

**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**TABLE OF CONTENTS**

<b>SECTION</b>	<b>SECTION TITLE</b>	<b>PAGE NUMBER</b>
9	COMPLIANCE WITH HEALTH AND SAFETY STANDARDS .....	9-1

**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**LIST OF TABLES**

**TABLE**

**NUMBER      TABLE TITLE**

---

[9-1](#)              Air Monitoring Stations and Locations

[9-2](#)              Air Monitoring Siting Information

**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**LIST OF FIGURES**

<b>FIGURE NUMBER</b>	<b>FIGURE TITLE</b>
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**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**LIST OF EXHIBITS**

**EXHIBIT**

**NUMBER**

**EXHIBIT TITLE**

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[9-1](#)

Air Quality and Meteorological Monitoring Stations

**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**LIST OF APPENDICES**

**APPENDIX**

**NUMBER      APPENDIX TITLE**

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**SECTION 9**

**COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

**LIST OF REVISIONS DURING PERMIT TERM**

<b>REV. NUMBER</b>	<b>REVISION DESCRIPTION</b>	<b>DATE APPROVED</b>
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## **9 COMPLIANCE WITH HEALTH AND SAFETY STANDARDS**

To comply with the requirements of MSHA, the mine has a qualified and certified staff trained to protect the health and safety of its employees and provide first aid. These personnel have the appropriate MSHA certifications in training, sampling, and in maintenance and calibration of sampling equipment as required in 30 CFR Part 71 and 48. Each new employee receives 24 hours of safety, health, and first aid training. All miners are given 8 hours of refresher training annually and when they are transferred to new positions they receive health and safety training for their new tasks. Weekly safety meetings are held with all miners to discuss health and safety issues.

Industrial hygiene programs at the mine include dust and noise monitoring, as well as special sampling for other contaminants, and implementation and maintenance of engineering control measures such as ventilation. The mine also has an audiometric testing program. All accidents and illnesses are investigated thoroughly to avoid recurrence.

The samplers and their locations are listed in [Table 9-1](#). Locations are given using the New Mexico Base Coordinate System. The location of each sampler is shown in [Exhibit 9-1](#).

### **9.1 Air Monitor Siting**

The air monitors are positioned throughout the mine and located in areas that will facilitate the characterization of fugitive dust emissions from the mining and reclamation operations. Applicable EPA guidance found in 40 CFR Part 58, Appendix E and the EPA Quality Assurance Handbook for Air Pollution Measurement Systems Volume II; Ambient Air Specific Methods, Section 2.11.3, April 1994 as well as various other applicable and general siting criteria were used to locate monitor stations. The siting criteria used included:

1. access on existing public and/or tribal roads;
2. topography and vegetation;
3. proximity to active mine areas and local residences; long range mine plan, and
4. bias from roads, structures, agricultural, and other non-mining activities.

The three primary siting criteria used were:

1. the locations of the most active mining areas,
2. long range mining plan and
3. the location of adjacent residences.

Areas adjacent to the most active areas of the mine were selected to determine the potentially most elevated air emissions. To facilitate the collection of long-term representative monitoring data, monitoring stations were selected in areas that will be not be mined in the next five years.

The siting criteria and the related rationale for locating each monitoring station is found in [Table 9-2](#).

No site preparation, construction of buildings or structures, or land surface disturbance at the air monitoring sites is performed other than access by vehicle or foot traffic and initial monitor setup and demobilization. The monitoring equipment and structures are non-permanent structures that will be removed when monitoring is completed. The monitoring stations generally consist of a trailer mounted solar panel and an air monitoring instrument mounted to a footed elevated metal stand or mounted on a metal tripod assembly. The total land disturbed by monitoring equipment and activities is relatively small, approximately 20 feet x 20 feet. Only existing roads are used for access to the monitoring stations. The access routes used include mine roads and are provided in [Table 9-2](#).

## **9.2 Water and Air Quality Control Facilities**

Water quality control facilities at Navajo Mine consist of:

1. numerous sediment ponds, sewer ponds, and/or pond systems, as discussed in Sections 25 – Sediment and Drainage Control and 26 - Drainage Control Plan,
2. the use of alternate sediment control across the mine site, as discussed in Section 37 – Post Reclamation Vegetation, and
3. the use of diversions and berm/ditch systems to contain water within or divert water away from areas disturbed by mining activities, as discussed in Sections 25 – Sediment and Drainage Control and 26 – Drainage Control Plan.

Various water monitoring stations are monitored by Navajo Mine personnel to help identify the effectiveness of these control facilities, as discussed in Section 42 – Monitoring, Maintenance, Inspections and Examinations.

Air quality control facilities at Navajo Mine consist of the dust suppression system in place at the coal plant, as discussed in Section 40 – Environmental Protection.

Table 9-1 Air Monitoring Stations and Locations

Particulate Sampler Designation	Site Location	Parameter Monitoring	Coordinates (Feet)	Sampler Site Elevation (Feet)
NM01	Watson	PM <sub>10</sub>	329,443 East 2,084,326 North	5307
NM03-1	N. Dixon	PM <sub>10</sub>	293,765 East 2,016,114 North	5370
NM04C	E. Dixon	PM <sub>10</sub>	310,498 East 2,011,066 North	5371
NM06	South of North Area Facilities	PM <sub>10</sub>	314,218 East 2,068,468 North	5437
NM07	NW Area 4N	PM <sub>10</sub>	293,246 East 2,005,812 North	5418

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Table 9-2 Air Monitoring Siting Information

Monitor	Land Status	Siting Criteria	Rationale	Access
NM01	Prelaw	Closest to large population Reclamation completed	1. Location will provide background data and assessment of Navajo Mine Fugitive Dust Control Plan.	Two track dirt road and walk-in
NM03-1	Permanent	<ol style="list-style-type: none"> <li>1. Lowe and Dixon Pits and Lowe Coal Stockpile and loading areas.</li> <li>2. Outside of 5 year mine plan.</li> <li>3. Location is in the vicinity of local residence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Location will allow for the long term monitoring data collection.</li> <li>2. Assess the effectiveness of Navajo Mine Fugitive Dust Control Plan in the Dixon Pit area.</li> </ol>	Two track dirt road and walk-in.
NM04C	Permanent	<ol style="list-style-type: none"> <li>1. Lowe and Dixon Pits and Lowe Coal Stockpile and loading areas.</li> <li>2. Outside of 5 year mine plan.</li> <li>3. Location is in the vicinity of local residence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Location will allow for long term monitoring data collection.</li> <li>2. Assess the effectiveness of Navajo Mine Fugitive Dust Control Plan in the Dixon Pit area.</li> </ol>	Two track dirt road and walk in.
NM06	Permanent	<ol style="list-style-type: none"> <li>1. North Area coal loading and reclaim operations.</li> <li>2. Location is in the vicinity of local residence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Location will allow for long term monitoring data collection.</li> <li>2. Assess the effectiveness of Navajo Mine Fugitive Dust Control Plan in the North Facilities area.</li> </ol>	Public road and two track dirt road.
NM07	Permanent	<ol style="list-style-type: none"> <li>1. W Area 4N and future Coal Stockpile and loading areas.</li> <li>2. Outside of 5 year mine plan.</li> <li>3. Location is in the vicinity of a local residence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Location will provide background data.</li> <li>2. Long term monitoring data collection.</li> <li>3. Assess the effectiveness of Navajo Mine Fugitive Dust Control Plan in the future Area 4N pit area.</li> </ol>	Two track dirt road and walk in.

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**LEGEND**

	PAVED ROAD
	DIRT ROAD
	HAUL ROAD
	TRAIL
	BUILDING
	FENCE
	IRRIGATION LINE
	CULVERT
	DAM
	DRAINAGE
	RAILROAD
	TREES
	POWERLINE
	SPOT ELEVATION
	INDEX CONTOUR
	INTERMEDIATE CONTOUR
	HORIZ. & VERT. CONTROL
	LEASE CORNER
	LEASE BOUNDARY

	NM-01 AIR QUALITY MONITORING STATION
	METEOROLOGICAL STATION No. 1



**NOTE**  
ADDITIONAL MINE STRUCTURES, INCLUDING ROADS, RAILROADS, POND, IMPOUNDMENTS AND CULVERTS, ALTHOUGH PRESENT ON THIS EXHIBIT AS PART OF THE AERIAL BASE MAPPINGS, ARE NOT INTENDED TO BE CURRENT OR ACCURATE ON THIS EXHIBIT. PLEASE REFER TO THE APPROPRIATE P.A.P. TEXT SECTION FOR A MINE STRUCTURE EXHIBIT REFERENCE.

NO.	DATE	BY	REVISION DESCRIPTION	CHK.	APP.
1	12-20-01	PJF	Revised by Meteorological Station which were made in the last 24 hours	VS	VS
2	1-10-02	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
3	3-18-04	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
4	3-18-04	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
5	10-21-07	PJF	Revised by Meteorological Station which were made in the last 24 hours	VS	VS
6	1-13-07	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
7	4-11-07	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
8	12-21-07	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
9	8-11-08	PJF	Added the meteorological station locations in the last 24 hours	VS	VS
10	5-28-08	PJF	Added the meteorological station locations in the last 24 hours	VS	VS

**EXHIBIT 9-1**



**BHP Navajo Coal Company**  
P.O. Box 1173 Fruitland, New Mexico, 87416  
PHONE: 505-568-2300 FAX: 505-568-3361

**AIR QUALITY AND METEOROLOGICAL MONITORING STATIONS**

PREPARED BY	DATE	DRAWN BY	SCALE
PJF	Apr 14, 1998	PJF	1" = 2000'