

CHAPTER 20

RECLAMATION SCHEDULE



## CHAPTER 20

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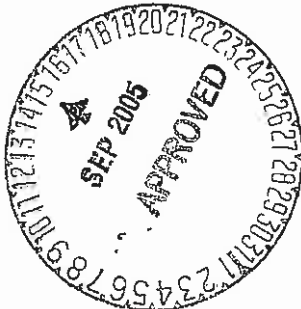
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## CHAPTER 20

### RECLAMATION SCHEDULE

#### Introduction

This chapter presents a timetable for each major phase of the reclamation plan and projected reclamation schedules for the coal resource areas and lands under support facilities and structures. Additional information regarding the timing of reclamation activities may be found in the chapters that discuss the components of the reclamation plan. For example, seeding periods are discussed in Chapter 23, Revegetation Plan. Until facilities such as roads and sediment ponds are approved as elements of the postmining land use plan, Peabody Western Coal Company (PWCC) must develop schedules for the reclamation of all disturbed lands.

Drawings 85210 (Mine Plan Map) and 85360 (Jurisdictional Permit and Affected Lands Map) identify the limits of disturbance as of December 16, 1977 (pre-SMCRA), interim program, and permanent program lands.

#### Timing of Reclamation Activities

A generalized timetable of reclamation activities is shown in Figure 1. The timetable outlines the sequence and timing of each major phase of reclamation. It is not possible to precisely specify the timing of each reclamation phase in each mining area for the following reasons: (1) variables such as customer demand for coal, labor strikes, coal quality, overburden characteristics and manpower and equipment availability affect the rate of progress of mining activities; and (2) variables such as manpower and equipment availability, weather conditions, the availability of materials, laboratory analytical delays and the rate of mining advance affect the progress of grading, topsoiling and seeding in each mining area. The reclamation process is only as fast as the rate of production - hence, spoiling of material and the amount of acres graded, topsoiled, and revegetated each year will vary depending on where and when the bottom seam of coal was mined within the permitted area. Once the spoil piles are graded, the reclamation sequence will occur in accordance with Figure 1 and as described in Chapter 22, 23 and 26.

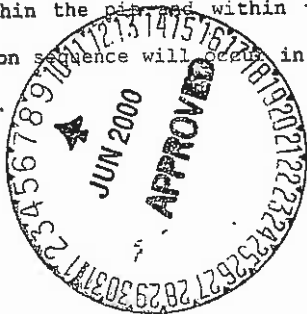


Figure 1  
Reclamation Timetable

Sequence of Activities	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sedimentation Pond												
Construction												
Linear Detention &												
Filtering Structures												
(Minor Disturbance Areas)												
Site Clearing												
Topsoil Salvage												
Blasting												
Overburden Removal												
Coal Removal												
Backfilling and Grading												
Topographic Manipulation												
Measures Used in Conjunction												
w/Diversions & Overland												
Conveyances												
Topsoil Redistribution,												
Graded Spoil Sampling, Contour Terrace Construction												
Spoil or Soil Surface												
Mechanical Manipulation												
Measures												
Seeding/Vegetation Measures												
Mulching												
Key Habitat Area Planting												
Fencing												
Maintenance & Management												

Notes: Operations performed during periods indicated. Primary revegetation season.  
Operations performed, weather permitting. Secondary revegetation season.



Sedimentation pond construction, or construction of linear detention and filtering structures is completed prior to any other surface disturbances. These activities insure sediment control and protection of the hydrologic system (Chapters 6 and 26).

Clearing of woody or other materials which could interfere with topsoil removal, or potentially contaminate topsoil is performed immediately prior to topsoil removal in a given area. Site clearing and topsoil salvage operations (Chapter 22) are typically conducted from March to November. These activities may be conducted in other months if mining conditions warrant and weather conditions permit.

Following coal removal, backfilling and grading activities, as described in Chapters 21 and 26, are conducted. These activities are performed throughout the year. They include manipulation of the landform within the confines of approximate original contour to improve the runoff characteristics of the reclaimed landscape.

During and after the completion of rough grading, the appropriate data is collected to design and construct the postmining diversions and overland water conveyance systems (main reclamation channels and downdrains). The designs are installed during the course of the reclamation process. These procedures are detailed in the Surface Stabilization Plan (Chapter 26), and are typically conducted from March through November.

Topsoil material redistribution, the associated graded spoil suitability determinations (Chapter 22), and the construction of contour terraces follow the same timetable as salvage operations. If ground and weather conditions permit, topsoil material redistribution may be conducted in months other than those indicated in the reclamation timetable (Figure 1).

Mechanical manipulation of the spoil and topsoil is conducted following the redistribution of the topsoil material. These activities primarily entail deep ripping and contour furrow disking and are described in detail in Chapters 21, 22, and 26. These operations are performed from March through October, or at other times when weather and surface conditions permit.

Seeding and mulching of topsoiled areas will mostly be conducted during the primary seeding season following topsoil redistribution and mechanical manipulation, weather

permitting. Therefore, the schedule for these activities parallels the topsoil redistribution and surface mechanical manipulation schedule. Seeding and mulching may be conducted during the secondary seeding season, weather and ground conditions permitting. Revegetation activities are discussed in Chapters 23 and 26.

Fence construction is performed throughout the year. Construction is interrupted only by inclement weather.

Maintenance and management activities are conducted throughout the year. The timing of these activities is dependent upon the specific activity. Fence maintenance and removal of trespass livestock are conducted throughout the year. Interseeding and reseeding is conducted either during the primary or secondary seeding seasons based on needed remedial work. Surface stability monitoring and remedial actions are conducted as described in Chapter 26.

#### Projected Reclamation Schedules

The projected reclamation schedules for the eight coal resource areas in which mining and reclamation will occur during the life of operations at the Black Mesa Complex are presented in Tables 1 through 7. The projected acres disturbed, backfilled and graded, and topsoiled and seeded for five year mine blocks, where appropriate, are included in the tables.

The projections of acres graded, topsoiled, and seeded are based upon three basic considerations. First, approximately three spoil rows are normally rough graded simultaneously once the pit configurations become regular to achieve the desired postmining land configuration and to effectively maintain topographic continuity between grading sequences. Upon OSM approval, the number of spoils associated with irregular box cuts, certain inside and outside curves, and haulage ramps may exceed four to facilitate grading. Second, the point in time at which grading of specific spoils can begin is based upon excavation cycle times and pit configuration. Cycle times are dependent upon factors such as pit configurations, excavator performance, overburden thickness, the number and thicknesses of partings, and customer demand (see Drawing No. 85210-Mine Plan Map). Third, once grading begins, the amount of acres graded, topsoiled, and seeded annually in a given pit approximates the acres disturbed annually; however, this will vary each year within each mine area with the pit progression and the spoil area available for

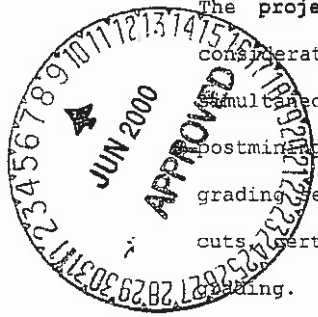


TABLE 1

Projected Reclamation Schedule for the J-7 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 01/01/2000	274	96	N.A.
2000	41	73	79
2001	41	74	80
2002	45	78	84
2003	40	73	79
2004	24	71	75
2005	0	0	68
Soil Stockpiles (2006)	37	0	37
Ponds (2014)	65	65	65
Scoria Pits (2008)	169	169	169
Black Mesa Office Complex (2010)	198	198	198
Totals:	934	897	934

<sup>1</sup>Accounts for topsoiled and seeded acres after 01/01/2000. See Annual Reclamation Reports for acres disturbed, graded, topsoiled and seeded prior to the above date.



TABLE 2

Projected Reclamation Schedule for the N-6 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 01/01/2000	739	345	N.A.
2000	99	127	151
2001	82	110	134
2002	84	111	136
2003	89	117	141
2004	127	130	179
2005	140	142	191
2006	0	151	166
2007	0	127	145
2008	0	0	117
Scoria Pits (2010)	154	154	154
Central Ops/Warehouse (2016)	133	133	133
Outside Roads (2016)	310	310	310
J-3 Airport Complex (2016)	21	21	21
Ponds (2016)	244	244	244
Soil Stockpiles (2010, 2016)	45	0	45
Totals:	2267	2222	2267

<sup>1</sup>Accounts for topsoiled and seeded acres after 01/01/2000. See Annual Reclamation Reports for acres disturbed, graded, topsoiled and seeded prior to the above date.



TABLE 3

Projected Reclamation Schedule for the N-99 and N-11 Coal Resource Areas<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
-----N-99 Coal Resource Area-----			
Beyond 2010	843	843	843
Ponds (Beyond 2010)	45	45	45
Topsoil Piles (Beyond 2010)	65	65	65
Totals:	953	953	953
-----N-11 Coal Resource Area-----			
As of 12/31/2005	584	230	N.A.
2006	0	95	115
2007	0	195	210
2008	0	64	195
2009	0	0	64
Ponds (Beyond 2010)	27	27	27
Topsoil Piles (2008)	32	0	32
N-11 Truck Dump (Beyond 2010)	74	74	74
Totals:	717	685	717

<sup>1</sup>Accounts for topsoiled and seeded acres after 12/31/2005. See Annual Reclamation Reports for acres disturbed, graded, topsoiled, and seeded prior to the above date.



TABLE 4

Projected Reclamation Schedule for the N-14 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 12/31/2005	0	0	N.A.
N-14 Facilities (Beyond 2010)		25	26
Ponds (Beyond 2010)	25	25	25
Totals:	25	51	51

<sup>1</sup>Accounts for topsoiled and seeded acres after 12/31/2005. See Annual Reclamation Reports for acres disturbed, graded, topsoiled, and seeded prior to the above date.



TABLE 3

Projected Reclamation Schedule for the N-99 and N-11 Coal Resource Areas<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
-----N-99 Coal Resource Area-----			
2005	222	0	0
2006-2011	621	350	270
Beyond 2011	0	493	573
Ponds (Beyond 2010)	45	45	45
Topsoil Piles (Beyond 2010)	65	65	65
Totals:	953	953	953
-----N-11 Coal Resource Area-----			
As of 12/01/2001	797	65	N.A.
12/01/2001 - 2002	0	69	76
2003	0	70	69
2004	0	118	70
2005	0	386	118
2006	0	89	386
2007	0	0	78
Ponds (2014)	27	27	27
Topsoil Piles (2006)	32	0	32
N-11 Truck Dump Fac. (2026)	74	74	74
Totals:	930	898	930

<sup>1</sup>Accounts for topsoiled and seeded acres after 12/01/2001. See Annual Reclamation Reports for acres disturbed, graded, topsoiled, and seeded prior to the above date.

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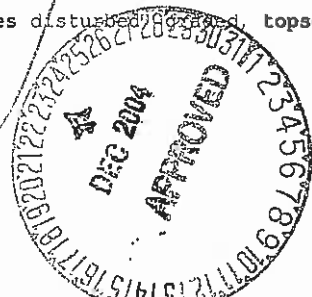


TABLE 4

Projected Reclamation Schedule for the J-19 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 12/01/2001	825	342	N.A.
12/01/2001 - 2002	255	126	357
2003	783	158	105
2004	253	120	158
2005	201	121	134
2006-2011	949	1782	1425
Beyond 2011	272	959	1429
Topsoil Piles (Life of Pit)	118	0	118
Ponds (Beyond 2011)	127	127	127
J28 Shop and Facilities.	273	273	273
N8 Facilities	173	173	173
Outside Roads	100	100	100
Conveyor	200	200	200
Totals:	4529	4481	4599

<sup>1</sup>Accounts for topsoiled and seeded acres after 12/01/2001. See Annual Reclamation Reports for acres disturbed, graded, topsoiled, and seeded prior to the above date.



TABLE 5

Projected Reclamation Schedule for the J-16 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 01/01/2000	131	166	N.A.
2000	0	131	171
2001	0	0	126
N-14 Facilities and Storage			
Yard (2012)	65	65	65
Soil Stockpiles (2001)	26	0	26
Scoria Pit (2001)	18	18	18
Ponds (2009)	76	76	76
Totals:	316	456	482

<sup>1</sup>Accounts for topsoiled and seeded acres after 01/01/2000. See Annual Reclamation Reports for acres disturbed, graded, topsoiled and seeded prior to the above date.

TABLE 6

Projected Reclamation Schedule for the J-19 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 01/01/2000	915	184	N.A.
2000	161	148	266
2001	83	184	200
2002	258	168	190
2003	117	126	126
2004	131	100	100
2005	38	186	171
2006-2011	275	780	625
Beyond 2011	1494	1780	1978
Topsoil Piles (Life of Pit)	118	0	118
Ponds (Beyond 2011)	44	44	44
J28 Shop and Facilities.	273	273	273
N8 Facilities	173	173	173
Outside Roads	100	100	100
Conveyor	200	200	200
Totals:	4380	4446	4564

<sup>1</sup>Accounts for topsoiled and seeded acres after 01/01/2000. See Annual Reclamation Reports for acres disturbed, graded, topsoiled and seeded prior to the above date.

TABLE 7

Projected Reclamation Schedule for the J-21 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 12/01/2001	1147	313	N.A.
12/01/2001 - 2002	187	151	253
2003	138	96	151
2004	100	145	96
2005	100	240	191
2006-2011	1393	1581	1265
Beyond 2011	268	1120	1690
Topsoil Piles (Life of Pit)	165	0	165
Ponds (Beyond 2011)	61	61	61
Scoria Pits (Beyond 2011)	142	142	142
Totals:	3701	3849	4014

<sup>1</sup>Accounts for topsoiled and seeded acres after 12/01/2001. See Annual Reclamation Reports for acres disturbed, graded, topsoiled, and seeded prior to the above date.



TABLE 8

## Projected Reclamation Schedule for the N-9 Coal Resource Area

Year	Acres		
	Disturbed	Graded	Topsoiled and Seeded
As of 1/28/05	0	0	0
2005-2011*	2063*	1572	1572
Beyond 2011	466	726	726
Ponds (Beyond 2011)	0	21	21
Topsoil Piles (Beyond 2011)	0	0	71
Outside Roads (Beyond 2011)	0	139	139
Totals:	2529	2458	2529

\*Ponds, topsoil piles, and outside roads are disturbed in 2005-2011 and these acreages are included in the 2063 acre figure.



backfilling and grading. Further, the amount of time needed to complete grading, topsoiling, and seeding after mining ceases is approximately equal to the lag time between the initiation of mining and the initiation of grading. In certain circumstances, this generalization may not apply because of the spoil material needed to achieve the designed postmining landform. For example, the backfilling and grading of box cut spoil and deep ramps typically requires the movement of large volumes of spoil for great distances. In conclusion, the reclamation process will proceed relative to the mining production, on an annual basis throughout the permitted area.

#### Abandonment of Operations

All facilities will be reclaimed unless approved as an element of the postmining land use plan. After grading, the reclaimed areas will be topsoiled or covered with suitable plant growth medium and revegetated. Three to five years will be needed to completely reclaim all facilities and structures following the cessation of mining. Abandonment of mine facilities will commence when the facilities are no longer required to support mining activities. The structures and equipment including foundations and sub-bases will be removed; unless approved by the applicable regulatory authority to be reclaimed in-place. Materials having economic value will be salvaged. Materials that are not salvageable will be buried in accordance with the noncoal mine waste disposal plan as required by 30 CFR 816.89. All structure sites will be contoured to conform to the natural landform. Cut and fill slopes which are compatible with the postmining land use and which are approved by the regulatory authority will be retained.



TABLE 7

Projected Reclamation Schedule for the J-21 Coal Resource Area<sup>1</sup>

Year	Acres Disturbed	Acres Graded	Acres Topsoiled and Seeded
As of 01/01/2000	1244	156	N.A.
2000	353	133	271
2001	61	181	172
2002	23	224	246
2003	26	195	195
2004	219	184	185
2005	389	240	200
2006-2011	277	1145	816
2012	0	150	275
2013	0	140	232
2014	0	0	156
Topsoil Piles (Life of Pit)	145	0	145
Ponds (2021)	61	61	61
Scoria Pits (2015)	142	142	142
Totals:	2940	2951	3096

<sup>1</sup>Accounts for topsoiled and seeded acres after 01/01/2000. See Annual Reclamation Reports for acres disturbed, graded, topsoiled and seeded prior to the above date.

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