	Non-union	UG	1,240	48	58%	
		Non-union	**Average**	**6,324**	**49**	**39%**	
Corridor G Job 21	CAPP	UMWA	Surface	2,775			15.3
Corridor G Hill Fork	CAPP	UMWA	Surface	855			16.5
Logan County	CAPP	UMWA	Surface	2,634			13.8
		UMWA	**Average**	**6,265**			**14.8**
Paint Creek	CAPP	Non-union	Surface	266			19.0
Bluegrass	ILLB	Non-union	Surface	1,206			17.0
		Non-union	**Average**	**1,472**			**17.4**

37. Given the much superior mining conditions at Patriot's UMWA-represented mines, Patriot should have much lower labor costs per ton of coal than at its non-union mines, yet it does not. The poor performance can only be attributed to the high cost per hour worked and low productivity due to its UMWA labor contracts.

38. I, Seth Schwartz, declare under penalty of perjury that the foregoing is true and correct.

Dated: April 23, 2013

/s/ Seth Schwartz
Seth Schwartz
President
Energy Ventures Analysis, Inc.

Appendix 1
MATERIALS CONSIDERED

I. Publicly Available Resources

- UMWA's Objection to the Motion to Reject Collective Bargaining Agreements and to Modify Retiree Benefits Pursuant to 11 U.S.C. §§ 1113 and 1114
- Declaration of Srinivas Akunuri in Opposition to the Debtors' Motion to Reject Collective Bargaining Agreements and to Modify Retiree Benefits Pursuant to 11 U.S.C. §§ 1113 and 1114
- Declaration of Micheal Buckner in Opposition to the Debtors' Motion to Reject Collective Bargaining Agreements and to Modify Retiree Benefits Pursuant to 11 U.S.C. §§ 1113 and 1114
- Declaration of Seth Schwartz in Support of the Debtors' Objections to Motion of Certain Interested Shareholders for Entry of an Order Directing the Appointment of an Official Committee of Equity Security Holders

II. Resources from Patriot's Data Room

- Production Information (Data Room Item 1.1.15)
- Business Plan Model (Data Room Item 1.2.2.3)
- Complex Level EBITDAs (Data Room Item 1.2.11.1)
- Coal Price Forecast Mapping (Data Room Item 1.2.21)
- Mine Level P&L (Data Room Item 1.2.25.6)
- Mine Level Revenue (Data Room Item 1.2.27.3)

III. Other Resources

- CME Group, Henry Hub Natural Gas Prices
- "Consol Energy Announces 2012 Capital Budget" at http://phx.corporate-ir.net/phoenix.zhtml?c=66439&p=irol-newsArticle&ID=1646404&highlight=
- "Consol Energy Update Regarding Structural Failure at Bailey Prep Plant" at http://phx.corporate-ir.net/phoenix.zhtml?c=66439&p=irol-newsArticle&ID=1724431&highlight=
- DOE/EIA, Annual Coal Report 2011
- E-mail from Steve Piper, Associate Director, Energy Fundamentals, SNL Energy, dated April 19, 2013
- EVA, Quarterly Coal Financial Report (Q4 2012)

- EVA, Quarterly Coal Financial Report (Q1 2013)
- ICAP Energy, coal market futures prices
- ICAP Energy, NYMEX natural gas market futures prices
- Mine Safety and Health Administration, Form 7000-2 data
- SEC public filings