

CHAPTER 25

SIGNS, MARKERS, MAPS, PLANS AND CROSS SECTIONS

CHAPTER 25

INDEX

	<u>Page</u>
Signs and Markers	1
Introduction	1
Mine and Permit Identification Sign	1
Topsoil Markers	1
Perimeter Markers	1
Buffer Area Markers	1
Blasting Signs	1
Maps, Plans and Cross Sections	2

LIST OF FIGURES

		<u>Page</u>
Figure 1	Sample Mine and Permit Identification Sign	3
Figure 2	(Intentionally Left Blank)	4
Figure 3	Topsoil Stockpile Marker	4
Figure 4	(Intentionally Left Blank)	5
Figure 5	Buffer Zone Marker	5
Figure 6	Blasting Warning Sign	6
Figure 7	Blasting Area Sign	6
Figure 8	Blasting Area & Marker Identification Sign	7a

LIST OF TABLES

		<u>Page</u>
Table 1	Index of Maps, Plans and Cross Sections	7

LIST OF ATTACHMENTS

- Attachment 1. Drawing Certifications
- Attachment 2. Drawing Certifications

## CHAPTER 25

### SIGNS, MARKERS, MAPS, PLANS AND CROSS SECTIONS

#### Signs and Markers

Introduction. The signs and markers discussed below will be posted and maintained by Peabody throughout the conduct of the activities to which they pertain. A uniform design is utilized throughout the permit area for each type of sign or marker. The signs are lettered and colored so that they may be easily seen and read. Signs are constructed of aluminum and affixed to steel or wooden supports or the larger signs may be constructed of exterior grade plywood. No local ordinances or codes apply to the signs discussed below.

Mine and Permit Identification Sign. Signs which identify, at a minimum, the name, business address and telephone number of the operator, current permit numbers and other relevant information are located adjacent to the main access road at the entrance to each mine. An example sign is shown in Figure 1. These signs will be retained and maintained until the release of all lands for the adjacent permit area.

Topsoil Markers. Locations where topsoil or other vegetation-supporting material is segregated and stockpiled are marked with topsoil signs affixed to steel or wood posts such as the one shown in Figure 3.

Perimeter Markers. The permit perimeter will be marked with a post. Approximately the top one-foot of the post will be painted a fluorescent color. This will be easy to install, durable, and readily seen. The markers will be placed along the permit boundary before surface mining and reclamation activities occur.

Buffer Area Markers. Buffer areas will be established adjacent to surface mining activities areas and posted with markers such as the one shown in Figure 5. The markers will be placed so as to mark that area not to be disturbed unless the regulatory authority authorizes surface mining activities in this area within 100 feet of a protected stream. See Drawing No. 85642 for locations of the stream buffer zone areas within Kayenta Mine's approved permit area.

Blasting Signs. Three types of blasting warning signs are displayed at the Kayenta

mining complex. These signs are shown in Figures 6, 7, and 8. The sign which displays the blasting warning and all clear signals (Figure 6) is posted on all roads entering the permit area which may reasonably be expected to be used by members of the general public. The blasting warning and all clear signals are also displayed on the mine and permit identification signs (Figure 1). The blasting area signs (Figure 7) are posted along roads which access areas in which blasting is being conducted. The blasting area and marker identification signs (Figure 8) will be posted near the Permit sign.

#### Maps, Plans and Cross Sections

The maps, plans and cross sections required by 30 CFR Chapter VII have been included in this mining and reclamation plan at the locations indicated in Table 1. Where applicable, the maps, plans and cross sections have been prepared by, or under the supervision of, and certified by qualified registered professional engineers or land surveyors pursuant to 30CFR780.14 (also see Attachment 2).

**PEABODY WESTERN COAL COMPANY**

P.O. BOX 650  
KAYENTA, AZ 86033

NAVAJO ROUTE 41  
(928)-677-3201

**KAYENTA MINE**

KAYENTA, ARIZONA 86033

LEASE NOS. 14-20-0603-8580  
14-20-0603-9910  
14-20-0450-5743

MSHA ID. NO. 02-01195

**PERMIT NUMBER**

AZ 0001E

**BLASTING AREA**

WARNING SIGNAL  
SERIES SHORT WHISTLES

ALL CLEAR SIGNAL  
ONE LONG CONTINUOUS WHISTLE

**MARKER IDENTIFICATION**

GREEN

BUFFER ZONE

RED

BLASTING AREA

ORANGE

TOPSOIL

BLASTING AREAS ARE POSTED  
CHARGED HOLES AWAITING FIRING ARE:  
GUARDED, BARRICADED, FLAGGED,  
CONED, OR BERMED

RED BACKGROUND  
WHITE LETTERS

GREEN BACKGROUND  
WHITE LETTERS

FIGURE 1

SAMPLE MINE AND PERMIT IDENTIFICATION SIGN

(12"W x 8"H x 3/4")

FIGURE 2  
(Intentionally Left Blank)

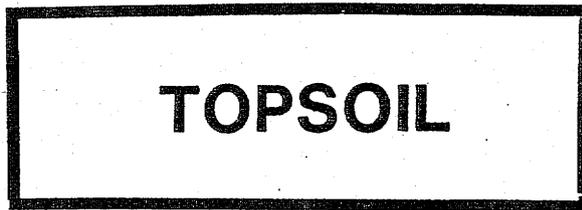


FIGURE 3  
TOPSOIL STOCKPILE MARKER  
(8"x24" reflective orange)

FIGURE 4  
(Intentionally Left Blank)

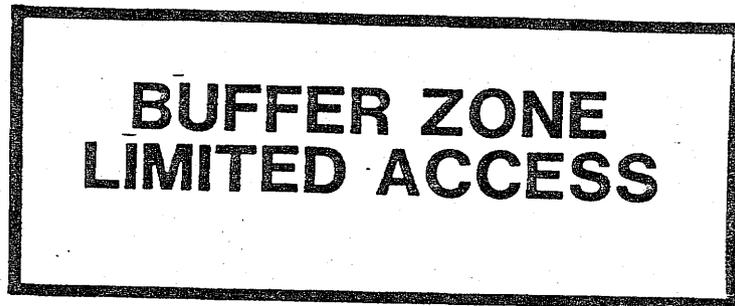
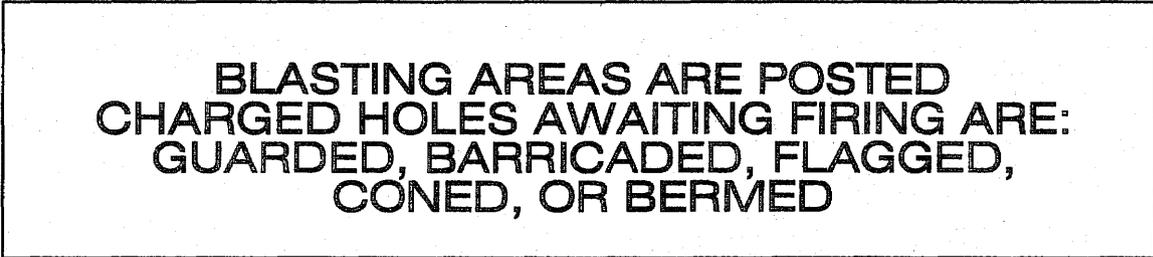
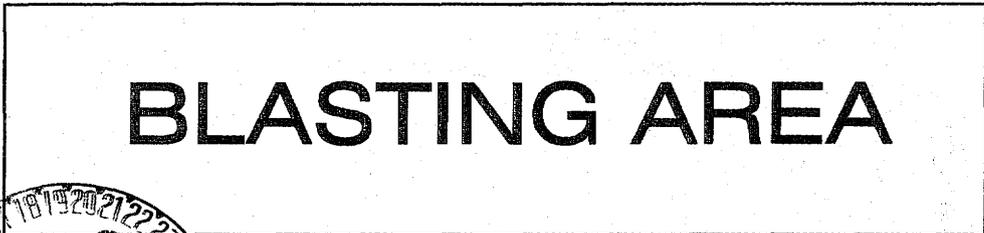


FIGURE 5  
BUFFER ZONE MARKER  
(12"x28" reflective green)





**FIGURE 6  
BLASTING WARNING SIGNS  
(24"x36" & 9"x36" REFLECTIVE RED)**



**FIGURE 7  
BLASTING AREA SIGN  
(8"x24" REFLECTIVE RED)**

Sign that will be near the Permit sign  
(Freestanding sign, Mounted on two poles)

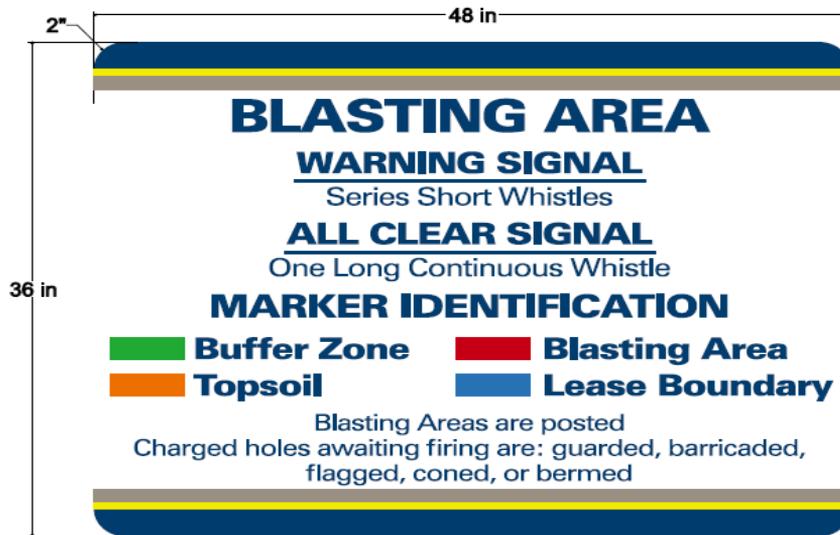


FIGURE 8  
BLASTING AREA & MARKER IDENTIFICATION SIGN

TABLE 1

Index of Maps, Plans and Cross Sections

Drawing Number	Title	Volume
85100	Land Use Map	13
85110	Black Mesa Leases, Right-of-Ways and Permit Area	13
85120	Anasazi Sites with Mining Areas	13
85121	Historic Sites with Mining Areas	13
85122	Anasazi Sites with Compliance Status, Mining Areas and Excavated Sites	13
J-7 Area	Typical Geologic Cross Section	13
J-19 Area	Typical Geologic Cross Section	13
J-21 Area	Typical Geologic Cross Section	13
N-6 Area	Typical Geologic Cross Section	13
N-9 Area	Typical Geologic Cross Section	13
N-10 Area	Typical Geologic Cross Section	13
N-11 Area	Typical Geologic Cross Section	13
N-12 Area	Typical Geologic Cross Section	14
N-99 Area	Typical Geologic Cross Section	14
85210	Mine Plan Map	18
85300	Order 3 and 4 Soil Survey	18
85305A	Order 1 and 2 Soil Survey	19
85305B	Topsoil Salvage Map	19
85305C	Soil Type and Topsoil Salvage Map	20
85310	Geobotanical Study Map	20
85320	Vegetation and Wildlife Habitat Map	20
85320A	Mixed Conifer Woodland Habitat	20
85320B	Great Horned Owl and Red-Tailed Hawk Breeding Sites	20
85322	Pre-Existing Livestock and Wildlife Watering Sources	20
85324	Postmining Livestock and Wildlife Watering Sources	20
85351	North Hole Collar Location Map	20
85351	South Hole Collar Location Map	20
85352	Estimated Postmining Topographic Map (1"=400')	29



TABLE 1

Index of Maps, Plans and Cross Sections

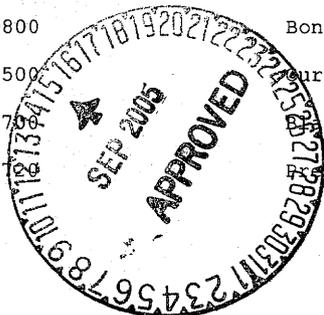
Drawing Number	Title	Volume
85354	Generic Watershed	28
85360	Jurisdictional Permit and Affected Lands Map	20
85400	Drainage Area and Facilities Map (1"=400')	21
85402	MSHA Dam Location Map	22
85405	Sediment and Water Control Structures Map (1"=2000')	22
85406	Siltation & Impoundment Structure Data	22
85408	Impoundments Hazard Map	22
85410	J2-A Dam	22
85412	J-7 Dam	22
85414	J16-A Dam	22
85414A	J16-A Dam	22
85416	J16-L Dam	22
85416A	J16-L Dam Remedial Plan	22
85416B	J16-L Dam As-Built	22
85418	KM-FW Pond	22
85420	N14-D Dam	22
85422	N14-E Dam	22
85424	N14-F Dam	22
85426	N14-G Dam	22
85428	N14-H Dam	22
85430	Typical Road Sections	22
85432	Typical Intermittent or Perennial Stream Ancillary Road Crossing	22
85440	J-19 Haul Road	22
85442	J-19 Deadhead/Haul Road Spur	22
85445	Permanent Roads Map	22
85450	N7-D Sedimentation Structure Grading Plan	22
85460 and 85460A	J2-A Dam, J-3 Airstrip	22
85462	J-3 Airstrip (As-Built)	22
85466	J-3/N-6 Access Road Design	22
85466A	J-3/N-6 Access As-Built Road Plans	22
85480	Black Mesa Mine Facilities (Sheet 1A)	22



TABLE 1

## Index of Maps, Plans and Cross Sections

Drawing Number	Title	Volume
85480	Kayenta N7/8 Facilities (Sheet 2A)	22
85480	Central Warehouse and Operations Facilities (Sheet 3A)	22
85480	Reclamation and J-3/N-6 Facilities (Sheets 4A, 4B, 4C & 4D)	22
85480	Kayenta N-14 Facilities (Sheet 5A)	22
85480	Kayenta Mine Facilities (Sheet 6A)	22
85482A	N-11 Truck Dump/Facilities Site Plan As-Built	22
85484	N-11 Haul Road Spurs	22
85486	J-19 Ramp 46 to 60 Deadhead Road	22
85490 and 85490A	Concrete Ford of Yellow Water Canyon Wash	22
85494	Proposed N-11 Extension North Primary Road Design	22A
85495	Proposed N-11 Extension South Primary Road Design	22A
85496	Proposed N-9 Primary Road Design	22A
85600	Historical Environmental Monitoring Sites	23
85610	Wepo Aquifer Water Level Contours	23
85611	Wepo Aquifer Water Level Contours	23
85613	Overburden and Impact Core Location Map	23
85613A	Overburden and Impact Core Location Map	23
85620	Alluvial Aquifer Water Level Contours	23
85630	Regional and Local USGS Hydrological Monitoring Sites	23
85635	Local USGS Hydrological Monitoring Sites	23
85640	Periodic Wet Reaches Map	23
85642	Stream Buffer Zone Map	23
85642A	At-Grade Road Crossing/Stream Buffer Zone Map	23
85646	J-3 Landfill Grading Plan	23
85700	Moenkopi SEDIMOT II Subwatershed Boundaries	23
85710R	Coal Mine SEDIMOT II Subwatershed Boundaries	23
85720R	Coal Mine Wash SEDIMOT II Postmining Watershed Boundaries 7, 8 & 9	23
89800	Bonding Map	23
93500	Current Environmental Monitoring Sites	23
947	Post Mining Map	23
947	Historical Survey Site Map	23



ATTACHMENT 1

CHAPTER 25

VOLUME 11

PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
Box 625  
Kayenta, Arizona 86033

I have review the following drawings and the information contained thereon is correct, to the best of my knowledge and belief:

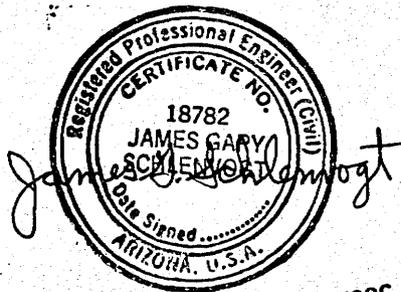
<u>Drawing No.</u>	<u>Title</u>
85130	Blasting Warning Sign Map
85205	Pre- and Postmining Profile Cross Sections (J-7), (J-16), (J-19), (J-21), (N-6), (N-10), (N-11), (N-14) area
85210	Mine Plan Map
85350	Estimated Postmining Topographic Map
85480	Black Mesa Mine Facilities
85600	Environmental Monitoring Sites
85610	Wepo Aquifer Water Level Contours
85613	Overburden and Impact Core Location Map
85620	Alluvial Aquifer Water Level Contours

Typical Geological Cross Sections:

(J-7), (J-16), (J-19), (J-21), (N-6), (N-10), (N-11), (N-14) area

The above certified maps have been filed with O.S.M.R.E., 1020 15th Street, Denver, Colorado 80202

James G. Schlenvogt, P.E.



DEC 19 1986

ATTACHMENT 2

CHAPTER 25

VOLUME 11

Revised 02/20/89

FEB 20 1989

PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
P.O. Box 625  
Kayenta, Arizona 86033

I have reviewed the following drawing and the information contained thereon is correct, to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
89900	AZ-0001-C Permit Map *	05/16/90

\*Drawing 89900 has been included in the Permit Application Package to identify those areas within the AZ-0001-C permit boundary where various reclamation standards apply. Additionally, the drawing indicates the orientation and direction of mining pits and the boundaries of dragline stripping and associated disturbance areas for the initial five-year AZ-0001-C permit term. All other drawings, including those which contain mining plans, have been retained since such drawings, in part, form the basis of OSMRE's analysis of environmental impacts of Peabody's life-of-mine mining plan. Therefore, certain drawings have value for future reference. As maps or drawings are changed in the future, their relationship to existing, similar maps or drawings will be explained.

The above certified map has been filed with OSMRE, 1020 15th Street, Denver, Colorado 80202.



MAY 29 1990

PEABODY COAL COMPANY  
 Black Mesa and Kayenta Mines  
 P.O. Box 625  
 Kayenta, Arizona 86033

I have reviewed the following drawings and the information contained thereon is correct,  
 to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
85205	Pre and Postmining Profile Cross Sections J7-1 to 2, J7-6 to 8	01/24/89
85205	Pre and Postmining Profile Cross Sections J7-3 to 5	01/23/89
85205	Pre and Postmining Profile Cross Sections J16-1	01/17/89
85205	Pre and Postmining Profile Cross Sections J16-2, 11, 18, 19, 20	01/23/89
85205	Pre and Postmining Profile Cross Sections J16-3, 6, 8, 14, 16	01/19/89
85205	Pre and Postmining Profile Cross Sections J16-4, 9, 10	01/18/89
85205	Pre and Postmining Profile Cross Sections J16-5, 7, 13, 15, 17	01/20/89
85205	Pre and Postmining Profile Cross Sections J16-12	01/24/89

The above certified maps have been filed with OSMRE, 1020 15th Street, Denver, Colorado

80202



Ronald J. Gehlke, P.E.  
 Senior Engineer, Peabody Coal Company

**FEB 17 1989**

Revised 02/20/89

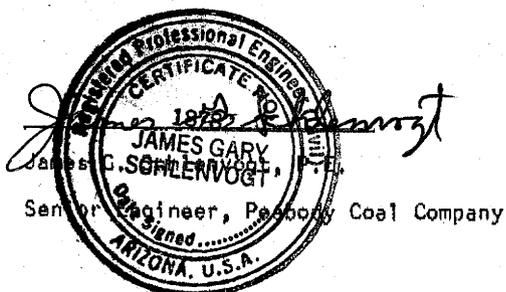
**FEB 20 1989**

PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
P.O. Box 625  
Kayenta, Arizona 86033

I have reviewed the following drawings and the information contained thereon is correct,  
to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
85205	Pre and Postmining Profile Cross Sections J19-1, 2, 3	02/06/89
85205	Pre and Postmining Profile Cross Sections J19-4, 5, 6, 12	02/07/89
85205	Pre and Postmining Profile Cross Sections J19-7, 8	02/05/89
85205	Pre and Postmining Profile Cross Sections J21-5, 7A, 12, 13, 15, 17	02/10/89
85205	Pre and Postmining Profile Cross Sections J21-1, 2, 3, 4, 6, 9, 14, 16, 18	02/09/89
85205	Pre and Postmining Profile Cross Sections J21-7	02/12/89
85205	Pre and Postmining Profile Cross Sections J21-8, 10, 11	02/13/89

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80202.



FEB 17 1989

Revised 02/20/89

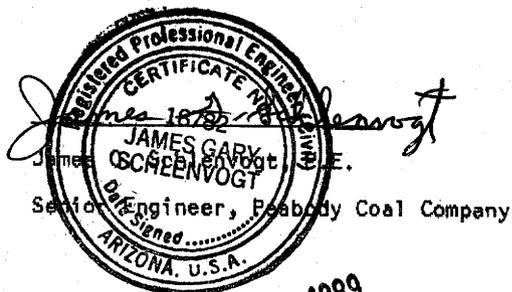
FEB 20 1989

PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
P.O. Box 625  
Kayenta, Arizona 86033

I have reviewed the following drawings and the information contained thereon is correct,  
to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
85205	Pre and Postmining Profile Cross Sections N6-4, 5	02/06/89
85205	Pre and Postmining Profile Cross Sections N6-6	02/05/89
85205	Pre and Postmining Profile Cross Sections N6-7, 13	01/16/89
85205	Pre and Postmining Profile Cross Sections N6-8, 9, 15	01/14/89
85205	Pre and Postmining Profile Cross Sections N6-10	02/03/89
85205	Pre and Postmining Profile Cross Sections N6-12, 14, 16, 17, 18, 19, 20, 21, 26	02/07/89
85205	Pre and Postmining Profile Cross Sections N6-22, 23, 24, 25, 28	02/08/89
85205	Pre and Postmining Profile Cross Sections N6-27, 29, 30, 31	02/09/89

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PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
P.O. Box 625  
Kayenta, Arizona 86033

I have reviewed the following drawings and the information contained thereon is correct,  
to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
85205	Pre and Postmining Profile Cross Sections N10-1 to 7	02/07/89
85205	Pre and Postmining Profile Cross Section N11-10	02/06/89

The above certified maps have been filed with OSMRE, 1020 15th Street, Denver, Colorado  
80202.

  
*Gary Schlenvogt*  
Name: GARY SCHLENOVOT, P.E.  
Senior Engineer, Peabody Coal Company  
ARIZONA, U.S.A.

FEB 17 1989

Revised 02/20/89

FEB 20 1989

PEABODY COAL COMPANY  
Black Mesa and Kayenta Mines  
P.O. Box 625  
Kayenta, Arizona 86033

I have reviewed the following drawings and the information contained thereon is correct,  
to the best of my knowledge and belief:

<u>Drawing No.</u>	<u>Title</u>	<u>Map Date</u>
85205	Pre and Postmining Profile Cross Sections N14-1, 4, 5, 9, 10, 11, 13, 14, 16, 17, 18	01/10/89
85205	Pre and Postmining Profile Cross Sections N14-2	01/25/89
85205	Pre and Postmining Profile Cross Sections N14-3, 6, 7, 8, 12	01/24/89
85205	Pre and Postmining Profile Cross Sections N14-15	01/18/89

The above certified maps have been filed with OSMRE, 1020 15th Street, Denver, Colorado  
80202.

  
Ronald J. Gehrke  
Senior Engineer, Peabody Coal Company

FEB 17 1989

Revised 02/20/89

FEB 20 1989