APPENDIX 8-1

PRELIMINARY COST ESTIMATE
And CALCULATIONS
COAL HOLLOW MINE

Initial Estimate By: John T. Boyd Company
Updated (7-18-07) By: Alton Coal Development, LLC

BONDING

Introduction

The purpose of this section is to provide a preliminary reclamation cost estimate. The final bond estimate will depend upon the approved permit and reclamation plan (R645-301-820.120). Therefore, a final bond estimate will be provided by the applicant to the Division following completion of the approved plan.

The calculation of reclamation costs is intended to conform to "Handbook for Calculation of Reclamation Bond Amounts" published by the US Office of Surface Mining. That handbook provides a series of Worksheets used to perform the calculation. This calculation follows that same worksheet format and numbering system. Attached to this introduction are the following worksheets:

Worksheet 1 - Description of the Worst Case Reclamation Scenario
Worksheet 2 - Structure Demolition and Disposal Costs
Worksheet 3 - Material Handling Plan Summary
Worksheet 4 - Earthwork Quantity
Worksheet 5A - Equipment Productivity - Remove Ponds
Worksheet 5B - Equipment Productivity - D10R - Remove Ponds
Worksheet 5C - Equipment Productivity - Backfill Pit from Excess Spoil
Worksheet 5D - Equipment Productivity - Loader/Truck Backfill Pit from Excess Spoil
Worksheet 5E - Equipment Productivity - Topsoil Replacement from Central Stockpile
Worksheet 5F - Equipment Productivity - Loader/Truck Topsoil Replacement - Central
Worksheet 5G - Equipment Productivity - Topsoil Replacement to North Reclaim
Worksheet 5H - Equipment Productivity - Loader/Truck Topsoil Replacement - North
Worksheet 5I - Equipment Productivity - Subsoil Replacement
Worksheet 5J - Equipment Productivity - Loader/Truck Subsoil Replacement
Worksheet 6A - Grading Requirements Haulroads, Facilities, Spoil, Topsoil
Worksheet 6B - Equipment Productivity - Grading & Ripping
Worksheet 7 - Summary Calculation of Earthmoving Costs
Worksheet 8 - Revegetation Costs
Worksheet 9 - Reclamation Bond Summary Sheet

Worksheet 1
Description of the Worst Case Reclamation Scenario

The "Worst Case" reclamation scenario occurs at the point during the permit term when the reclamation liabilities would be the highest. The determination of that point is based on the mining plans and material movement requirements, as well as the status of infrastructure and facilities. As with most truck/shovel mines, the major reclamation cost is pit backfilling and reclamation, and the "Worst Case" reclamation scenario occurs at the time when the largest pit void exists creating the largest backfilling requirements. At the Coal Hollow Mine, this will occur at the end of the mining process when the final pits (in the NE ¼ NE ¼ of Section 30) are fully open.

Structure Demolition:

The support facilities will be located at the north end of the permit area in the E ½ SE ¼ of Section 19. The facilities area covers approximately 29 acres. When returning the site to the post-mining land use, all structures not required for the post-mining land use will be removed. The facilities will generally be constructed of concrete and steel and will be demolished and the demolition debris hauled offsite to an approved disposal facility or properly disposed in the final pits. The coal stockpile pad will be excavated and the material buried in the final pit.

Earthmoving Activities:

Mining operations are conducted such that most of the spoil from the active pit is hauled to the previous mined-out pit which is backfilled and reclaimed. Thus, at any one time some portions of the planned mining area will have been mined and backfilled, some portions will have not been disturbed as yet, and some portion will be open and active. The worst-case reclamation scenario occurs when the active pit is at it's greatest extent. At Coal Hollow this occurs during the final phase of the mine plan when the final pits are fully open. The worst case scenario in this situation will be the Alternate scenario of final reclamation as provided in Chapter 5. This scenario assumes that Alton Coal Development, LLC is not successful with acquiring the adjacent federal coal reserves. In this situation, the variation from approximate original contour and part of the excess spoil structure will be rehandled to fill these final pits (refer to Drawings 5-19 and 5-37).

The main haulroad is located on the east side of the mining area and covers about 15 acres. The haulroad will be constructed with overburden material and surfaced with crushed rock. Since the slope along the haulroad from north to south is gradual, no significant cuts or fills are required. Road material will be removed and disposed of in the open pits or ramps using the truck and shovel fleet.

The "worst case" mining pit void will be about 75 feet deep (measured from the planned post-mining surface). The void volume was determined by superimposing the pit design including spoil slopes, sidewalls and pit advance wall slopes, over the planned post

mining contours using Carlson Software's SurvCADD software. (This phase can be viewed in Drawing 5-19).

Reclamation of the facilities area will require the removal of contaminated material where applicable. The material will be disposed of and buried in the open pit. All sediment ponds, diversion ditches, and berms will be removed during this same time frame.

Topsoil Replacement:

Suitable topsoil will be removed from the areas to be disturbed prior to that disturbance as specified in Chapter 2. Initially, the topsoil will be placed in stockpiles, however as mining progresses, the topsoil removed from ahead of the pit will be placed on mined over areas as part of normal reclamation. At the time of the "worst case" reclamation scenario, sufficient topsoil and subsoil will exist in stockpiles in the permit area to reclaim the pit area, roads facilities area and other disturbed zones. The stockpiled topsoil will be used to cover all areas where topsoil has been removed but not replaced. Subsoil will be separate layer below the topsoil placed over areas that have been mined. All topsoil will be graded in preparation for seeding.

Revegetation:

The worst-case reclamation situation is estimated to occur during the third year of mining. Seeding will occur during appropriate seasons, generally in the fall and spring. Depending on the timing of this final phase, seeding may be delayed to meet the appropriate seasonal weather conditions.

No prime farmland has been identified in the mining area.

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 2
Structure Demolition and Disposal Costs

Structures to be demolished

Item	Construction Material	Volume (cuft)	Unit Cost Basis ($)	Demolition Cost ($)
Office (footers only)	Concrete	750	14.60	$ 10,950
Shop	Concrete	30,000	6.30	$ 189,000
Wash Bay	Concrete	7,000	6.30	$ 44,100
Fuel Storage	Concrete	3,000	6.30	$ 18,900
Oil Storage	Concrete	5,000	6.30	$ 31,500
Coal Hopper/Transfer	Concrete	48,000	6.30	$ 302,400
Coal Crusher (footers only)	Concrete	300	14.60	$ 4,380
Coal Conveyors and Tower	Concrete	5,000	14.60	$ 73,000
Reclaim Tunnel	Concrete	42,000	6.30	$ 264,600
Coal Loadout	Concrete	900	6.30	$ 5,670
Subtotal				$ 944,500
Item	Construction Material	Volume (cuft)	Unit Cost Basis ($)	Demolition Cost ($)
Shop	Steel	1,000,000	0.26	$ 260,000
Office	Steel	315,000	0.26	$ 81,900
Wash Bay	Steel	150,000	0.26	$ 39,000
Fuel Storage (3 tanks)	Steel	2,111	0.26	$ 549
Oil Storage (5 tanks)	Steel	628	0.26	$ 163
Coal Hopper	Steel	3,400	0.26	$ 884
Coal Crusher	Steel	16,000	0.26	$ 4,160
Reclaim Tunnel	Steel	14,240	0.26	$ 3,702
Coal Loadout	Steel	10,400	0.26	$ 2,704
Subtotal				$ 393,063
Item	Construction Material	Volume (feet)	Unit Cost Basis ($)	Demolition Cost ($)
Coal Conveyors and Tower	Steel	1,537	44.25	$ 68,012
Subtotal				$ 68,012
Total				$ 1,405,575

Reference: 2006 RSMeans Heavy Construction Cost Data

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 3
Material Handling Plan Summary

Earthmoving Activity	Volume (LCY)	Origin	Destination	Haul Distance (Feet)	Grade* (%)	Equipment To Be Used
Haul subsoil	304,000	East Stockpile	South end of mining area	5,500	-0.05	Cat 777 trucks
Haul spoil	6,800,000	Spoil Stockpile	South end of mining area	4,092	1.5	Cat 777 trucks
Haul topsoil	130,000	Central Stockpile	South end of mining area	5,000	-0.7	Cat 777 trucks
Haul topsoil	373,000	Central Stockpile	Facilities, nonmined areas	2,200	3.4	Cat 777 trucks

* Includes grade resistance (% grade)

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 4
Earthwork Quantity

Backfill Final Pits and Topsoil Haul Road

Active Pit volume = 6,800,000 cuyd
(Volumes derived from pit design and Carlson Software's SurvCADD)

Replace topsoil	=	80 acres X 1 foot	=	130,000 cuyd
Replace subsoil	=	80 acres x 2.35 feet	=	304,000 cuyd

Facilities Area Cleanup and Topsoil/Subsoil for disturbed/nonmined areas

Facilities area volume	=	29 acres X .25 ft	=	11,696 cuyd
Replace topsoil	=	231 acres X 1 foot	=	372,680 cuyd

Any contaminated material will be picked up and hauled to the pit for disposal before topsoil is replaced.

Sediment Ponds

Four sediment ponds = 30,000 cuyd

Worksheet 5A

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Remove Ponds

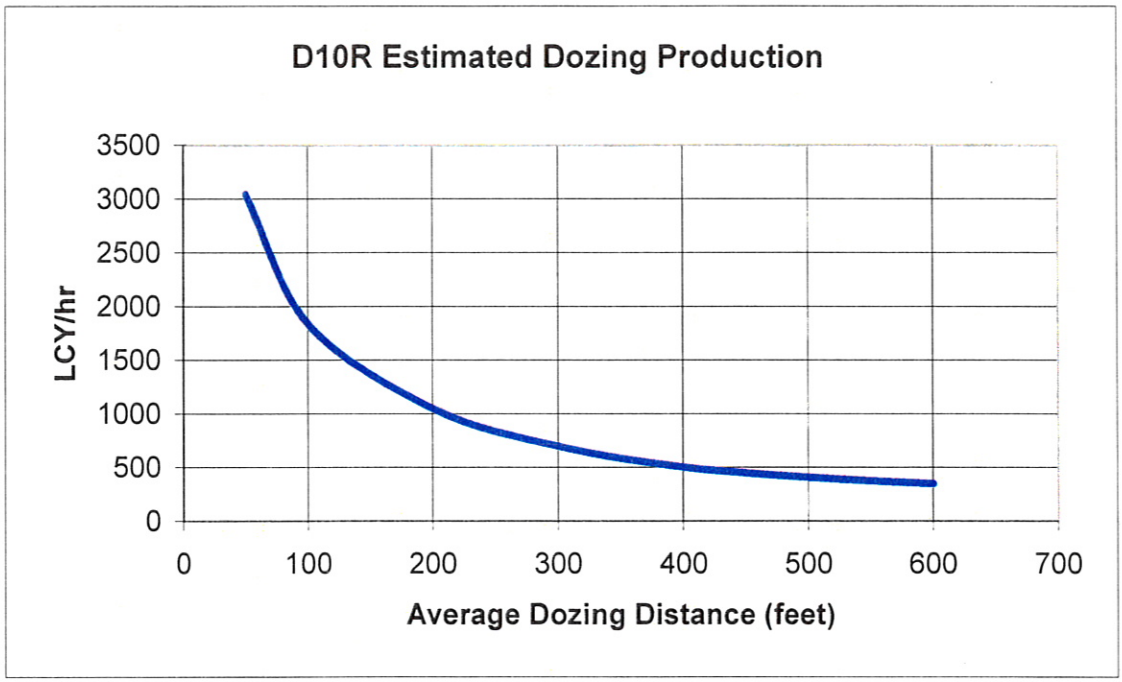
Characterization of Dozer Used (type, size, etc.):		
D10R, U-blade, ripper		
Power shift transmission	1.00	yes

Description of Dozer Use:	
Average dozing distance (feet)	200
Hourly production (LCY/hr from chart)	1050
Grade (in percent)	-10
Grade Correction	1.20
Material Unit Weight (lb/LCY)	1,826
Density Correction	1.26

Production Adjustment Factors		
Operator Factor		
Is operator excellent	1.00	no
Is operator average	0.75	yes
Is operator poor	0.60	no
Material Factor		
Loose stockpile	1.20	yes
Hard to cut, frozen with tilt cylinder	0.80	no
Hard to cut, frozen without tilt cylinder	0.70	no
Normal material	1.00	no
Hard to drift	0.80	no
Rock, ripped or blasted	0.75	no
Production Method/Blade Factor		
Slot dozing	1.20	no
Side by side dozing	1.20	no
Normal dozing	1.00	yes
Visibility		
Dust, rain, snow, fog, or darkness	0.80	no
Normal weather	1.00	yes
Job Efficiency		
50 min/hr	0.83	yes
40 min/hr	0.67	no
Elevation Factor		
<7,500 feet	1.00	yes

Quantity of Material to be Moved (LCY)	30,000

Worksheet 5B
Remove Ponds



Operating Adjustment Factor	=	0.75	X	1.20	X	0.83	X	1.20	X	1.26				
		Operator Factor		Material Factor		Job Efficiency Factor		Grade Factor		Weight Correction Factor				
	X	1.00	X	1.00	X	1.00	=	1.13						
		Production Method		Visibility Factor		Elevation Factor								
Net Hourly Production	=	1,050	X	1.13	=	1190	LCY/hr							
		Normal Hourly Production (see graph)		Operating Adjustment Factor										
Hours Required	=	30,000	/	1,190	=	25	Hours							
		Volume to be Moved (LCY)		Net Hourly Production (LCY/hr)										

Data Source: Caterpillar Performance Handbook, Edition 34

Worksheet 5C

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Backfill Pit From Excess Spoil Area

Characterization of Loader Used (type, size, etc.):

992G Wheel Loader	15 cy
777D Rear Dump Trucks	79 cy

Loading and Haulage

Productivity Factors

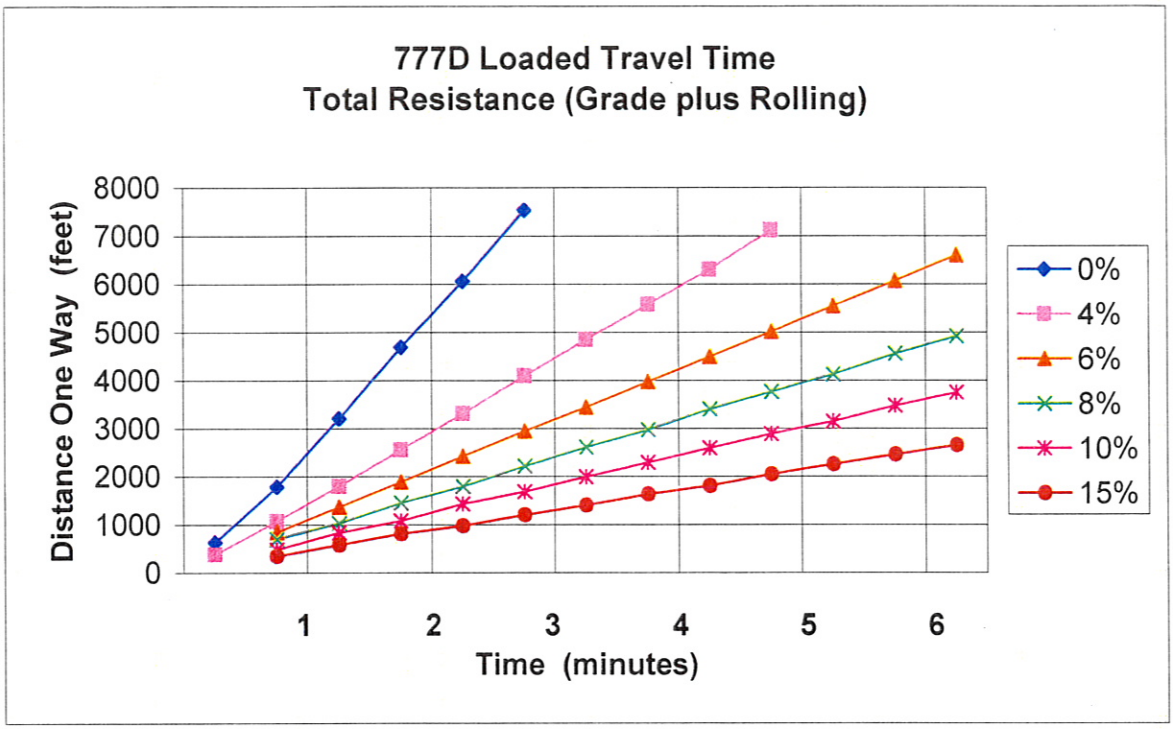
Basic Loader Cycle (min)	0.55
Bulky Material (min)	0.03
Dumped Pile (min)	0.02
Common Loader/Truck Ownership (min)	-0.04
Work Hour Factor (50 min/hr)	0.83
Bucket Fill Factor	0.85
Truck Loaded Volume - 6 passes	79
Haulage Distance (feet)	4,092
Effective Grade (%)	1.5

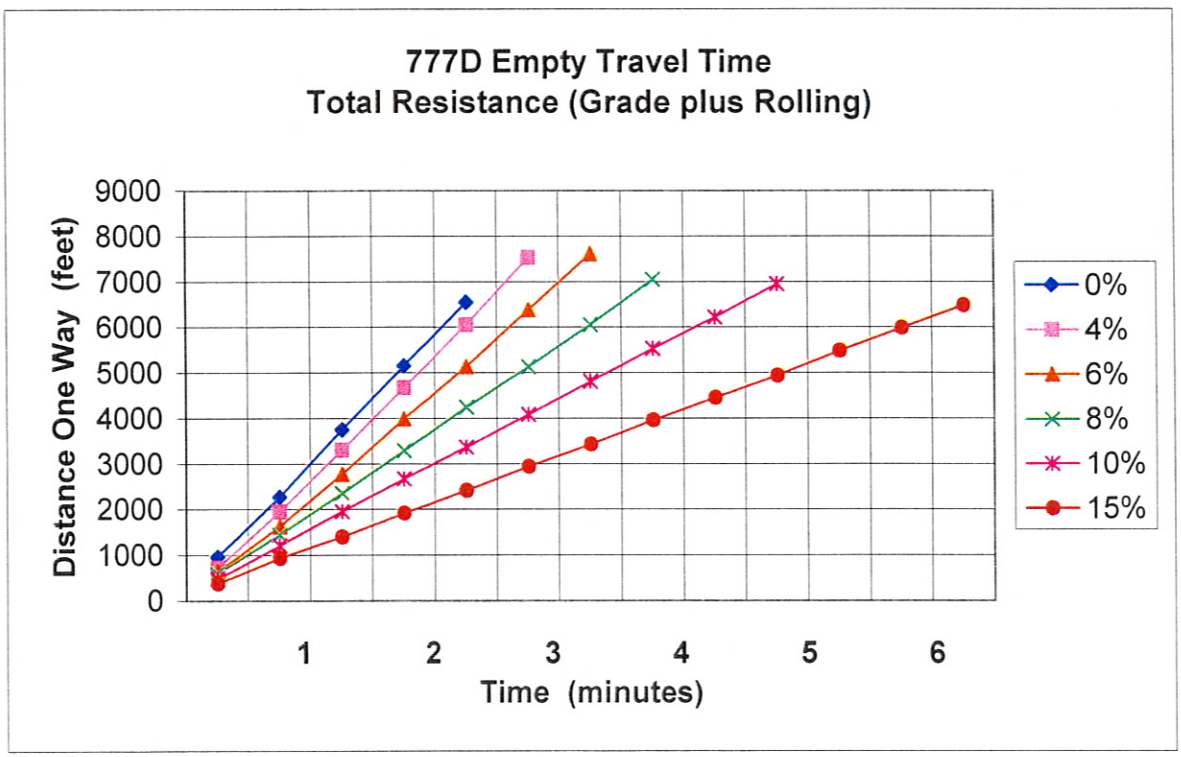
Production Times

Haul Time (min)	2.3
Dump Time (min)	1.1
Return Time (min)	2

Truck / Loader Match (trucks per loader)	3
Quantity of Material to be Moved (LCY) (Using Carlson Software's SurvCADD)	6,800,000

Worksheet 5D





Data Source: Caterpillar Performance Handbook, Edition 34

Worksheet 5D

Backfill Pit from Stockpile
Loader Summary

Loader Cycle Time	=	0.55	+	0.03	+	0.02	+	(0.04)	=	0.56	minutes	
		Basic Loader Cycle Time		Bulky Material		Dumped Pile		Common Owner				
Loader Volume per Cycle	=	15	X	0.85	=	12.75	cubic yards					
		Bucket Capacity		Bucket Fill Factor								
Loader Cycle Time per Truck	=	0.56	X	6.0	=	3.36	minutes					
		Loader Cycle Time		Passes per Truck								

Truck Summary

Truck Cycle Time	=	3.36	+	2.30	+	1.10	+	2.00	=	8.76	minutes	
		Load Time		Haul Time		Dump Time		Return Time				
Production Rate	=	79	X	3	/	8.76	=	27.05	LCY/min			
		Truck Capacity (LCY)		Number of Trucks		Truck Cycle Time						
Hourly Production	=	27.05	X	60	X	0.83	=	1,352	LCY/hour			
		Production Rate		Minutes per Hour		Efficiency Factor						
Hours Required	=	6,800,000	/	1,352	=	5,029	hours					
		Volume to be moved		Hourly Production								

Worksheet 5E

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Topsoil Replacement From Central Stockpile to South End Pit and Haul Road

Characterization of Loader Used (type, size, etc.):

992G Wheel Loader	15 cy
777D Rear Dump Trucks	79 cy

Loading and Haulage

Productivity Factors

Basic Loader Cycle (min)	0.55
Bulky Material (min)	0.03
Dumped Pile (min)	0.02
Common Loader/Truck Ownership (min)	-0.04
Work Hour Factor (50 min/hr)	0.83
Bucket Fill Factor	0.85
Truck Loaded Volume - 5 passes	79
Haulage Distance (feet)	4,092
Effective Grade (%)	-0.7

Production Times

Haul Time (min)	2.4
Dump Time (min)	1.1
Return Time (min)	2.4

Truck / Loader Match (trucks per loader)	3
Quantity of Material to be Moved (LCY)	130,000

Worksheet 5F

Topsoil Replacement from Central Stockpile
Loader Summary

Loader Cycle Time	=	0.55 Basic Loader Cycle Time	+	0.03 Bulky Material	+	0.02 Dumped Pile	+	(0.04) Common Owner	=	0.56	minutes	
Loader Volume per Cycle	=	15 Bucket Capacity	X	0.85 Bucket Fill Factor	=	12.75	cubic yards					
Loader Cycle Time per Truck	=	0.56 Loader Cycle Time	X	6.0 Passes per Truck	=	3.36	minutes					

Truck Summary

Truck Cycle Time	=	3.36 Load Time	+	2.40 Haul Time	+	1.10 Dump Time	+	2.40 Return Time	=	9.26	minutes	
Production Rate	=	79 Truck Capacity (LCY)	X	3 Number of Trucks	/	9.26 Truck Cycle Time	=	25.59	LCY/min			
Hourly Production	=	25.59 Production Rate	X	60 Minutes per Hour	X	0.83 Efficiency Factor	=	1,279	LCY/hour			
Hours Required	=	130,000 Volume to be moved	/	1,279 Hourly Production	=	102	hours					

Worksheet 5G

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Topsoil Replacement from Central Stockpile to North Reclaim and Facilities

Characterization of Loader Used (type, size, etc.):

992G Wheel Loader	15 cy
777D Rear Dump Trucks	79 cy

Loading and Haulage

Productivity Factors

Basic Loader Cycle (min)	0.55
Bulky Material (min)	0.03
Dumped Pile (min)	0.02
Common Loader/Truck Ownership (min)	-0.04
Work Hour Factor (50 min/hr)	0.83
Bucket Fill Factor	0.85
Truck Loaded Volume - 5 passes	79
Haulage Distance (feet)	2,200
Effective Grade (%)	3.4

Production Times

Haul Time (min)	1.6
Dump Time (min)	1.1
Return Time (min)	1.1

Truck / Loader Match (trucks per loader)	3
Quantity of Material to be Moved (LCY)	373,000

Worksheet 5H

Topsoil Replacement from Central Stockpile to North Reclaim
Loader Summary

Loader Cycle Time	=	0.55 Basic Loader Cycle Time	+	0.03 Bulky Material	+	0.02 Dumped Pile	+	(0.04) Common Owner	=	0.56	minutes

Loader Volume per Cycle	=	15 Bucket Capacity	X	0.85 Bucket Fill Factor	=	12.75	cubic yards	

Loader Cycle Time per Truck	=	0.56 Loader Cycle Time	X	6.0 Passes per Truck	=	3.36	minutes	

Truck Summary

Truck Cycle Time	=	3.36 Load Time	+	1.60 Haul Time	+	1.10 Dump Time	+	1.10 Return Time	=	7.16	minutes

Production Rate	=	79 Truck Capacity (LCY)	X	3 Number of Trucks	/	7.16 Truck Cycle Time	=	33.10	LCY/min	

Hourly Production	=	33.10 Production Rate	X	60 Minutes per Hour	X	0.83 Efficiency Factor	=	1,654	LCY/hour		

Hours Required	=	373,000 Volume to be moved	/	1,654 Hourly Production	=	225	hours	

Worksheet 5l

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Subsoil Replacement From East Stockpile to South End Pit and Haul Road

Characterization of Loader Used (type, size, etc.):

992G Wheel Loader	15 cy
777D Rear Dump Trucks	79 cy

Loading and Haulage

Productivity Factors

Basic Loader Cycle (min)	0.55
Bulky Material (min)	0.03
Dumped Pile (min)	0.02
Common Loader/Truck Ownership (min)	-0.04
Work Hour Factor (50 min/hr)	0.83
Bucket Fill Factor	0.85
Truck Loaded Volume - 5 passes	79
Haulage Distance (feet)	5,500
Effective Grade (%)	-0.5

Production Times

Haul Time (min)	2.7
Dump Time (min)	1.1
Return Time (min)	2.6

Truck / Loader Match (trucks per loader)	3
Quantity of Material to be Moved (LCY)	304,000

Worksheet 5J

Subsoil Replacement From East Stockpile to South End Pit and Haul Road

Loader Summary

Loader Cycle Time	=	0.55 Basic Loader Cycle Time	+	0.03 Bulky Material	+	0.02 Dumped Pile	+	(0.04) Common Owner	=	0.56	minutes

Loader Volume per Cycle	=	15 Bucket Capacity	X	0.85 Bucket Fill Factor	=	12.75	cubic yards	

Loader Cycle Time per Truck	=	0.56 Loader Cycle Time	X	6.0 Passes per Truck	=	3.36	minutes	

Truck Summary

Truck Cycle Time	=	3.36 Load Time	+	2.70 Haul Time	+	1.10 Dump Time	+	2.60 Return Time	=	9.76	minutes

Production Rate	=	79 Truck Capacity (LCY)	X	3 Number of Trucks	/	9.76 Truck Cycle Time	=	24.28	LCY/min	

Hourly Production	=	24.28 Production Rate	X	60 Minutes per Hour	X	0.83 Efficiency Factor	=	1,214	LCY/hour	

Hours Required	=	304,000 Volume to be moved	/	1,214 Hourly Production	=	250	hours	

Worksheet 6A

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Earthmoving Activity:
Grading of haulroads, facilities, final grading of spoil, and grading of topsoil

Characterization of Motorgrader Used (type, size, etc.):

16H Motorgrader with ripper	16	ft blade

Productivity Factors:

Average speed	3	mph
Effective blade width	13.9	ft
Work hour factor (50 min/hr)	0.83	

Work Activities:

Grade haulroads	14	acres
Grade spoil	62	acres
Grade topsoil	200	acres
Grade Subsoil	62	acres
Grade stockpile areas	55	acres
Facilities areas	29	acres
Sediment ponds	7	acres
Diversion ditches	6	acres
Total	435	acres

Worksheet 6B
Motorgrader Productivity Calculation - Final Preparation and Grading of Disturbed Areas

Grading

Hourly Production	=	3.0 Average Speed	X	13.9 Effective Blade Width	X	5,280 Feet per Mile	/	43,560 Square feet per acre	X	0.83 Efficiency Factor	=	4.21	acres/hr

Hours Required	=	435 Acres Graded	/	4.21 Hourly Production	=	103 hours

Ripping

Hourly Production	=	3.0 Average Speed	X	9.0 Ripper Width	X	5,280 Feet per Mile	/	43,560 Square feet per acre	X	0.83 Efficiency Factor	=	2.73	acres/hr

Hours Required	=	105 Acres Graded	/	2.73 Hourly Production	=	39 hours

Motorgrader is assumed to be onsite during total project.

Data Souce: Caterpillar Performance Handbook, Edition 34

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 7
Summary Calculation of Earthmoving Costs

Equipment	Ownership & Operation Cost ($/hr)	Labor Cost ($/hr)	Total Hours Required	Total Cost
992G Wheel Loader	104.74	12.86	5,356	$ 629,866
777D Rear Dump Trucks	67.28	11.02	5,356	$ 1,258,124
16H Motorgrader	43.09	14.27	142	$ 8,145
Water Truck (7000 gal.)	42.48	11.02	5,356	$ 286,546
Subtotal				$ 2,182,681

Reference: US Department of Labor website, Labor Cost Data for Kane County, Utah
Reference: Western Mine Engineering, Inc., Mine and Mill Equipment Costs

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 8
Revegetation Costs

Description of Area to be Revegetated:
Northeast corner and south end of mining area, haulroads, as well as area under spoil and topsoil stockpiles

Description of Revegetation Activities:
Seedbed preparation, seeding, fertilizing, mulching, tree planting and spraying

Cost calculation for Individual Revegetation Activities:

Initial Seeding

200.0	X	117	+	609	=	$ 145,200
Area to be seeded (acres)		Seedbed preparation ($/acre)		Seeding, fertilizing, & mulching ($/acre)		

Planting Trees and Shrubs

40.0	X	315	+	50	=	$ 14,600
Area to be planted (acres)		Planting ($/acre)		Herbicide Treatment ($/acre)		

Reseeding

233.0	X	0.25	X	45	+	609	=	$ 38,096
Area to be seeded & unreleased disturbed areas (acres)		Failure rate		Seedbed preparation ($/acre)		Seeding, fertilizing, & mulching ($/acre)		

Replanting Trees and Shrubs

40.0	X	0.50	X	315	+	50	=	$ 7,300
Area to be planted & unreleased disturbed areas (acres)		Failure rate		Planting ($/acre)		Herbicide Treatment ($/acre)		

Total revegetation cost for this area = $ 205,196

Project: Coal Hollow Mine
Date: May 1, 2006 (updated May 18, 2007)

Worksheet 9
Reclamation Bond Summary Sheet

1	Total Facility and Structure Removal Costs	$ 1,405,575
2	Total Earthmoving Costs	$ 2,182,681
3	Total Revegetation Costs	$ 205,196
4	Total Other Reclamation Activities Costs	$ -
5	Total Direct Costs (sum of 1 through 4)	$ 3,793,452
6	Inflated Total Direct Costs	$ 4,472,479
7	Mobilization/Demobilization 5% of line 6	$ 223,624
8	Contingencies 5% of line 6	$ 223,624
9	Engineering Redesign Fee 3% of line 6	$ 134,174
10	Contractor Profit/Overhead 20% of line 6	$ 894,496
11	Project Management Fee 5% of line 6	$ 223,624
12	Total Indirect Costs (sum of 7 through 11)	$ 1,699,542
13	Grand Total Bond Amount	$ 6,172,022

Inflation factor for prior 4.25 years = 17.90%

Source: U.S. Department of Labor, Producer Price Index, Bituminous coal & lignite surface mining
(Only available from December 2001 through March 2006)