

40°50'0"N

40°50'5"N



0 200 400 Feet

78°19'45"W

78°19'40"W

78°19'35"W

78°19'30"W

Old RR Grade

Beaver Run

LB-75

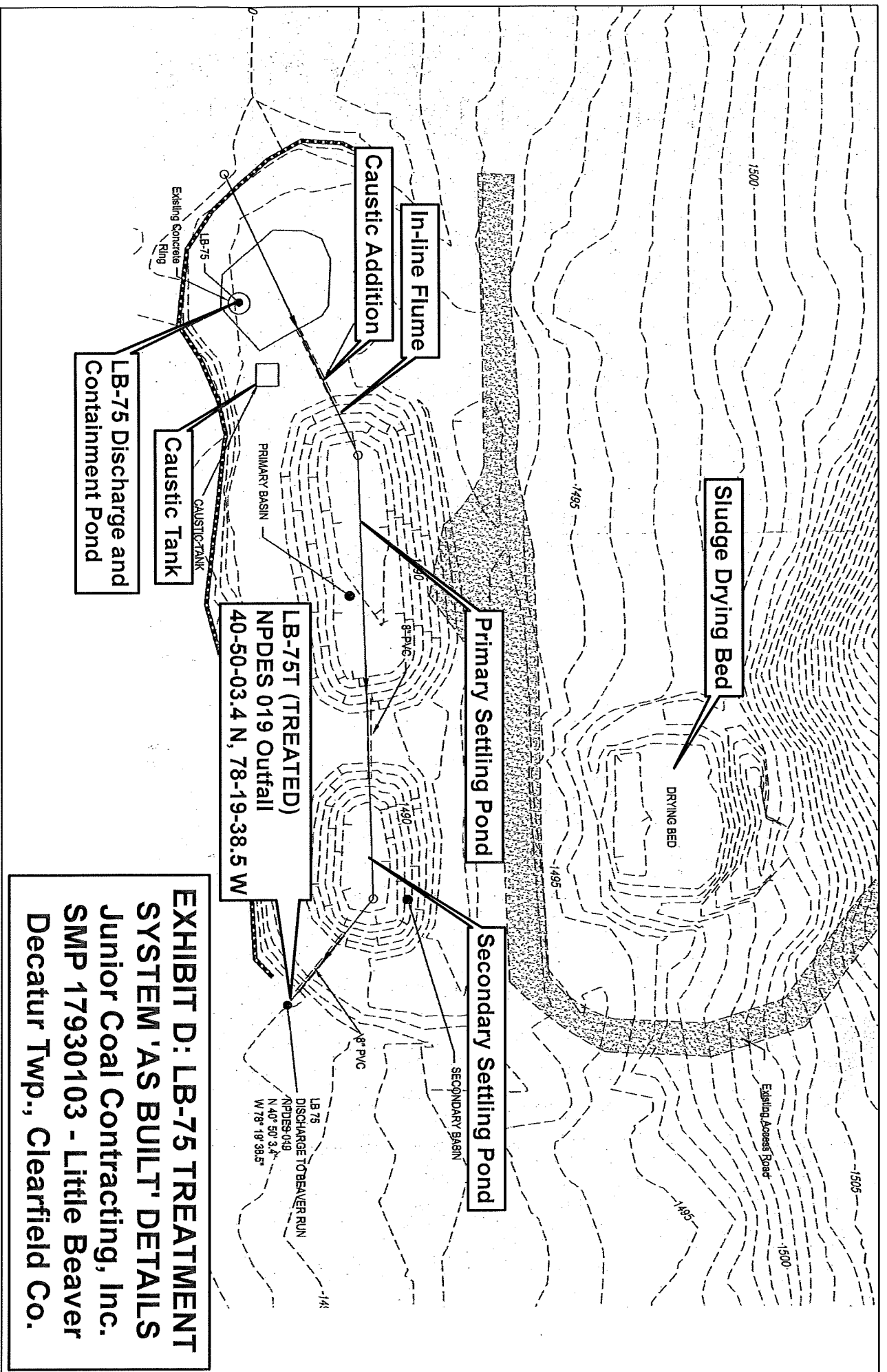
Little Beaver Surface  
Mine (Spring 2001)

**EXHIBIT B: LB-75 DISCHARGE**  
Junior Coal Contracting, Inc.  
SMP 17930103 - Little Beaver  
Decatur Twp., Clearfield Co.  
Aerial Photography: Spring 2001  
Centre County GIS Department

## EXHIBIT C: LB-75 Raw Water Quality (September 2015 - June 2016)

Date	Flow (gpm)	FldpH SU	LabpH SU	SC-lab µmhos/cm	Temp °C	Alkalinity mg/L	Net Acidity mg/L	Iron mg/L	Manganese mg/L	Aluminum mg/L	Sulfate mg/L	TSS mg/L
9/29/2015	1.0	5.7	6.0	1650	17.0	25	81	38.0	15.0	0.05	1012	15
10/15/2015	1.0	6.0	6.1	1570	11.0	17	76	45.2	16.4	0.08	1077	17
10/31/2015	1.1	6.2	6.2	1610	11.0	49	77	86.1	14.3	<0.05	1042	28
12/28/2015	1.0	6.2	6.2	1780	8.0	59	73	86.0	14.2	<0.05	959	5
1/26/2016	1.1	6.3	6.2	1700	9.0	67	76	81.1	13.7	<0.05	939	22
2/23/2016	7.6	6.4	6.3	1750	8.0	93	51	73.7	11.9	0.06	997	25
3/29/2016	1.5	6.4	6.3	1690	9.0	41	39	86.5	13.6	2.45	1022	85
4/30/2016	0.5	6.2	5.9	1410	13.0	11	21	7.5	12.4	<0.05	873	7
5/31/2016	1.5	6.2	6.2	1680	11.0	47	46	89.1	14.4	0.61	1070	53
6/28/2016	1.4	6.2	6.0	1720	14.0	48	53	82.8	13.5	<0.05	1019	88

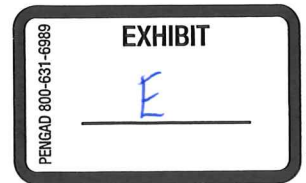




CLEARFIELD COUNTY  
RECORDER OF DEEDS

Maurene E. Inlow, Recorder  
Cynthia R. Coudriet - Chief Deputy

P.O. Box 361  
1 North Second Street, Suite 103  
Clearfield, Pennsylvania 16830



**\*RETURN DOCUMENT TO:**

GEO-TECH ENGINEERING INC  
4031 ALLPORT CUTOFF  
MORRISDALE, PA 16858

Instrument Number - 201610346  
Recorded On 9/2/2016 At 8:38:38 AM

\* Instrument Type - AGREEMENT

\* Total Pages - 5

Invoice Number - 313088

\* Mortgagor - JR LAND COMPANY INC

\* Mortgagee - JUNIOR COAL CONTRACTING INC

\* Customer - GEO-TECH ENGINEERING INC

**\* FEES**

STATE WRIT TAX	\$0.50
RECORDING FEES -	\$13.00
RECORDER	
RECORDER IMPROVEMENT	\$3.00
FUND	
COUNTY IMPROVEMENT FUND	\$2.00
TOTAL PAID	\$18.50

I hereby CERTIFY that this document  
is recorded in the Recorder's Office of  
Clearfield County, Pennsylvania.



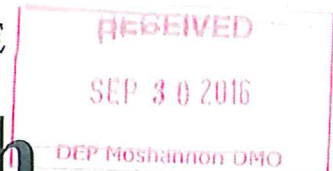
*Maurene E. Inlow*

Maurene E. Inlow  
Recorder of Deeds

THIS IS A CERTIFICATION PAGE

**Do Not Detach**

THIS PAGE IS NOW PART OF THIS LEGAL DOCUMENT



\* - Information denoted by an asterisk may change during the verification process and may not be reflected on this page.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF MINING PROGRAM

17930103

Permit No.

## CONSENT TO RIGHT OF ENTRY FOR OPERATION AND MAINTENANCE OF A MINE DRAINAGE TREATMENT FACILITY COVERED BY A BOND OR A POST-MINING DISCHARGE TREATMENT TRUST AGREEMENT

**Property Owner(s):** List everyone with an ownership interest in the property which is the subject of this Agreement.

Name: JR Land Company, Inc.

Address: 2330 Six Mile Road, Philipsburg, PA 16858

RECEIVED

SEP 30 2016

DEP Moshannon DMO

WHEREAS, the Property Owner(s) own surface property containing 3 +/- acres located in Decatur Township, Clearfield County, Pennsylvania, and described in Instrument # 200603634-3 in the Clearfield County Recorder's Office (the Property);

WHEREAS, the Commonwealth of Pennsylvania, Department of Environmental Protection (DEP) is authorized to administer and enforce the Surface Mining Conservation and Reclamation Act, 52 P.S. §§ 1396.1-1396.19a, the Clean Streams Law, 35 P.S. §§ 691.1-691.1001, and their implementing regulations, including requiring the construction, operation and maintenance of facilities designed to remediate the effects of mine drainage;

WHEREAS, Junior Coal Contracting, Inc. ("*Operator*") conducted surface mining activities on or adjacent to the Property pursuant to Surface Mining Permit No. 17930103;

WHEREAS, DEP has determined that mine drainage caused by *Operator's* mining activities is discharging from or passing through the Property, and the mine drainage on the Property is causing pollution, or a danger of pollution, to waters of the Commonwealth;

WHEREAS, *Operator* is required, under the mining law and its surface mining permit, to construct, operate and maintain mine drainage treatment facilities on a portion of the Property (the Treatment Facility Property), for purposes of treating the pollutional discharge(s);

WHEREAS, a map showing the boundaries of the Treatment Facility Property is attached as Exhibit A;

WHEREAS, *Operator* has posted a bond with the Department, or has established a trust with a financial institution as an alternative financial assurance mechanism, in order to provide sufficient funds to guarantee *Operator's* legal obligation to operate and maintain the mine drainage treatment facilities on the Property and the *Operator's* obligation for long-term treatment, or abatement, of the post-mining pollutional discharge(s) on the Property;

WHEREAS, to assure compliance with its legal obligations, *Operator* and DEP [*and the Trustee*] must have access to the Treatment Facility Property to conduct and/or oversee the mine drainage treatment activities required by law and the mining permit;

WHEREAS, *Operator* and DEP have requested and the Property Owner(s) is willing to grant *Operator* and DEP [*and Trustee*] a right of entry into, under, over and upon the Treatment Facility Property to construct, operate and maintain mine drainage treatment facilities;

WHEREAS, the Property Owner(s) acknowledge that treatment of the mine drainage on the Property will provide benefits to the Property Owner and to the Commonwealth through abatement of a nuisance, restoration of land affected by mining operations, and prevention of pollution to waters of the Commonwealth;



NOW THEREFORE, in consideration of the benefits which the Property Owner(s) and the general public will receive, and with the intention of being legally bound, it is agreed as follows:

1. Right of Entry. The Property Owner(s) hereby grants and conveys to *Operator* and DEP [and *Trustee*], its employees, agents, servants, contractors and subcontractors, a right of entry into, under, over and upon the Treatment Facility Property. This right of entry includes all necessary rights of ingress, egress and regress with all personnel, materials, and equipment needed to perform the discharge treatment activities.

2. Duration of Right of Entry. The term of this Right of Entry shall extend for the length of time necessary to complete the discharge treatment activities in accordance with applicable law. It is specifically understood and agreed that the term of this Right of Entry extends for the length of time necessary to operate and maintain all mine drainage treatment facilities on the Treatment Facility Property, and shall only terminate when such treatment facilities are no longer necessary to remediate or prevent pollution to waters of the Commonwealth.

3. Insurance. DEP will require *Operator* to obtain and keep in force insurance coverage in accordance with the requirements of 25 Pa. Code § 86.168.

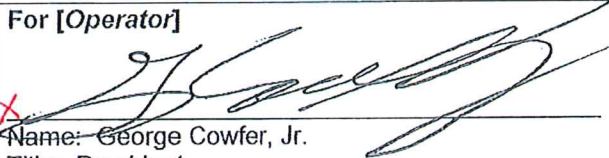
4. Property Use. During the term of this Right of Entry, the Property Owner(s) will not, without the written consent of DEP, make any use of the Property which will interfere with the construction, operation or maintenance of the mine drainage treatment facilities installed on the Treatment Facility Property.

5. Notification. This Consent to Right of Entry shall be recorded by *Operator* in the Clearfield County Recorder's Office within thirty days of its execution. In the event that the Property Owner(s) intends to sell, lease, or otherwise transfer any interest in the Property prior to the termination of this Right of Entry, the Property Owners shall advise the prospective owner or lessee of the terms and conditions of this Right of Entry. The Property Owner(s) shall advise DEP, by notifying the Department representative whose signature appears below or his successor, of the intent to sell the Property prior to any sale.

6. Representation of Interests. The Property Owners represent that they are the only persons authorized to grant access to the Treatment Facility Property.


7. Binding on Successors. All the covenants, representations, consents, waivers and agreements contained herein shall be binding upon and inure to the benefit of the parties and their heirs, successors and assigns.

For [Operator]

X   
Name: George Cowfer, Jr.  
Title: President

X   
Witness

For the Department of Environmental Protection:

  
Name: Michael Smith  
Title: District Mine Manager

  
Witness

IN WITNESS WHEREOF, each of the parties set its respective hand and seal, for itself, its heirs, executors, administrators, successors and assigns, intending to be legally bound, this 30<sup>th</sup> day of August, 2016.



**The Property Owner(s)**

(Each owner sign and print  
their name under the signature.)

X [Signature]  
Name: George D. Cowfer Jr., President of JR Land Company, Inc.

\_\_\_\_\_  
Name:

**ACKNOWLEDGEMENT**

STATE OF Pennsylvania

:

ss

COUNTY OF \_\_\_\_\_

:

On this, the 30<sup>th</sup> day of AUGUST, 2016, before me, the undersigned Notary, personally appeared

\_\_\_\_\_  
George D. Cowfer Jr., President of JR Land Company, Inc.

(Name (s))

known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to this instrument, and who acknowledged that (he, she or they) have executed the same and desire it to be recorded.

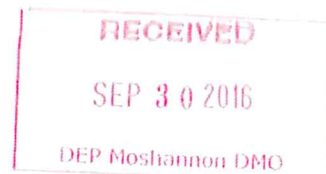
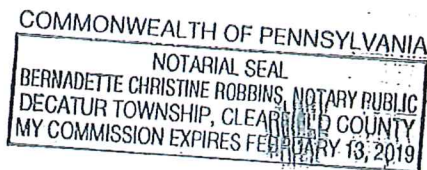
IN WITNESS WHEREOF, I have hereunder set my hand and official seal.

(SEAL)

[Signature]  
Notary Public

My Commission Expires:

2/13/19

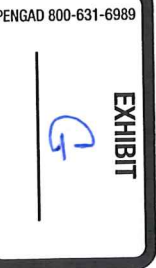


# TREATMENT BOND/TRUST CALCULATOR

Prepared For: **Junior Coal - Little Beaver**  
Treatment System(s) ID: **LB-75**

Date (mm/dd/yy): **8/15/2016 rev**

(c) 2003, 2005, 2006, 2007 by SCMF



Inflation Rate:	3.1%
Yrs to Treat start:	0
Annual Treatment Cost:	\$5,809.00
Trust Fees:	1.50%
Bond (not needed for rec):	\$0.00
Investment Ratios:	
stock:	80%
bond:	20%
Effective Rate of Return:	8.43%
Volatility Index:	1.16
Rec Bond Rate of Return:	6.00%
Remaining Time on Permit:	1 years

Options	O&M only	Total with Recap	Total with Recap & Insurance
option #1			
conventional bond:	\$212,509.04	\$212,509.04	\$221,565.26
bond adjustment:	\$212,509.04	\$212,509.04	\$221,565.26
option #2			
fully funded trust:	\$133,163.21	\$134,879.21	\$137,971.12
			trust in year 1

PV of Recap (today's \$\$) @	8.43%	Eff RoR &	3.1% Inf:	\$1,716.00 for trust in year 1
PV of Recap (today's \$\$) @	6.00%	Eff RoR &	3.1% Inf:	\$0.00 for bond in year 1
				\$0.00 for bond in year 2

Liability Insurance Factor @	\$1.00 per year, per \$1000 in the total PV of the Trust:	\$134.88 per year	PV Insurance:	\$3,091.92
Liability Insurance Factor @	\$1.00 per year, per \$1000 in total Bond:	\$212.51 per year	PV Insurance:	\$7,774.16

Fields in RED can be updated  
Fields in BLUE are fixed or calculated  
Fields in GREEN are partial amounts  
Highlighted Fields in GREEN are final amounts



Company Name Junior Coal

Printed on 08/15/2016

Project Junior Coal - Little BeaverSite Name LB-75 Treatment System**AMD TREAT****Costs****AMD TREAT MAIN COST FORM****AMDTREAT**

<u>Passive Treatment</u>	<u>A</u>	<u>S</u>	
Vertical Flow Pond			\$0
Anoxic Limestone Drain			\$0
Anaerobic Wetlands			\$0
Aerobic Wetlands			\$0
Manganese Removal Bed			\$0
Oxic Limestone Channel			\$0
Limestone Bed			\$0
BIO Reactor			\$0
Passive Subtotal:			\$0
<u>Active Treatment</u>			
Caustic Soda	0	1	\$0
Hydrated Lime			\$0
Pebble Quick Lime			\$0
Ammonia			\$0
Oxidants			\$0
Soda Ash			\$0
Active Subtotal:			\$0
<u>Ancillary Cost</u>			
Ponds	2	0	\$10,000
Roads			\$0
Land Access			\$0
Ditching			\$0
Engineering Cost	1	0	\$1,541
Ancillary Subtotal:			\$11,541
Other Cost (Capital Cost)			\$5,412
Total Capital Cost:			\$16,953
<u>Annual Costs</u>			
Sampling	1	0	\$2,307
Labor	1	0	\$1,490
Maintenance	1	0	\$539
Pumping			\$0
Chemical Cost	1	0	\$967
Oxidant Chem Cost			\$0
Sludge Removal	1	0	\$506
Other Cost (Annual Cost)			\$0
Land Access (Annual Cost)			\$0
Total Annual Cost:			\$5,809
Other Cost	1	0	

**Water Quality**

Design Flow	19.50	gpm
Typical Flow	8.74	gpm
Total Iron	71.16	mg/L
Ferrous Iron	71.16	mg/L
Aluminum	0.22	mg/L
Manganese	18.48	mg/L
pH	6.17	su
Alkalinity	52.20	mg/L
TIC	37.13	mg/L

- ☒ Calculate Net Acidity  
☐ Enter Hot Acidity manually

Acidity 110.11 mg/L

Sulfate	986.80	mg/L
Chloride	0.00	mg/L
Calcium	0.00	mg/L
Magnesium	0.00	mg/L
Sodium	0.00	mg/L
Water Temperature	10.02	C
Specific Conductivity	1679.00	uS/cm
Total Dissolved Solids	0.00	mg/L
Dissolved Oxygen	0.01	mg/L
Typical Acid Loading	2.1	tons/yr

Total Annual Cost: per  
 1000 Gal of H2O Treated \$1.263

Company Name Junior Coal

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System

COMMENTS: AMD Treat review by Aaron J. Pontzer

Revised 7/29/16. Used chemical cost. \$1.08/gal for caustic soda. Revised 8/4/16 for Recap Costs. Included liner. Revised 8/12/16 to change pipe cost to \$7/ft, updated annual treatment cost, and PV of Recap. Revised 8/15/16 to change pipe cost for ponds to \$7/ft.



Company Name Junior Coal

Printed on 08/15/2016

Project Junior Coal - Little BeaverSite Name LB-75 Treatment System

## AMD TREAT PONDS



AMD TREAT

Pond Name Primary Sedimentation Pond

## Pond Design Based On:

☒ Retention Time1. Desired Retention Time 24.0 hours☒ 2. Include Sludge Removal?3. Sludge Removal Frequency 2.00 times/year☐ 4. Titration?5. Sludge Rate            gal sludge/  
gal H2O6. Percent Solids 30.00 %7. Sludge Density 8.35 lbs./gal☐ Pond Size8. Pond Length at Top of Freeboard            ft9. Pond Width at Top of Freeboard            ft

Run Rise

10. Slope Ratio of Pond Sides 2.0 : 111. Freeboard Depth 2.0 ft12. Water Depth 4.0 ft13. Excavation Unit Cost 5.50 \$/yd314. Total Length of Effluent  
/ Influent Pipe 50.00 ft15. Unit Cost of Pipe 7.00 \$/ft

## Liner Cost

☐ No Liner☐ Clay Liner16. Clay Liner Unit Cost            \$/yd317. Thickness of Clay Liner            ft☒ Synthetic Liner18. Synthetic Liner Unit Cost 5.50 \$/yd2☒ 19. Clearing and Grubbing?☐ 20. Land Multiplier            ratio☒ 21. Clear/Grub Acres 0.50 acres22. Clear and Grub Unit Cost 1300.00 \$/acre23. Revegetation Cost 1500.00 \$/acre24. Cost of Baffles 0 \$

## Calculated Pond Dimensions per Pond

25. Length at Top of Freeboard 63 ft26. Width at Top of Freeboard 35 ft27. Freeboard Volume 282 yd328. Water Volume 142 yd329. Estimated Annual Sludge 6 yd3/yr30. Volume of Sludge  
per Removal 3 yd3/  
removal31. Excavation Volume 0.08 acre ft32. Excavation Volume 142 yd333. Clear and Grub Area 0.50 acres34. Liner Area 371 yd235. Calculated Retention Time 24 hours

## Ponds Sub-Totals per Pond

36. Excavation Cost 783 \$37. Pipe Cost 350 \$38. Liner Cost 2,044 \$39. Clearing and Grubbing Cost 650 \$40. Revegetation Cost 39 \$41. Baffle Cost 0 \$☒ 42. Estimated Cost 3,867 \$☒ 43. Accept Minimum Pond Cost?The Recommended Minimum Construction  
Cost of Building a Pond is \$ 5,00044. Recommended Minimum Cost 5,000 \$45. Total Cost 5,000 \$☐ Opening Screen  
Water ParametersInfluent Water  
Parameters  
that Affect  
Ponds

Calculated Acidity

110.11 mg/L

Alkalinity

52.20 mg/L☒ Calculate Net  
Acidity  
(Acid-Alkalinity)☐ Enter Net Acidity  
manuallyNet Acidity  
(Hot Acidity)0.00 mg/L

## Design Flow

19.50 gpm

Typical Flow

8.74 gpm

Total Iron

71.16 mg/L

Aluminum

0.22 mg/L

Manganese

18.48 mg/L

Record Number

1 of 2

Company Name Junior Coal

Printed on 08/15/2016

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System

## AMD TREAT PONDS



AMDTREAT

Pond Name Secondary Sediment Pond

### Pond Design Based On:

#### ☒ Retention Time

1. Desired Retention Time 12.0 hours

#### ☒ 2. Include Sludge Removal?

3. Sludge Removal Frequency 2.00 times/year

#### ☐ 4. Titration?

5. Sludge Rate            gal sludge/  
gal H<sub>2</sub>O

6. Percent Solids 30.00 %

7. Sludge Density 8.35 lbs./gal

#### ☐ Pond Size

8. Pond Length at Top of Freeboard            ft

9. Pond Width at Top of Freeboard            ft

Run Rise

10. Slope Ratio of Pond Sides. 2.0 : 1

11. Freeboard Depth 2.0 ft

12. Water Depth 4.0 ft

13. Excavation Unit Cost 5.50 \$/yd<sup>3</sup>

14. Total Length of Effluent  
/ Influent Pipe 45.00 ft

15. Unit Cost of Pipe 7.00 \$/ft

#### Liner Cost

#### ☐ No Liner

#### ☐ Clay Liner

16. Clay Liner Unit Cost            \$/yd<sup>3</sup>

17. Thickness of Clay Liner            ft

#### ☒ Synthetic Liner

18. Synthetic Liner Unit Cost 5.50 \$/yd<sup>2</sup>

#### ☒ 19. Clearing and Grubbing?

20. Land Multiplier            ratio

21. Clear/Grub Acres 0.50 acres

22. Clear and Grub Unit Cost 1300.00 \$/acre

23. Revegetation Cost 1500.00 \$/acre

24. Cost of Baffles 0 \$

### Calculated Pond Dimensions per Pond

25. Length at Top of Freeboard 50 ft

26. Width at Top of Freeboard 29 ft

27. Freeboard Volume 161 yd<sup>3</sup>

28. Water Volume 72 yd<sup>3</sup>

29. Estimated Annual Sludge 6 yd<sup>3</sup>/yr

30. Volume of Sludge  
per Removal 3 yd<sup>3</sup>/removal

31. Excavation Volume 0.04 acre ft

32. Excavation Volume 72 yd<sup>3</sup>

33. Clear and Grub Area 0.50 acres

34. Liner Area 263 yd<sup>2</sup>

35. Calculated Retention Time 12 hours

### Ponds Sub-Totals per Pond

36. Excavation Cost 401 \$

37. Pipe Cost 315 \$

38. Liner Cost 1,447 \$

39. Clearing and Grubbing Cost 650 \$

40. Revegetation Cost 25 \$

41. Baffle Cost 0 \$

☒ 42. Estimated Cost 2,839 \$

#### ☒ 43. Accept Minimum Pond Cost?

The Recommended Minimum Construction  
Cost of Building a Pond is \$ 5,000

44. Recommended Minimum Cost 5,000 \$

45. Total Cost 5,000 \$

#### ☐ Opening Screen Water Parameters

#### Influent Water Parameters that Affect Ponds

Calculated Acidity  
10.11 mg/L

Alkalinity  
52.20 mg/L

#### ☒ Calculate Net Acidity (Acid-Alkalinity)

#### ☐ Enter Net Acidity manually

Net Acidity  
(Hot Acidity)  
0.00 mg/L

#### Design Flow

19.50 gpm

#### Typical Flow

8.74 gpm

#### Total Iron

71.16 mg/L

#### Aluminum

0.22 mg/L

#### Manganese

18.48 mg/L

Record Number  
2 of 2



Company Name Junior Coal  
Project Junior Coal - Little Beaver  
Site Name LB-75 Treatment System

Printed on 08/15/2016



AMD TREAT

## AMD TREAT

### ENGINEERING COST

1. Capital Cost *	15,412	\$
<input checked="" type="radio"/> 2. Per Cent of Capital Cost	10.00	%
<input type="radio"/> 3. Actual Engineering Cost		\$

4. Total Engineering Cost 1,541 \$

\* Total Capital Cost minus Engineering and  
Land Access Capital Cost

Company Name Junior Coal

Printed on 08/15/2016

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System

## AMD TREAT

### SAMPLING



AMDTREAT

Sampling Name 9 samples per quarter, 3 per month, 2 visits per m

#### ☒ Estimate Sampling Cost

- |                               |                                    |              |
|-------------------------------|------------------------------------|--------------|
| 1. Unit Labor Cost            | <input type="text" value="35.00"/> | \$/hr        |
| 2. Collection Time per Sample | <input type="text" value="0.39"/>  | hours/sample |
| 3. Travel Time                | <input type="text" value="0.67"/>  | hr           |
| 4. Sample Frequency           | <input type="text" value="3.00"/>  | samples/mo   |
| 5. Lab Cost Per Sample        | <input type="text" value="27.00"/> | \$/sample    |
| 6. Number of Sample Points    | <input type="text" value="1"/>     | points       |

#### ☐ Enter Established Annual Sampling Cost

7. Actual Annual Sampling Cost  \$

#### Sampling Sub-Totals

- |                                |                                  |    |
|--------------------------------|----------------------------------|----|
| 8. Yearly Sample Analysis Cost | <input type="text" value="972"/> | \$ |
| 9. Yearly Travel Cost          | <input type="text" value="844"/> | \$ |
| 10. Yearly Collection Cost     | <input type="text" value="491"/> | \$ |

11. Sampling Cost  \$

Record Number 1 of 1



Company Name Junior Coal

Printed on 08/15/2016

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System



## AMD TREAT

### LABOR

AMDTREAT

Labor Name

☒ **Estimate Labor Cost**

1. Site Visits per Week

2. Site Labor Time per Visit  hours

3. Travel Time per Visit  hours

4. Unit Labor Cost  \$/hour

☐ **Enter Established Annual Labor Cost**

5. Actual Annual Labor Cost  \$

6. Total Cost  \$

Record Number 1 of 1

Company Name Junior Coal

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System



AMD TREAT

## AMD TREAT

### MAINTENANCE

☒ **Estimate Maintenance Cost**

1. Percent of Active Cost  %
2. Percent of Passive Cost  %
3. Percent of Ancillary Cost \*  %
4. Percent of Other Capital Cost  %

☐ **Enter Established Annual Maintenance Cost**

5. Annual Maintenance Cost  \$

#### Maintenance Sub-Totals

- 6 Total Maintenance Active Cost  \$
7. Total Maintenance Passive Cost  \$
8. Total Maintenance Ancillary Cost  \$
9. Total Maintenance Other Capital Cost  \$

10. Total Maintenance Cost  \$

\* Ancillary Cost does not include Cost for  
Land Access and Engineering Cost

Company Name Junior Coal  
 Project Junior Coal - Little Beaver  
 Site Name LB-75 Treatment System



# AMD TREAT CHEMICAL COST

AMDTREAT

Chemical Cost Name:

## ☒ Opening Screen Water Parameters

Influent Water Parameters that Affect Chemical Cost  
 Calculated Acidity  mg/L  
 Alkalinity  mg/L

☒ Calculate Net Acidity (Acid-Alkalinity)  
☐ Enter Net Acidity manually  
 Net Acidity (Hot Acidity)  mg/L

Design Flow  gpm  
 Typical Flow  gpm  
 Total Iron  mg/L  
 Aluminum  mg/L  
 Manganese  mg/L

Record Number  
 1 of 1

## ☐ A. Hydrated Lime ?

☒ 1 Titration?

2. Hydrated Lime Titration Amount

lbs of hydrated lime / gal of H<sub>2</sub>O

3. Hydrated Lime Purity

%

4. Mixing Efficiency of Hydrated Lime

%

5. Hydrated Lime Unit Cost

\$/lb

## ☐ B. Pebble Quick Lime ?

☒ 6. Titration?

7. Pebble Lime Titration Amount

lbs of Pebble Lime / gal of H<sub>2</sub>O

8. Pebble Lime Purity

%

9. Mixing Efficiency of Pebble Lime

%

## ☒ Delivered in Bags

10. Pebble Lime Bag Unit Cost

\$/lb

## ☒ Bulk Delivery

11. Pebble Lime Bulk Unit Cost

\$/lb

## ☒ C. Caustic Soda ?

☐ 12. Titration?

13. Caustic Titration Amount

gal of caustic / gal H<sub>2</sub>O

14. Caustic Purity

purity of 20% caustic solution

15. Mixing Efficiency of Caustic

%

## ☐ Non-Bulk Delivery

16. Caustic Non-Bulk Unit Cost

\$/gal

## ☒ Bulk Delivery

17. Caustic Bulk Unit Cost

\$/gal

☐ 18. Flocculents?

19. Flocculent Consumption

gal/hr

20. Flocculent Unit Cost

\$/gal

## ☐ E. Anhydrous Ammonia ?

☒ 21. Titration?

22. Ammonia Titration Amount

lbs of ammonia / gal H<sub>2</sub>O

23. Ammonia Purity

%

24. Mixing Efficiency of Ammonia

%

## ☒ Non-Bulk Delivery

25. Ammonia Non-Bulk Unit Cost

\$/lb

## ☒ Bulk Delivery

26. Ammonia Bulk Unit Cost

\$/lb

## ☐ F. Soda Ash ?

☒ 27. Titration?

28. Soda Ash Titration Amount

lbs of soda ash / gal of H<sub>2</sub>O

29. Soda Ash Purity

%

30. Mixing Efficiency of Soda Ash

%

31. Soda Ash Unit Cost

\$/lb

## ☐ G. Known Chemical Cost ?

32. Known Annual Chemical Cost

\$/

## Chemical Cost Sub-Totals

33. Total Hydrated Lime Cost

\$/

34. Total Pebble Lime Cost

\$/

35. Total Caustic Soda Cost

\$/

36. Total Anhydrous Ammonia Cost

\$/

37. Total Soda Ash Cost

\$/

38. Total Known Chemical Cost

\$/

39. Total Flocculent Cost

\$/

## 40. Selected Chemical: CAUSTIC SODA

Annual Chemical Cost

\$/

## Annual Amount of Chemicals Consumed

lbs

lbs

gals

lbs

lbs

gals

Company Name Junior Coal

Project Junior Coal - Little Beaver

Site Name LB-75 Treatment System

Printed on 08/15/2016



## AMD TREAT SLUDGE REMOVAL

AMD TREAT

☐ Opening Screen  
Water Parameters

Influent Water Parameters that Affect Sludge Removal
Calculated Acidity
140.11 mg/L
Alkalinity
52.20 mg/L
<input checked="" type="radio"/> Calculate Net Acidity (Acid Alkalinity)
<input type="radio"/> Enter Net Acidity manually
Net Acidity (Hot Acidity)
0.00 mg/L
Design Flow
19.50 gpm
Typical Flow
8.74 gpm
Total Iron
71 mg/L
Aluminum
0 mg/L
Manganese
18 mg/L

Sludge Removal Name

### 1. Select One Selection for Method of Removing Sludge

- ☒ Sludge Removal by \$ per Gallon
2. Sludge Removal Unit Cost  \$/gal
- ☐ Sludge Removal by Vacuum Truck
3. Vacuum Truck Unit Cost  \$/hr
4. Mobilization Cost  \$
5. Hours to be Used  hr
- ☐ Sludge Removal by Mechanical Excavation
6. Mechanical Excavation Unit Rate  \$/hr
7. Mobilization Cost  \$
8. Hours to be Used  hr
- ☐ Sludge Removal by Lagoon Cleaner
9. Lagoon Cleaning Unit Rate  \$/hr
10. Mobilization Cost  \$
11. Hours to be Used  hr
- ☐ Actual Sludge Removal Cost
12. Actual Sludge Removal Cost  \$

13. Off Site Disposal Cost  \$

Record Number 1 of 1

### Concentrations from Main Water Quality Screen

14. Iron Concentration  mg/L

15. Manganese Concentration  mg/L

16. Aluminum Concentration  mg/L

17. Total Miscellaneous Concentration  mg/L

18. Percent Solids  %

19. Sludge Density  lbs/gal

☐ 20. Titration?

21. Gal. of Sludge per Gal of Water Treated  gal

22. Estimated Sludge Volume  yd<sup>3</sup>/yr

### Cost for Sludge Removal Types

23. Removal by \$ per Gallon  \$

24. Removal by Vacuum Truck  \$

25. Removal by Mechanical Excavation  \$

26. Removal by Lagoon Cleaner  \$

27. Actual Sludge Removal Cost  \$

### Sludge Removal Sub-Totals

28. Currently Selected Removal Cost  \$

Plus Off Site Disposal Cost



Company Name Junior CoalProject Junior Coal - Little BeaverSite Name LB-75 Treatment System

## AMD TREAT OTHER COST

AMDTREAT

Other Cost Name Junior Coal - Little Beaver

A. Description of Item	B. Unit Cost Per Item	C. Quantity	D. Total Item Cost	E. Capital Cost Annual Cost
1. 8" PVC pipe	7.00	95	665	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
2. Trash Racks	50.00	2	100	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
3. 8" Valves	380.00	2	760	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
4. Sluice Box	400.00	1	400	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
5. Synthetic Liner	5.50	634	3,487	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
6.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
7.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
8.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
9.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
10.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
11.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
12.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
13.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
14.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
15.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost

Record Number

1 of 1

Current Capital Cost 5,412 \$Current Annual Cost 0 \$Total Capital Cost 5,412 \$Total Annual Cost 0 \$

Company Name Junior CoalProject Junior Coal - Little BeaverSite Name LB-75 Treatment System

# **AMD TREAT RECAPITIALIZATION COST**

**AMDTREAT**Calculation Period 75 yrs Inflation Rate 3.10 %Net Return Rate 8.43 %Recapitalization Name Updated 8/4/16 (liner)

A.	B	C	D	E	F	G
Description of Item	Unit Cost Per Item	Quantity	Total Item Cost	Life Cycle	Number of Periods	Total PV
1. PVC 8"	7	95	665	30	2	179
2. Synthetic Liner (634 yd2)	5	634	3,170	30	2	853
3. Trash Rack	50	2	100	25	3	39
4. Valves	380	2	760	25	3	294
5. Sluice Box	400	1	400	20	3	219
6.	0	0	0	0	0	0
7.	0	0	0	0	0	0
8.	0	0	0	0	0	0
9.	0	0	0	0	0	0
10.	0	0	0	0	0	0
11.	0	0	0	0	0	0
12.	0	0	0	0	0	0
13.	0	0	0	0	0	0
14.	0	0	0	0	0	0
15.	0	0	0	0	0	0
16.	0	0	0	0	0	0
17.	0	0	0	0	0	0
18.	0	0	0	0	0	0
19.	0	0	0	0	0	0
20.	0	0	0	0	0	0

Total Capital Cost 5,095 \$PV Grand Total 1,583 \$

Company Name Junior Coal  
 Project Junior Coal - Little Beaver  
 Site Name LB-75 Treatment System



## AMD TREAT FINANCIAL FORECASTING

AMDTREAT

Treatment System 1	Treatment System 2
<div> <input type="checkbox"/> 6. Obtain Records from Recapitalization Tool for Replacement Costs                     </div> <div> <input type="checkbox"/> 7. Recapitalization Inflation Rate <input type="text" value="3.100"/> %  <input type="checkbox"/> 8. Recapitalization Net Rate of Return <input type="text" value="6.000"/> %  <input type="checkbox"/> 9. Recapitalization Term of Analysis <input type="text" value="75.0"/> years                     </div> <div> <input type="checkbox"/> 10. Total Capital Cost from Recapitalization Tool <input type="text" value="200"/> \$  <input type="checkbox"/> 11. PV Grand Total from Recapitalization Tool <input type="text" value="1,000"/> \$  <input type="checkbox"/> 12. PV Grand Total plus Start-Up Capital Cost <input type="text" value="6,222"/> \$  <input type="checkbox"/> 13. PV of Future Annual Costs <input type="text" value="0"/> \$  <input type="checkbox"/> 14. Include One Year of Annual Cost <input type="text" value="0"/> \$  <input type="checkbox"/> 15. Additional Year of Treatment Cost <input type="text" value="0.00"/> %  <input type="checkbox"/> 16. Investment Volatility Factor <input type="text" value="7.222"/> \$  <input type="checkbox"/> 17. Grand Total Net Present Cost <input type="text" value="0.020"/> \$ at a 8.74 gpm Typical Flow Rate  <input type="checkbox"/> 18. Average PV Cost Per 1000 Gal of H2O Treated <input type="text" value="0"/> \$                     </div>	<div> <input type="checkbox"/> 19. Inflation Rate <input type="text" value="3.100"/> %  <input type="checkbox"/> 20. Net Rate of Return <input type="text" value="6.000"/> %  <input type="checkbox"/> 21. Term of Analysis <input type="text" value="75.0"/> years  <input type="checkbox"/> 22. Annual Cost <input type="text" value="100"/> \$  <input type="checkbox"/> 23. Start-up Capital Cost <input type="text" value="10,000"/> \$                     </div> <div> <input type="checkbox"/> 24. Obtain Records from Recapitalization Tool for Replacement Costs                     </div> <div> <input type="checkbox"/> 25. Recapitalization Inflation Rate <input type="text" value="3.100"/> %  <input type="checkbox"/> 26. Recapitalization Net Rate of Return <input type="text" value="6.000"/> %  <input type="checkbox"/> 27. Recapitalization Term of Analysis <input type="text" value="75.0"/> years                     </div> <div> <input type="checkbox"/> 28. Total Capital Cost from Recapitalization Tool <input type="text" value="100"/> \$  <input type="checkbox"/> 29. PV Grand Total from Recapitalization Tool <input type="text" value="10,000"/> \$  <input type="checkbox"/> 30. PV Grand Total plus Start-Up Capital Cost <input type="text" value="3,111"/> \$  <input type="checkbox"/> 31. PV of Future Annual Costs <input type="text" value="0"/> \$  <input type="checkbox"/> 32. Include One Year of Annual Cost <input type="text" value="0.00"/> %  <input type="checkbox"/> 33. Additional Year of Treatment Cost <input type="text" value="13.111"/> \$  <input type="checkbox"/> 34. Investment Volatility Factor <input type="text" value="0.038"/> \$ at a 8.74 gpm Typical Flow Rate  <input type="checkbox"/> 35. Grand Total Net Present Cost <input type="text" value="9,000"/> \$  <input type="checkbox"/> 36. Average PV Cost Per 1000 Gal of H2O Treated <input type="text" value="5,888"/> \$  <input type="checkbox"/> 37. Capital Cost Difference <input type="text" value="9,000"/> \$  <input type="checkbox"/> 38. PV Cost Difference <input type="text" value="5,888"/> \$                     </div>



Company Name Junior Coal  
 Project Junior Coal - Little Beaver  
 Site Name LB-75 Treatment System

Life of Trust Fund 75 yrs  
 Inflation Rate 3.10 %  
 Return Rate 8.43 %

## AMD TREAT RECAPITIALIZATION COST

AMD TREAT

Year	Trust Fund Growth Fund Before Payout	Trust Fund Growth Fund After Payout	Payout Schedule	Year	Trust Fund Growth Fund Before Payout	Trust Fund Growth Fund After Payout	Payout Schedule
	1,583	1,583	Initial Fund Amount				
1	1,716	1,716	0	51	13,982	13,982	0
2	1,861	1,861	0	52	15,160	15,160	0
3	2,018	2,018	0	53	16,439	16,439	0
4	2,188	2,188	0	54	17,824	17,824	0
5	2,372	2,372	0	55	19,327	19,327	0
6	2,572	2,572	0	56	20,956	20,956	0
7	2,789	2,789	0	57	22,723	22,723	0
8	3,024	3,024	0	58	24,639	24,639	0
9	3,279	3,279	0	59	26,716	26,716	0
10	3,556	3,556	0	60	28,968	2,521	26,446
11	3,856	3,856	0	61	2,734	2,734	0
12	4,181	4,181	0	62	2,964	2,964	0
13	4,533	4,533	0	63	3,214	3,214	0
14	4,915	4,915	0	64	3,485	3,485	0
15	5,330	5,330	0	65	3,779	3,779	0
16	5,779	5,779	0	66	4,097	4,097	0
17	6,266	6,266	0	67	4,443	4,443	0
18	6,795	6,795	0	68	4,817	4,817	0
19	7,367	7,367	0	69	5,223	5,223	0
20	7,988	7,252	736	70	5,664	5,664	0
21	7,863	7,863	0	71	6,141	6,141	0
22	8,526	8,526	0	72	6,659	6,659	0
23	9,245	9,245	0	73	7,221	7,221	0
24	10,024	10,024	0	74	7,829	7,829	0
25	10,869	9,025	1,844	75	8,489	0	8,489
26	9,785	9,785	0	76	0	0	0
27	10,610	10,610	0	77	0	0	0
28	11,505	11,505	0	78	0	0	0
29	12,475	12,475	0	79	0	0	0
30	13,526	3,943	9,583	80	0	0	0
31	4,275	4,275	0	81	0	0	0
32	4,636	4,636	0	82	0	0	0
33	5,027	5,027	0	83	0	0	0
34	5,450	5,450	0	84	0	0	0
35	5,910	5,910	0	85	0	0	0
36	6,408	6,408	0	86	0	0	0
37	6,948	6,948	0	87	0	0	0
38	7,534	7,534	0	88	0	0	0
39	8,169	8,169	0	89	0	0	0
40	8,858	7,502	1,356	90	0	0	0
41	8,134	8,134	0	91	0	0	0
42	8,820	8,820	0	92	0	0	0
43	9,563	9,563	0	93	0	0	0
44	10,369	10,369	0	94	0	0	0
45	11,244	11,244	0	95	0	0	0
46	12,191	12,191	0	96	0	0	0
47	13,219	13,219	0	97	0	0	0
48	14,334	14,334	0	98	0	0	0
49	15,542	15,542	0	99	0	0	0
50	16,852	12,895	3,957	100	0	0	0



# EXHIBIT I

## Required Trust Amounts by Year

### Junior Coal Contracting / Combined Trust Fund

Calculation date: 2017-04-24

Year	Projected Annual O&M Cost	Primary Basis Valuation	Primary Target Valuation (PTV)	Recap (Before Payout)	Scheduled Capital Payouts	Recap (After Payout)	PTV with recap (before payout)	Insurance Present Value	PTV + Recap and Insurance
2016	\$6,247	\$123,452	\$143,204	\$9,212	\$0	\$9,212	\$152,416	\$3,494	\$155,910
2017	\$12,250	\$242,074	\$280,806	\$9,989	\$0	\$11,572	\$290,795	\$6,666	\$297,461
2018	\$12,629	\$249,579	\$289,511	\$12,547	\$0	\$12,547	\$302,058	\$6,924	\$308,983
2019	\$13,021	\$257,316	\$298,486	\$13,605	\$0	\$13,605	\$312,091	\$7,154	\$319,245
2020	\$13,425	\$265,292	\$307,739	\$14,752	\$0	\$14,752	\$322,491	\$7,393	\$329,883
2021	\$13,841	\$273,516	\$317,279	\$15,995	\$0	\$15,995	\$333,274	\$7,640	\$340,914
2022	\$14,270	\$281,995	\$327,115	\$17,344	\$0	\$17,344	\$344,458	\$7,896	\$352,355
2023	\$14,712	\$290,737	\$337,255	\$18,806	\$0	\$18,806	\$356,061	\$8,162	\$364,223
2024	\$15,168	\$299,750	\$347,710	\$20,391	\$0	\$20,391	\$368,101	\$8,438	\$376,539
2025	\$15,638	\$309,042	\$358,489	\$22,110	\$0	\$22,110	\$380,599	\$8,725	\$389,324
2026	\$16,123	\$318,623	\$369,602	\$23,974	\$0	\$23,974	\$393,576	\$9,022	\$402,598
2027	\$16,623	\$328,500	\$381,060	\$25,995	\$2,163	\$23,832	\$407,055	\$9,331	\$416,386
2028	\$17,138	\$338,684	\$392,873	\$25,841	\$0	\$25,841	\$418,714	\$9,598	\$428,312
2029	\$17,670	\$349,183	\$405,052	\$28,019	\$0	\$28,019	\$433,071	\$9,928	\$442,999
2030	\$18,217	\$360,007	\$417,609	\$30,381	\$0	\$30,381	\$447,990	\$10,270	\$458,259
2031	\$18,782	\$371,168	\$430,554	\$32,942	\$0	\$32,942	\$463,497	\$10,625	\$474,122
2032	\$19,364	\$382,674	\$443,902	\$35,719	\$0	\$35,719	\$479,621	\$10,995	\$490,616
2033	\$19,965	\$394,537	\$457,663	\$38,731	\$0	\$38,731	\$496,393	\$11,379	\$507,772
2034	\$20,584	\$406,767	\$471,850	\$41,996	\$0	\$41,996	\$513,846	\$11,779	\$525,625
2035	\$21,222	\$419,377	\$486,478	\$45,536	\$0	\$45,536	\$532,013	\$12,196	\$544,209
2036	\$21,880	\$432,378	\$501,558	\$49,374	\$0	\$49,374	\$550,933	\$12,629	\$563,562
2037	\$22,558	\$445,782	\$517,107	\$53,537	\$736	\$52,801	\$570,643	\$13,081	\$583,725
2038	\$23,257	\$459,601	\$533,137	\$57,252	\$0	\$57,252	\$590,389	\$13,534	\$603,923
2039	\$23,978	\$473,848	\$549,664	\$62,078	\$3,121	\$58,957	\$611,742	\$14,023	\$625,766
2040	\$24,721	\$488,538	\$566,704	\$63,927	\$10,018	\$53,909	\$630,631	\$14,456	\$645,087
2041	\$25,488	\$503,682	\$584,272	\$58,454	\$0	\$58,454	\$642,725	\$14,734	\$657,459
2042	\$26,278	\$519,297	\$602,384	\$63,381	\$1,844	\$61,537	\$665,765	\$15,262	\$681,027
2043	\$27,093	\$535,395	\$621,058	\$66,725	\$0	\$66,725	\$687,783	\$15,766	\$703,549
2044	\$27,932	\$551,992	\$640,311	\$72,350	\$0	\$72,350	\$712,661	\$16,337	\$728,997
2045	\$28,798	\$569,104	\$660,160	\$78,449	\$52,468	\$25,981	\$738,609	\$16,932	\$755,541
2046	\$29,691	\$586,746	\$680,625	\$28,171	\$0	\$28,171	\$708,797	\$16,248	\$725,045
2047	\$30,611	\$604,935	\$701,725	\$30,546	\$9,583	\$20,963	\$732,271	\$16,786	\$749,057
2048	\$31,560	\$623,688	\$723,478	\$22,730	\$0	\$22,730	\$746,208	\$17,106	\$763,314
2049	\$32,539	\$643,022	\$745,906	\$24,647	\$0	\$24,647	\$770,552	\$17,664	\$788,216
2050	\$33,547	\$662,956	\$769,029	\$26,724	\$0	\$26,724	\$795,753	\$18,242	\$813,995
2051	\$34,587	\$683,508	\$792,869	\$28,977	\$4,501	\$24,476	\$821,846	\$18,840	\$840,686
2052	\$35,660	\$704,696	\$817,448	\$26,539	\$0	\$26,539	\$843,987	\$19,347	\$863,335
2053	\$36,765	\$726,542	\$842,789	\$28,777	\$0	\$28,777	\$871,565	\$19,979	\$891,545
2054	\$37,905	\$749,065	\$868,915	\$31,203	\$0	\$31,203	\$900,118	\$20,634	\$920,752
2055	\$39,080	\$772,286	\$895,852	\$33,833	\$0	\$33,833	\$929,685	\$21,312	\$950,996
2056	\$40,291	\$796,227	\$923,623	\$36,685	\$0	\$36,685	\$960,308	\$22,014	\$982,322

2057	\$41,540	\$820,910	\$952,255	\$39,778	\$1,356	\$38,422	\$992,033	\$22,741	\$1,014,774
2058	\$42,828	\$846,358	\$981,775	\$41,661	\$0	\$41,661	\$1,023,436	\$23,461	\$1,046,897
2059	\$44,156	\$872,595	\$1,012,210	\$45,173	\$0	\$45,173	\$1,057,383	\$24,239	\$1,081,622
2060	\$45,525	\$899,645	\$1,043,589	\$48,981	\$0	\$48,981	\$1,092,569	\$25,046	\$1,117,615
2061	\$46,936	\$927,535	\$1,075,940	\$53,110	\$0	\$53,110	\$1,129,050	\$25,882	\$1,154,932
2062	\$48,391	\$956,288	\$1,109,294	\$57,587	\$0	\$57,587	\$1,166,881	\$26,749	\$1,193,630
2063	\$49,891	\$985,933	\$1,143,682	\$62,441	\$6,493	\$55,948	\$1,206,124	\$27,649	\$1,233,772
2064	\$51,438	\$1,016,497	\$1,179,136	\$60,665	\$0	\$60,665	\$1,239,801	\$28,421	\$1,268,222
2065	\$53,032	\$1,048,008	\$1,215,690	\$65,779	\$21,490	\$44,289	\$1,281,468	\$29,376	\$1,310,844
2066	\$54,676	\$1,080,497	\$1,253,376	\$48,022	\$0	\$48,022	\$1,301,398	\$29,833	\$1,331,231
2067	\$56,371	\$1,113,992	\$1,292,231	\$52,071	\$3,957	\$48,114	\$1,344,301	\$30,816	\$1,375,118
2068	\$58,119	\$1,148,526	\$1,332,290	\$52,170	\$0	\$52,170	\$1,384,459	\$31,737	\$1,416,196
2069	\$59,920	\$1,184,130	\$1,373,591	\$56,567	\$0	\$56,567	\$1,430,158	\$32,784	\$1,462,943
2070	\$61,778	\$1,220,838	\$1,416,172	\$61,336	\$0	\$61,336	\$1,477,508	\$33,870	\$1,511,378
2071	\$63,693	\$1,258,684	\$1,460,073	\$66,507	\$0	\$66,507	\$1,526,580	\$34,995	\$1,561,575
2072	\$65,668	\$1,297,703	\$1,505,336	\$72,113	\$0	\$72,113	\$1,577,449	\$36,161	\$1,613,610
2073	\$67,703	\$1,337,932	\$1,552,001	\$78,192	\$0	\$78,192	\$1,630,194	\$37,370	\$1,667,564
2074	\$69,802	\$1,379,408	\$1,600,113	\$84,784	\$0	\$84,784	\$1,684,897	\$38,624	\$1,723,521
2075	\$71,966	\$1,422,170	\$1,649,717	\$91,931	\$140,483	-\$48,552	\$1,741,648	\$39,925	\$1,781,573
2076	\$74,197	\$1,466,257	\$1,700,858	-\$52,645	\$0	-\$52,645	\$1,648,213	\$37,783	\$1,685,996
2077	\$76,497	\$1,511,711	\$1,753,585	-\$57,082	\$26,446	-\$83,528	\$1,696,502	\$38,890	\$1,735,392
2078	\$78,868	\$1,558,574	\$1,807,946	-\$90,570	\$0	-\$90,570	\$1,717,376	\$39,368	\$1,756,744
2079	\$81,313	\$1,606,890	\$1,863,992	-\$98,205	\$0	-\$98,205	\$1,765,787	\$40,478	\$1,806,265
2080	\$83,834	\$1,656,703	\$1,921,776	-\$106,484	\$0	-\$106,484	\$1,815,292	\$41,613	\$1,856,905
2081	\$86,433	\$1,708,061	\$1,981,351	-\$115,460	\$0	-\$115,460	\$1,865,891	\$42,773	\$1,908,663
2082	\$89,112	\$1,761,011	\$2,042,773	-\$125,194	\$0	-\$125,194	\$1,917,579	\$43,958	\$1,961,537
2083	\$91,875	\$1,815,602	\$2,106,099	-\$135,747	\$0	-\$135,747	\$1,970,351	\$45,168	\$2,015,519
2084	\$94,723	\$1,871,886	\$2,171,388	-\$147,191	\$0	-\$147,191	\$2,024,197	\$46,402	\$2,070,599
2085	\$97,659	\$1,929,914	\$2,238,701	-\$159,599	\$0	-\$159,599	\$2,079,102	\$47,660	\$2,126,762
2086	\$100,687	\$1,989,742	\$2,308,100	-\$173,053	\$0	-\$173,053	\$2,135,047	\$48,943	\$2,183,990
2087	\$103,808	\$2,051,424	\$2,379,652	-\$187,642	\$13,511	-\$201,153	\$2,192,010	\$50,249	\$2,242,259
2088	\$107,026	\$2,115,018	\$2,453,421	-\$218,110	\$0	-\$218,110	\$2,235,311	\$51,241	\$2,286,552
2089	\$110,344	\$2,180,583	\$2,529,477	-\$236,496	\$46,101	-\$282,597	\$2,292,980	\$52,563	\$2,345,544
2090	\$113,764	\$2,248,181	\$2,607,891	-\$306,420	\$0	-\$306,420	\$2,301,470	\$52,758	\$2,354,228

## Required Trust Amounts by Year

### Junior Coal Contracting / Runk Operation Trust Fund

Original calculation: 2/1/2016

Year	Projected Annual O&M Cost	Primary Basis Valuation	Primary Target Valuation (PTV)	Recap (Before Payout)	Scheduled Capital Payouts	Recap (After Payout)	PTV with recap (before payout)	Insurance Present Value	PTV + Recap and Insurance
2016	\$6,247	\$123,452	\$143,204	\$9,212	\$0	\$9,212	\$152,416	\$3,494	\$155,910
2017	\$6,441	\$127,278	\$147,643	\$9,989	\$0	\$9,989	\$157,632	\$3,613	\$161,245
2018	\$6,640	\$131,224	\$152,220	\$10,831	\$0	\$10,831	\$163,051	\$3,738	\$166,788
2019	\$6,846	\$135,292	\$156,939	\$11,744	\$0	\$11,744	\$168,682	\$3,867	\$172,549
2020	\$7,058	\$139,486	\$161,804	\$12,734	\$0	\$12,734	\$174,538	\$4,001	\$178,539
2021	\$7,277	\$143,810	\$166,820	\$13,807	\$0	\$13,807	\$180,627	\$4,141	\$184,768
2022	\$7,503	\$148,268	\$171,991	\$14,971	\$0	\$14,971	\$186,962	\$4,286	\$191,248
2023	\$7,735	\$152,865	\$177,323	\$16,233	\$0	\$16,233	\$193,556	\$4,437	\$197,993
2024	\$7,975	\$157,603	\$182,820	\$17,601	\$0	\$17,601	\$200,421	\$4,594	\$205,016
2025	\$8,222	\$162,489	\$188,487	\$19,085	\$0	\$19,085	\$207,573	\$4,758	\$212,331
2026	\$8,477	\$167,526	\$194,331	\$20,694	\$0	\$20,694	\$215,025	\$4,929	\$219,954
2027	\$8,740	\$172,720	\$200,355	\$22,439	\$2,163	\$20,276	\$222,793	\$5,107	\$227,901
2028	\$9,011	\$178,074	\$206,566	\$21,985	\$0	\$21,985	\$228,551	\$5,239	\$233,790
2029	\$9,290	\$183,594	\$212,969	\$23,838	\$0	\$23,838	\$236,808	\$5,428	\$242,236
2030	\$9,578	\$189,286	\$219,571	\$25,848	\$0	\$25,848	\$245,419	\$5,626	\$251,045
2031	\$9,875	\$195,154	\$226,378	\$28,027	\$0	\$28,027	\$254,405	\$5,832	\$260,237
2032	\$10,181	\$201,203	\$233,396	\$30,389	\$0	\$30,389	\$263,785	\$6,047	\$269,832
2033	\$10,497	\$207,441	\$240,631	\$32,951	\$0	\$32,951	\$273,582	\$6,271	\$279,854
2034	\$10,822	\$213,871	\$248,091	\$35,729	\$0	\$35,729	\$283,820	\$6,506	\$290,326
2035	\$11,158	\$220,501	\$255,781	\$38,741	\$0	\$38,741	\$294,523	\$6,752	\$301,274
2036	\$11,504	\$227,337	\$263,711	\$42,007	\$0	\$42,007	\$305,718	\$7,008	\$312,726
2037	\$11,861	\$234,384	\$271,886	\$45,548	\$0	\$45,548	\$317,434	\$7,277	\$324,711
2038	\$12,228	\$241,650	\$280,314	\$49,388	\$0	\$49,388	\$329,702	\$7,558	\$337,260
2039	\$12,607	\$249,141	\$289,004	\$53,551	\$3,121	\$50,430	\$342,555	\$7,853	\$350,408
2040	\$12,998	\$256,865	\$297,963	\$54,682	\$10,018	\$44,664	\$352,645	\$8,084	\$360,728
2041	\$13,401	\$264,827	\$307,200	\$48,429	\$0	\$48,429	\$355,629	\$8,152	\$363,781
2042	\$13,816	\$273,037	\$316,723	\$52,511	\$0	\$52,511	\$369,234	\$8,464	\$377,698
2043	\$14,245	\$281,501	\$326,541	\$56,938	\$0	\$56,938	\$383,479	\$8,791	\$392,270
2044	\$14,686	\$290,228	\$336,664	\$61,738	\$0	\$61,738	\$398,402	\$9,133	\$407,535
2045	\$15,142	\$299,225	\$347,101	\$66,942	\$52,468	\$14,474	\$414,043	\$9,491	\$423,534
2046	\$15,611	\$308,501	\$357,861	\$15,694	\$0	\$15,694	\$373,555	\$8,563	\$382,119
2047	\$16,095	\$318,064	\$368,955	\$17,017	\$0	\$17,017	\$385,972	\$8,848	\$394,820
2048	\$16,594	\$327,924	\$380,392	\$18,452	\$0	\$18,452	\$398,844	\$9,143	\$407,987
2049	\$17,108	\$338,090	\$392,184	\$20,008	\$0	\$20,008	\$412,192	\$9,449	\$421,641
2050	\$17,639	\$348,571	\$404,342	\$21,694	\$0	\$21,694	\$426,036	\$9,766	\$435,803
2051	\$18,185	\$359,376	\$416,877	\$23,523	\$4,501	\$19,022	\$440,400	\$10,096	\$450,495
2052	\$18,749	\$370,517	\$429,800	\$20,626	\$0	\$20,626	\$450,425	\$10,325	\$460,751
2053	\$19,330	\$382,003	\$443,124	\$22,364	\$0	\$22,364	\$465,488	\$10,671	\$476,159
2054	\$19,930	\$393,845	\$456,861	\$24,250	\$0	\$24,250	\$481,110	\$11,029	\$492,139
2055	\$20,548	\$406,054	\$471,023	\$26,294	\$0	\$26,294	\$497,317	\$11,400	\$508,717
2056	\$21,184	\$418,642	\$485,625	\$28,510	\$0	\$28,510	\$514,135	\$11,786	\$525,921
2057	\$21,841	\$431,620	\$500,679	\$30,914	\$0	\$30,914	\$531,593	\$12,186	\$543,779

## Junior Coal Contracting / Runk Operation Trust Fund

Original calculation: 2/1/2016

Year	Projected Annual O&M Cost	Primary Basis Valuation	Primary Target Valuation (PTV)	Recap (Before Payout)	Scheduled Capital Payouts	Recap (After Payout)	PTV with recap (before payout)	Insurance Present Value	PTV + Recap and Insurance
2058	\$22,518	\$445,000	\$516,200	\$33,520	\$0	\$33,520	\$549,720	\$12,602	\$562,322
2059	\$23,216	\$458,795	\$532,203	\$36,346	\$0	\$36,346	\$568,548	\$13,033	\$581,581
2060	\$23,936	\$473,018	\$548,701	\$39,410	\$0	\$39,410	\$588,110	\$13,482	\$601,592
2061	\$24,678	\$487,682	\$565,711	\$42,732	\$0	\$42,732	\$608,442	\$13,948	\$622,390
2062	\$25,443	\$502,800	\$583,248	\$46,334	\$0	\$46,334	\$629,582	\$14,432	\$644,014
2063	\$26,232	\$518,386	\$601,328	\$50,240	\$6,493	\$43,747	\$651,568	\$14,936	\$666,505
2064	\$27,045	\$534,456	\$619,969	\$47,435	\$0	\$47,435	\$667,404	\$15,299	\$682,704
2065	\$27,883	\$551,025	\$639,189	\$51,434	\$21,490	\$29,944	\$690,622	\$15,832	\$706,454
2066	\$28,748	\$568,106	\$659,003	\$32,468	\$0	\$32,468	\$691,471	\$15,851	\$707,322
2067	\$29,639	\$585,718	\$679,432	\$35,205	\$0	\$35,205	\$714,637	\$16,382	\$731,019
2068	\$30,558	\$603,875	\$700,495	\$38,173	\$0	\$38,173	\$738,668	\$16,933	\$755,601
2069	\$31,505	\$622,595	\$722,210	\$41,391	\$0	\$41,391	\$763,601	\$17,504	\$781,105
2070	\$32,482	\$641,895	\$744,599	\$44,880	\$0	\$44,880	\$789,479	\$18,098	\$807,576
2071	\$33,489	\$661,794	\$767,681	\$48,663	\$0	\$48,663	\$816,345	\$18,714	\$835,058
2072	\$34,527	\$682,310	\$791,479	\$52,766	\$0	\$52,766	\$844,245	\$19,353	\$863,598
2073	\$35,597	\$703,461	\$816,015	\$57,214	\$0	\$57,214	\$873,229	\$20,018	\$893,247
2074	\$36,701	\$725,269	\$841,312	\$62,037	\$0	\$62,037	\$903,349	\$20,708	\$924,057
2075	\$37,838	\$747,752	\$867,392	\$67,267	\$140,483	-\$73,216	\$934,659	\$21,426	\$956,085
2076	\$39,011	\$770,932	\$894,282	-\$79,389	\$0	-\$79,389	\$814,893	\$18,680	\$833,573
2077	\$40,221	\$794,831	\$922,004	-\$86,081	\$0	-\$86,081	\$835,923	\$19,162	\$855,086
2078	\$41,468	\$819,471	\$950,586	-\$93,338	\$0	-\$93,338	\$857,249	\$19,651	\$876,900
2079	\$42,753	\$844,875	\$980,055	-\$101,206	\$0	-\$101,206	\$878,849	\$20,146	\$898,995
2080	\$44,078	\$871,066	\$1,010,436	-\$109,738	\$0	-\$109,738	\$900,699	\$20,647	\$921,346
2081	\$45,445	\$898,069	\$1,041,760	-\$118,989	\$0	-\$118,989	\$922,771	\$21,153	\$943,924
2082	\$46,854	\$925,909	\$1,074,054	-\$129,019	\$0	-\$129,019	\$945,035	\$21,664	\$966,699
2083	\$48,306	\$954,612	\$1,107,350	-\$139,896	\$0	-\$139,896	\$967,454	\$22,178	\$989,632
2084	\$49,804	\$984,205	\$1,141,678	-\$151,689	\$0	-\$151,689	\$989,989	\$22,694	\$1,012,683
2085	\$51,348	\$1,014,715	\$1,177,070	-\$164,476	\$0	-\$164,476	\$1,012,594	\$23,212	\$1,035,806
2086	\$52,939	\$1,046,172	\$1,213,559	-\$178,342	\$0	-\$178,342	\$1,035,218	\$23,731	\$1,058,948
2087	\$54,580	\$1,078,603	\$1,251,179	-\$193,376	\$13,511	-\$206,887	\$1,057,804	\$24,249	\$1,082,052
2088	\$56,272	\$1,112,040	\$1,289,966	-\$224,327	\$0	-\$224,327	\$1,065,639	\$24,428	\$1,090,067
2089	\$58,017	\$1,146,513	\$1,329,955	-\$243,238	\$46,101	-\$289,339	\$1,086,717	\$24,911	\$1,111,628



## Required Trust Amounts by Year

### Junior Coal Contracting /Little Beaver Operation Trust Fund

Original calculation: 4/24/2017

Year	Projected Annual O&M Cost	Primary Basis Valuation	Primary Target Valuation (PTV)	Recap (Before Payout)	Scheduled Capital Payouts	Recap (After Payout)	PTV with recap (before payout)	Insurance Present Value	PTV + Recap and Insurance
2016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2017	\$5,809	\$114,796	\$133,163	\$1,583	\$0	\$1,583	\$134,746	\$3,089	\$137,835
2018	\$5,989	\$118,355	\$137,291	\$1,716	\$0	\$1,716	\$139,008	\$3,187	\$142,194
2019	\$6,175	\$122,024	\$141,547	\$1,861	\$0	\$1,861	\$143,408	\$3,287	\$146,696
2020	\$6,366	\$125,806	\$145,935	\$2,018	\$0	\$2,018	\$147,953	\$3,392	\$151,345
2021	\$6,564	\$129,706	\$150,459	\$2,188	\$0	\$2,188	\$152,647	\$3,499	\$156,147
2022	\$6,767	\$133,727	\$155,123	\$2,373	\$0	\$2,373	\$157,496	\$3,610	\$161,106
2023	\$6,977	\$137,873	\$159,932	\$2,573	\$0	\$2,573	\$162,505	\$3,725	\$166,230
2024	\$7,193	\$142,147	\$164,890	\$2,790	\$0	\$2,790	\$167,680	\$3,844	\$171,524
2025	\$7,416	\$146,553	\$170,002	\$3,025	\$0	\$3,025	\$173,026	\$3,966	\$176,993
2026	\$7,646	\$151,096	\$175,272	\$3,280	\$0	\$3,280	\$178,552	\$4,093	\$182,645
2027	\$7,883	\$155,780	\$180,705	\$3,556	\$0	\$3,556	\$184,261	\$4,224	\$188,485
2028	\$8,127	\$160,610	\$186,307	\$3,856	\$0	\$3,856	\$190,163	\$4,359	\$194,522
2029	\$8,379	\$165,589	\$192,083	\$4,181	\$0	\$4,181	\$196,264	\$4,499	\$200,763
2030	\$8,639	\$170,722	\$198,037	\$4,533	\$0	\$4,533	\$202,571	\$4,644	\$207,214
2031	\$8,907	\$176,014	\$204,176	\$4,916	\$0	\$4,916	\$209,092	\$4,793	\$213,885
2032	\$9,183	\$181,471	\$210,506	\$5,330	\$0	\$5,330	\$215,836	\$4,948	\$220,784
2033	\$9,468	\$187,096	\$217,032	\$5,779	\$0	\$5,779	\$222,811	\$5,108	\$227,918
2034	\$9,761	\$192,896	\$223,760	\$6,266	\$0	\$6,266	\$230,026	\$5,273	\$235,299
2035	\$10,064	\$198,876	\$230,696	\$6,795	\$0	\$6,795	\$237,491	\$5,444	\$242,935
2036	\$10,376	\$205,041	\$237,848	\$7,368	\$0	\$7,368	\$245,215	\$5,621	\$250,836
2037	\$10,697	\$211,397	\$245,221	\$7,989	\$736	\$7,253	\$253,210	\$5,804	\$259,014
2038	\$11,029	\$217,951	\$252,823	\$7,864	\$0	\$7,864	\$260,687	\$5,976	\$266,663
2039	\$11,371	\$224,707	\$260,660	\$8,527	\$0	\$8,527	\$269,187	\$6,171	\$275,358
2040	\$11,723	\$231,673	\$268,741	\$9,246	\$0	\$9,246	\$277,986	\$6,372	\$284,359
2041	\$12,087	\$238,855	\$277,072	\$10,025	\$0	\$10,025	\$287,097	\$6,581	\$293,678
2042	\$12,461	\$246,259	\$285,661	\$10,870	\$1,844	\$9,026	\$296,531	\$6,798	\$303,329
2043	\$12,848	\$253,893	\$294,516	\$9,787	\$0	\$9,787	\$304,304	\$6,976	\$311,279
2044	\$13,246	\$261,764	\$303,646	\$10,612	\$0	\$10,612	\$314,259	\$7,204	\$321,463
2045	\$13,657	\$269,879	\$313,059	\$11,507	\$0	\$11,507	\$324,566	\$7,440	\$332,007
2046	\$14,080	\$278,245	\$322,764	\$12,477	\$0	\$12,477	\$335,241	\$7,685	\$342,926
2047	\$14,516	\$286,871	\$332,770	\$13,529	\$9,583	\$3,946	\$346,299	\$7,938	\$354,237
2048	\$14,966	\$295,764	\$343,086	\$4,278	\$0	\$4,278	\$347,364	\$7,963	\$355,327
2049	\$15,430	\$304,932	\$353,722	\$4,639	\$0	\$4,639	\$358,361	\$8,215	\$366,575
2050	\$15,909	\$314,385	\$364,687	\$5,030	\$0	\$5,030	\$369,717	\$8,475	\$378,192
2051	\$16,402	\$324,131	\$375,992	\$5,454	\$0	\$5,454	\$381,446	\$8,744	\$390,190
2052	\$16,910	\$334,179	\$387,648	\$5,914	\$0	\$5,914	\$393,562	\$9,022	\$402,584
2053	\$17,435	\$344,539	\$399,665	\$6,412	\$0	\$6,412	\$406,077	\$9,309	\$415,386
2054	\$17,975	\$355,220	\$412,055	\$6,953	\$0	\$6,953	\$419,008	\$9,605	\$428,613
2055	\$18,532	\$366,231	\$424,828	\$7,539	\$0	\$7,539	\$432,367	\$9,911	\$442,279
2056	\$19,107	\$377,585	\$437,998	\$8,175	\$0	\$8,175	\$446,173	\$10,228	\$456,401
2057	\$19,699	\$389,290	\$451,576	\$8,864	\$1,356	\$7,508	\$460,440	\$10,555	\$470,995

2058	\$20,310	\$401,358	\$465,575	\$8,141	\$0	\$8,141	\$473,716	\$10,859	\$484,575
2059	\$20,939	\$413,800	\$480,008	\$8,827	\$0	\$8,827	\$488,835	\$11,206	\$500,040
2060	\$21,589	\$426,628	\$494,888	\$9,571	\$0	\$9,571	\$494,888	\$11,345	\$506,233
2061	\$22,258	\$439,853	\$510,229	\$10,378	\$0	\$10,378	\$510,229	\$11,696	\$521,926
2062	\$22,948	\$453,488	\$526,047	\$11,253	\$0	\$11,253	\$526,047	\$12,059	\$538,105
2063	\$23,659	\$467,547	\$542,354	\$12,201	\$0	\$12,201	\$555,263	\$12,729	\$567,991
2064	\$24,393	\$482,040	\$559,167	\$13,230	\$0	\$13,230	\$573,164	\$13,139	\$586,303
2065	\$25,149	\$496,984	\$576,501	\$14,345	\$0	\$14,345	\$591,678	\$13,563	\$605,241
2066	\$25,928	\$512,390	\$594,373	\$15,554	\$0	\$15,554	\$610,829	\$14,002	\$624,831
2067	\$26,732	\$528,274	\$612,798	\$16,866	\$3,957	\$12,909	\$630,642	\$14,457	\$645,098
2068	\$27,561	\$544,651	\$631,795	\$13,997	\$0	\$13,997	\$651,143	\$14,927	\$666,069
2069	\$28,415	\$561,535	\$651,381	\$15,177	\$0	\$15,177	\$672,359	\$15,413	\$687,772
2070	\$29,296	\$578,943	\$671,573	\$16,456	\$0	\$16,456	\$694,321	\$15,916	\$710,237
2071	\$30,204	\$596,890	\$692,392	\$17,843	\$0	\$17,843	\$717,057	\$16,438	\$733,495
2072	\$31,141	\$615,393	\$713,856	\$19,348	\$0	\$19,348	\$740,600	\$16,977	\$757,578
2073	\$32,106	\$634,471	\$735,986	\$20,979	\$0	\$20,979	\$738,538	\$16,930	\$755,468
2074	\$33,101	\$654,139	\$758,801	\$22,747	\$0	\$22,747	\$761,569	\$17,458	\$779,027
2075	\$34,127	\$674,418	\$782,324	\$24,665	\$0	\$24,665	\$785,325	\$18,002	\$803,328
2076	\$35,185	\$695,324	\$806,576	\$26,744	\$0	\$26,744	\$809,830	\$18,564	\$828,395
2077	\$36,276	\$716,880	\$831,580	\$28,999	\$26,446	\$2,553	\$835,109	\$19,144	\$854,252
2078	\$37,401	\$739,103	\$857,359	\$2,768	\$0	\$2,768	\$861,185	\$19,741	\$880,927
2079	\$38,560	\$762,015	\$883,937	\$3,001	\$0	\$3,001	\$888,086	\$20,358	\$908,444
2080	\$39,756	\$785,637	\$911,339	\$3,254	\$0	\$3,254	\$915,837	\$20,994	\$936,832
2081	\$40,988	\$809,992	\$939,591	\$3,528	\$0	\$3,528	\$944,468	\$21,651	\$966,119
2082	\$42,259	\$835,102	\$968,718	\$3,826	\$0	\$3,826	\$974,007	\$22,328	\$996,334
2083	\$43,569	\$860,990	\$998,749	\$4,148	\$0	\$4,148	\$1,004,483	\$23,026	\$1,027,509
2084	\$44,919	\$887,681	\$1,029,710	\$4,498	\$0	\$4,498	\$1,035,927	\$23,747	\$1,059,674
2085	\$46,312	\$915,199	\$1,061,631	\$4,877	\$0	\$4,877	\$1,068,372	\$24,491	\$1,092,863
2086	\$47,747	\$943,570	\$1,094,541	\$5,288	\$0	\$5,288	\$1,101,851	\$25,258	\$1,127,110
2087	\$49,228	\$972,821	\$1,128,472	\$5,734	\$0	\$5,734	\$1,136,398	\$26,050	\$1,162,449
2088	\$50,754	\$1,002,978	\$1,163,455	\$6,218	\$0	\$6,218	\$1,163,560	\$26,673	\$1,190,233
2089	\$52,327	\$1,034,071	\$1,199,522	\$6,742	\$0	\$6,742	\$1,199,522	\$27,497	\$1,227,019
2090	\$53,949	\$1,066,127	\$1,236,707	\$7,310	\$0	\$7,310	\$1,236,707	\$28,350	\$1,265,057
2091	\$55,621	\$1,099,177	\$1,275,045	\$7,926	\$0	\$7,926	\$1,275,045	\$29,229	\$1,304,274
2092	\$57,346	\$1,133,251	\$1,314,571	\$8,594	\$8,489	\$105	\$1,314,571	\$30,135	\$1,344,706

## **Exhibit J**

Little Beaver Operation Personal Property

250 Gallon Caustic Soda tank

**EXHIBIT K**

**BILL OF SALE AND LICENSE AGREEMENT**

This Bill of Sale and License Agreement is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2017, between **Junior Coal Contracting, Inc.** with a place of business at 2330 Sixmile Road, Phillipsburg, Pennsylvania, 16866 ("Transferor") and **Clearfield Bank and Trust Company**, with a business address of 11 North Second Street, Clearfield, PA 16830 as Trustee of the Junior Coal Contracting Post-Mining Discharge Treatment Trust (hereinafter the "Junior Coal Trust") ("Trustee").

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**Whereas**, Junior Coal has entered into a First Amendment to Postmining Treatment Trust Consent Order and Agreement Number 164001 ("First Amended COA") dated \_\_\_\_\_, 2017 with the Pennsylvania Department of Environmental Protection (the "Department");

**Whereas**, Junior Coal has entered into a First Amendment to Post-Mining Discharge Treatment Trust Agreement dated \_\_\_\_\_, 2017 with Clearfield Bank and Trust Company which established the Junior Coal Trust; and

**Whereas**, the Department requires Transferor to continue to treat the post-mining discharges covered by the First Amended COA, but also to immediately transfer the water treatment equipment and facilities to the Trustee to facilitate continued treatment of water and protection of the environment in the event Junior Coal or its successors should cease treating the post-mining discharges.

**KNOW ALL MEN BY THESE PRESENTS** that Transferor in consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, does hereby bargain, sell, transfer and convey to Clearfield Bank and Trust Company, as Trustee of the Junior Coal Trust, all of its right, title and interest to the equipment, facilities, and other personal property (the "Personal Property") comprising the Little Beaver Operation Treatment Facilities, including, but not limited to, the equipment and other property described on Exhibit 1, attached hereto and made a part hereof, such transfer to be effective as of the date hereof (the "Effective Date").

Transferor represents and warrants that the Personal Property is transferred to Trustee hereby free and clear of all liens and encumbrances.

**PROVIDED, HOWEVER**, that Junior Coal and its successors shall have a license to use, operate, maintain, construct or reconstruct the Personal Property to treat the post-mining discharges so long as Junior Coal, or its successor, is conducting the necessary water treatment operations. Pursuant to the exercise of the rights granted under this License, Junior Coal shall at its sole cost and expense be responsible for maintaining and replacing/upgrading, as appropriate, the Personal Property.

Parts, additional equipment, replacements, and upgrades to the Personal Property and the treatment facilities and systems shall be done with the express written consent of the Trustee and



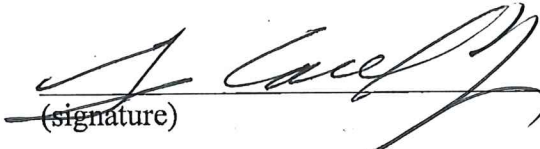
**EXHIBIT K**

the Department. As a condition of the License hereby granted, Junior Coal agrees that all such parts, additional equipment, replacements, and upgrades shall immediately and automatically become the property of the Clearfield Bank and Trust Company as Trustee of the Junior Coal Trust. As long as this license is in effect and not terminated or revoked, Junior Coal, or its successor, shall bear all risk of loss of the Personal Property.

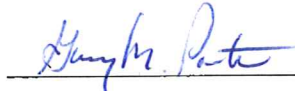
This Bill of Sale and License shall be governed by and construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania, without regard to the conflict of laws provisions thereof.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands effective the day and year first above written.

**TRANSFEROR:**  
JUNIOR COAL CONTRACTING, INC.

  
(signature)

Witness:

  
\_\_\_\_\_

By: George Cowfer, Jr.

Its: President

**TRUSTEE:**  
CLEARFIELD BANK AND TRUST COMPANY

\_\_\_\_\_  
(signature)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_

Its: \_\_\_\_\_

**EXHIBIT K**

**EXHIBIT 1**

Transferred Personal Property

250 Gallon Caustic Soda Tank

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