

Company Name H & D Coal Company

Project 61820102 S110-S10A

Site Name Merola



**AMD TREAT**

**Costs**

**AMD TREAT MAIN COST FORM**

**AMD TREAT**

<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
<b>Passive Subtotal:</b>			<b>\$0</b>
<u>Active Treatment</u>			
Caustic Soda	1	0	\$2,387
Hydrated Lime			\$0
Pebble Quick Lime			\$0
Ammonia			\$0
Oxidants			\$0
Soda Ash			\$0
<b>Active Subtotal:</b>			<b>\$0</b>
<u>Ancillary Cost</u>			
Ponds	2	0	\$10,000
Roads	1	0	\$40,372
Land Access			\$0
Ditching			\$0
Engineering Cost	1	0	\$10,552
<b>Ancillary Subtotal:</b>			<b>\$60,924</b>
<b>Other Cost (Capital Cost)</b>			<b>\$0</b>
<b>Total Capital Cost:</b>			<b>\$63,311</b>
<u>Annual Costs</u>			
Sampling	1	0	\$1,298
Labor	1	0	\$16,380
Maintenance	1	0	\$1,847
Pumping			\$0
Chemical Cost	1	0	\$15,115
Oxidant Chem Cost			\$0
Sludge Removal	1	0	\$2,009
<b>Other Cost (Annual Cost)</b>			<b>\$0</b>
<b>Land Access (Annual Cost)</b>			<b>\$0</b>
<b>Total Annual Cost:</b>			<b>\$36,649</b>
<b>Other Cost</b>			

**Water Quality**

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

pH  su

Ferric Iron  mg/L

Ferrous Iron  mg/L

Sulfate  mg/L

Filtered Fe  mg/L

Filtered Al  mg/L

Filtered Mn  mg/L

Specific Conductivity  uS/cm

Total Dissolved Solids  mg/L

Dissolved Oxygen  mg/L

Typical Acid Loading  tons/yr

**Total Annual Cost: per  
1000 Gal of H2O Treated \$1.482**

Company Name H & D Coal Company

Project 61820102 S110-S10A

Site Name Merola

COMMENTS:

Company Name H & D Coal Company

Project 61820102 S110-S10A

Site Name Merola



## AMD TREAT CAUSTIC SODA

**AMDTREAT**

**Opening Screen  
Water Parameters**

Caustic Soda Name

**Influent Water  
Parameters  
that Affect  
Caustic Soda**

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

1. Gallons of Caustic per Year  gal/yr

2. Gallons of Caustic per Month  gal/mo

3. Gallons of Caustic per Day  gal/day

4. Titration?

5. Caustic Titration Volume  gal caustic/gal water treated

6. Purity of Caustic Solution  purity of 20% caustic solution

7. Mixing Efficiency of Caustic Solution  %

8. Tank Cost  \$

9. Tank Volume  gal

10. Delivery Frequency  times/yr

11. Valve Unit Cost  \$

12. Number of Valves  nbr

13. Feeder Line Length  ft

14. Feeder Line Unit Cost  \$/ft

15. Installation of System Unit Cost  \$/hr

16. Installation Hours  hours

17. Automatic System?

18. PID pH Proportional Control  \$

19. pH Probe  \$

20. Chemical Metering Pump  \$

21. Water Wheel Dispenser

22. Dispenser Cost  \$

**Caustic Sub-Totals**

23. Number of Tanks Required  nbr

24. Tank Cost  \$

25. Automatic System or Wheel Dispenser Cost  \$

26. Cost of Valves  \$

27. Feeder Line Cost  \$

28. Labor Cost  \$

29. Total Capital Cost  \$

**Record Number 1 of 1**

Company Name H & D Coal Company  
 Project 61820102 S110-S10A  
 Site Name Merola

Printed on 03/31/2008



## AMD TREAT PONDS

**AMDTREAT**

Pond Name

**Pond Design Based On:**

Retention Time

1. Desired Retention Time  hours

2. Include Sludge Removal?

3. Sludge Removal Frequency  times/year

4. Titration?

5. Sludge Rate  gal sludge/  
gal H2O

6. Percent Solids  %

7. Sludge Density  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	<input type="text" value="2.0"/> :	<input type="text" value="1"/>
11. Freeboard Depth	<input type="text" value="2.0"/> ft	
12. Water Depth	<input type="text" value="4.0"/> ft	
13. Excavation Unit Cost	<input type="text" value="5.50"/> \$/yd3	
14. Total Length of Effluent / Inlet Pipe	<input type="text" value="0.00"/> ft	
15. Unit Cost of Pipe	<input type="text" value="0.00"/> \$/ft	

Liner Cost

No Liner

Clay Liner

16. Clay Liner Unit Cost  \$/yd3

17. Thickness of Clay Liner  ft

Synthetic Liner

18. Synthetic Liner Unit Cost  \$/yd2

19. Clearing and Grubbing?

20. Land Multiplier  ratio

21. Clear/Grub Acres  acres

22. Clear and Grub Unit Cost  \$/acre

23. Revegetation Cost  \$/acre

24. Cost of Baffles  \$

**Calculated Pond Dimensions per Pond**

25. Length at Top of Freeboard  ft

26. Width at Top of Freeboard  ft

27. Freeboard Volume  yd3

28. Water Volume  yd3

29. Estimated Annual Sludge  yd3/yr

30. Volume of Sludge per Removal  yd3/removal

31. Excavation Volume  acre ft

32. Excavation Volume  yd3

33. Clear and Grub Area  acres

34. Liner Area  yd2

35. Calculated Retention Time  hours

**Ponds Sub-Totals per Pond**

36. Excavation Cost  \$

37. Pipe Cost  \$

38. Liner Cost  \$

39. Clearing and Grubbing Cost  \$

40. Revegetation Cost  \$

41. Baffle Cost  \$

42. Estimated Cost  \$

43. Accept Minimum Pond Cost?

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

44. Recommended Minimum Cost  \$

45. Total Cost  \$

Opening Screen Water Parameters

**Influent Water Parameters that Affect Ponds**

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 2

Company Name H & D Coal Company  
 Project 61820102 S110-S10A  
 Site Name Merola

Printed on 03/31/2008



# AMD TREAT PONDS

AMDTREAT

Pond Name

**Pond Design Based On:**

Retention Time

1. Desired Retention Time  hours

2. Include Sludge Removal?

3. Sludge Removal Frequency  times/year

4. Titration?

5. Sludge Rate  gal sludge/  
gal H2O

6. Percent Solids  %

7. Sludge Density  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  :

11. Freeboard Depth  ft

12. Water Depth  ft

13. Excavation Unit Cost  \$/yd3

14. Total Length of Effluent / Inlet Pipe  ft

15. Unit Cost of Pipe  \$/ft

Liner Cost

No Liner

Clay Liner

16. Clay Liner Unit Cost  \$/yd3

17. Thickness of Clay Liner  ft

Synthetic Liner

18. Synthetic Liner Unit Cost  \$/yd2

19. Clearing and Grubbing?

20. Land Multiplier  ratio

21. Clear/Grub Acres  acres

22. Clear and Grub Unit Cost  \$/acre

23. Revegetation Cost  \$/acre

24. Cost of Baffles  \$

**Calculated Pond Dimensions per Pond**

25. Length at Top of Freeboard  ft

26. Width at Top of Freeboard  ft

27. Freeboard Volume  yd3

28. Water Volume  yd3

29. Estimated Annual Sludge  yd3/yr

30. Volume of Sludge per Removal  yd3/removal

31. Excavation Volume  acre ft

32. Excavation Volume  yd3

33. Clear and Grub Area  acres

34. Liner Area  yd2

35. Calculated Retention Time  hours

**Ponds Sub-Totals per Pond**

36. Excavation Cost  \$

37. Pipe Cost  \$

38. Liner Cost  \$

39. Clearing and Grubbing Cost  \$

40. Revegetation Cost  \$

41. Baffle Cost  \$

42. Estimated Cost  \$

43. Accept Minimum Pond Cost?

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

44. Recommended Minimum Cost  \$

45. Total Cost  \$

Opening Screen Water Parameters

**Influent Water Parameters that Affect Ponds**

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  
2 of 2**

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102 S!10-S10A

Site Name Merola

## AMD TREAT ROADS



AMDTREAT

Road Name

1. Road Length  ft
2. Road Width  ft
3. Road Depth  ft
4. Aggregate Unit Cost  \$/yd3
5. GeoTextile Length  ft
6. GeoTextile Unit Cost  \$/yd2
7. Length of Silt Fence  ft
8. Unit Cost of Silt Fence  \$/ft
9. Surveying?
10. Survey Rate  acres/day
11. Survey Unit Cost  \$/day
12. Clearing and Grubbing?
13. Clear and Grub Cost  \$/acre

14. Reveg Unit Cost  \$/acre
15. Culvert Unit Cost  \$/ft
16. Culvert Length  ft

### Roads Sub-Totals

17. Road Surface Cost  \$
18. GeoTextile Cost  \$
19. Silt Fence Cost  \$
20. Culvert Cost  \$
21. Revegetation Cost  \$
22. Survey Cost  \$
23. Clear and Grub Cost  \$

24. Total Cost  \$

Record Number 1 of 1

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102 S110-S10A

Site Name Merola



**AMDTREAT**

**AMD TREAT  
ENGINEERING COST**

1. Capital Cost *	52,759	\$
2. Per Cent of Capital Cost	20.00	%
3. Actual Engineering Cost		\$

4. Total Engineering Cost 10,552 \$

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

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102 S110-S10A

Site Name Merola



**AMDTREAT**

## AMD TREAT SAMPLING

Sampling Name

### Estimate Sampling Cost

1. Unit Labor Cost  \$/hr

2. Collection Time per Sample  hours/sample

3. Travel Time  hr

4. Sample Frequency  samples/mo

5. Lab Cost Per Sample  \$/sample

6. Number of Sample Points  points

### Enter Established Annual Sampling Cost

7. Actual Annual Sampling Cost  \$

### Sampling Sub-Totals

8. Yearly Sample Analysis Cost  \$

9. Yearly Travel Cost  \$

10. Yearly Collection Cost  \$

11. Sampling Cost  \$

Record Number 1 of 1



Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102 S110-S10A

Site Name Merola



AMD TREAT

## AMD TREAT

### LABOR

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 H & D Coal Company

Project 61820102 S110-S10A

Site Name Merola



AMDTREAT

## AMD TREAT

### MAINTANENCE

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  \$

\$

\* Ancillary Cost does int include Cost for  
Land Access and Engineering Cost

Company Name H & D Coal Company

Project 61820102 S!10-S10A

Site Name Merola



## 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 H2O
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 H2O
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 H2O
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 H2O
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 H2O
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	Annual Amount of Chemicals Consumed
33. Total Hydrated Lime Cost <input type="text" value="2,643"/> \$	<input type="text" value="52,865"/> lbs
34. Total Pebble Lime Cost <input type="text" value="3,677"/> \$	<input type="text" value="73,543"/> lbs
35. Total Caustic Soda Cost <input type="text" value="15,115"/> \$	<input type="text" value="25,191"/> gals
36. Total Anhydrous Ammonia Cost <input type="text" value="0"/> \$	<input type="text" value="0"/> lbs
37. Total Soda Ash Cost <input type="text" value="0"/> \$	<input type="text" value="0"/> lbs
38. Total Known Chemical Cost <input type="text" value="0"/> \$	
39. Total Flocculent Cost <input type="text" value="0"/> \$	<input type="text" value="0"/> gals

40. Selected Chemical: **CAUSTIC SODA**  
 Annual Chemical Cost  \$

Company Name H & D Coal Company

Project 61820102 S110-S10A

Site Name Merola



**AMDTREAT**

**AMD TREAT  
SLUDGE REMOVAL**

Opening Screen Water Parameters

Sludge Removal Name

**Influent Water Parameters that Affect Sludge Removal**

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

**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  \$

**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  yd3/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  \$

Record Number 1 of 1

Company Name H & D Coal Company

Project 61820102 S!10-S10A

Site Name Merola



### AMD TREAT RECAPITIALIZATION COST

**AMDTREAT**

Calculation Period  yrs    Inflation Rate  %    Net Return Rate  %

Recapitalization Name

A. Description of Item	B. Unit Cost Per Item	C. Quantity	D. Total Item Cost	E. Life Cycle	F. Number of Periods	G. Total PV
1. Caustic System	2,387	1	2,387	20	3	2,609
2. Ponds	10,000	1	10,000	20	3	10,932
3. Road	40,372	1	40,372	20	3	44,134
4.	0	0	0	0	0	0
5.	0	0	0	0	0	0
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  \$    PV Grand Total  \$

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102-4

Site Name Merola



**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:			<b>\$0</b>
<b>Active Treatment</b>			
Caustic Soda			\$0
Hydrated Lime			\$0
Pebble Quick Lime			\$0
Ammonia			\$0
Oxidants			\$0
Soda Ash			\$0
Active Subtotal:			<b>\$0</b>
<b>Ancillary Cost</b>			
Ponds	1	0	\$17,735
Roads			\$0
Land Access			\$0
Ditching			\$0
Engineering Cost			\$0
Ancillary Subtotal:			<b>\$17,735</b>
Other Cost (Capital Cost)			\$56,922
Total Capital Cost:			<b>\$74,657</b>
<b>Annual Costs</b>			
Sampling	1	0	\$597
Labor	1	0	\$910
Maintenance	1	0	\$2,613
Pumping			\$0
Chemical Cost			\$0
Oxidant Chem Cost			\$0
Sludge Removal			\$0
Other Cost (Annual Cost)			\$0
Land Access (Annual Cost)			\$0
Total Annual Cost:			<b>\$4,120</b>
Other Cost	1	0	

**Water Quality**

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

pH  su

Ferric Iron  mg/L

Ferrous Iron  mg/L

Sulfate  mg/L

Filtered Fe  mg/L

Filtered Al  mg/L

Filtered Mn  mg/L

Specific Conductivity  uS/cm

Total Dissolved Solids  mg/L

Dissolved Oxygen  mg/L

Typical Acid Loading  tons/yr

**Total Annual Cost: per  
1000 Gal of H2O Treated \$0.391**

Company Name H & D Coal Company

Project 61820102-4

Site Name Merola

COMMENTS:

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102-4

Site Name Merola



# AMD TREAT PONDS

AMDTREAT

Pond Name

### Pond Design Based On:

Retention Time

1. Desired Retention Time  hours

3. Sludge Removal Frequency  times/year

4. Titration?

5. Sludge Rate  gal sludge/  
gal H2O

6. Percent Solids  %

7. Sludge Density  lbs./gal

Pond Size

8. Pond Length at Top of Freeboard  230.000 ft

9. Pond Width at Top of Freeboard  115.000 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 \$/yd3

14. Total Length of Effluent  
/ Influent Pipe  0.00 ft

15. Unit Cost of Pipe  0.00 \$/ft

Liner Cost

No Liner

Clay Liner

16. Clay Liner Unit Cost  \$/yd3

17. Thickness of Clay Liner  ft

Synthetic Liner

18. Synthetic Liner Unit Cost  \$/yd2

19. Clearing and Grubbing?

20. Land Multiplier  ratio

21. Clear/Grub Acres  acres

22. Clear and Grub Unit Cost  \$/acre

23. Revegetation Cost  1500.00 \$/acre

24. Cost of Baffles  0 \$

### Calculated Pond Dimensions per Pond

25. Length at Top of Freeboard  230 ft

26. Width at Top of Freeboard  115 ft

27. Freeboard Volume  5,000 yd3

28. Water Volume  3,141 yd3

29. Estimated Annual Sludge  0 yd3/yr

30. Volume of Sludge  
per Removal  0 yd3/  
removal

31. Excavation Volume  1.94 acre ft

32. Excavation Volume  3,141 yd3

33. Clear and Grub Area  0.91 acres

34. Liner Area  0 yd2

35. Calculated Retention Time  528 hours

### Ponds Sub-Totals per Pond

36. Excavation Cost  17,280 \$

37. Pipe Cost  0 \$

38. Liner Cost  0 \$

39. Clearing and Grubbing Cost  0 \$

40. Revegetation Cost  455 \$

41. Baffle Cost  0 \$

42. Estimated Cost  17,735 \$

Opening Screen  
Water Parameters

### Influent Water Parameters that Affect Ponds

Calculated Acidity

0.00 mg/L

Alkalinity

0.00 mg/L

Calculate Net  
Acidity  
(Acid-Alkalinity)

Enter Net Acidity  
manually

Net Acidity  
(Hot Acidity)

90.40 mg/L

Design Flow

20.00 gpm

Typical Flow

20.00 gpm

Total Iron

49.20 mg/L

Aluminum

0.76 mg/L

Manganese

31.00 mg/L

Record Number

1 of 1



Company Name H & D Coal Company

Project 61820102-4

Site Name Merola



**AMDTREAT**

**AMD TREAT  
OTHER COST**

Other Cost Name

A. Description of Item	B. Unit Cost Per Item	C. Quantity	D. Total Item Cost	E. Capital Cost Annual Cost
1. BAMR Cost	56,922.00	1	56,922	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
2.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
3.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
4.	0.00	0	0	<input checked="" type="radio"/> Capital Cost <input type="radio"/> Annual Cost
5.	0.00	0	0	<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

Curent Capital Cost  \$  
Current Annual Cost  \$

Total Capital Cost  \$  
Total Annual Cost  \$

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102-4

Site Name Merola



**AMDTREAT**

## AMD TREAT SAMPLING

Sampling Name

**Estimate Sampling Cost**

1. Unit Labor Cost  \$/hr

2. Collection Time per Sample  hours/sample

3. Travel Time  hr

4. Sample Frequency  samples/mo

5. Lab Cost Per Sample  \$/sample

6. Number of Sample Points  points

**Enter Established Annual Sampling Cost**

7. Actual Annual Sampling Cost  \$

### Sampling Sub-Totals

8. Yearly Sample Analysis Cost  \$

9. Yearly Travel Cost  \$

10. Yearly Collection Cost  \$

11. Sampling Cost  \$

Record Number 1 of 1

Company Name H & D Coal Company

Printed on 03/31/2008

Project 61820102-4

Site Name Merola



## 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 H & D Coal Company

Project 61820102-4

Site Name Merola



AMDTREAT

## AMD TREAT

### MAINTANENCE

**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 int include Cost for  
Land Access and Engineering Cost

Company Name H & D Coal Company

Project 61820102-4

Site Name Merola



### AMD TREAT RECAPITIALIZATION COST

**AMDTREAT**

Calculation Period  yrs    Inflation Rate  %    Net Return Rate  %

Recapitalization Name

A. Description of Item	B. Unit Cost Per Item	C. Quantity	D. Total Item Cost	E. Life Cycle	F. Number of Periods	G. Total PV
1. BAMR Cost	56,922	1	56,922	20	3	62,227
2. Pond	17,735	1	17,735	20	3	19,388
3.	0	0	0	0	0	0
4.	0	0	0	0	0	0
5.	0	0	0	0	0	0
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  \$    PV Grand Total  \$