

West Virginia

The Largest underground mine coal production

West Virginia ranks 3rd in the nation in coal production (1977-1998), and accounts for 15 - 20 percent of the nation's total annual production. West Virginia coal is all bituminous and occurs in seams of mineable thickness in 43 of the state's 55 counties. Recoverable reserves in West Virginia total in excess of 54 billion tons of coal.

Underground mines in West Virginia account for approximately 70 percent of the state's coal production. Surface mines are generally contour operations and, especially in the southern field, are in steep slope areas, with slopes greater than 20 degrees.

West Virginia's regulatory program was conditionally approved on January 21, 1981. Its Abandoned Mine Land Program was approved February 23, 1981, with emergency authority granted on August 26, 1988.

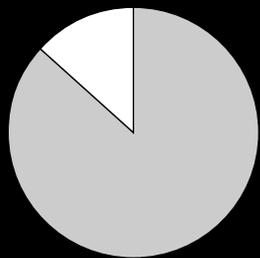
West Virginia spends approximately \$2.5 million annually to eliminate an average of 50 emergency hazards each year. The state ranks 3rd for Abandoned Mine Reclamation Fund monies spent abating emergency hazards. Over half of the emergency hazards abated have been mine subsidence. However, as in neighboring Kentucky, West Virginia's most expensive emergency problems are landslides.

Since 1977 more than \$234 million has been spent reclaiming high-priority Abandoned Mine Land problems in West Virginia. The most common problems were open portals; however, dangerous piles and embankments required the highest expenditures (\$96 million), followed by dangerous highwalls, landslides, and subsidence at approximately \$23 million each. Recently the state has begun to clean up streams polluted by acid mine drainage, a problem that impacts more than 2,500 miles of streams and costs approximately \$100,000 per stream mile to correct.

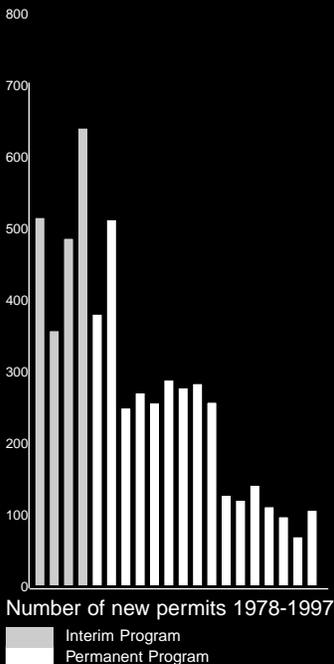
Remaining high-priority Abandoned Mine Land problems are estimated to cost over \$550 million to reclaim. Dangerous highwalls are the most common problem, costing an estimated \$204 million, while polluted water problems (both contaminated water supplies and polluted agricultural/industrials supplies) are estimated to cost \$177 million to eliminate. In addition, West Virginia identifies approximately 130 new Abandoned Mine Land sites in need of reclamation each year.

coal production¹⁰

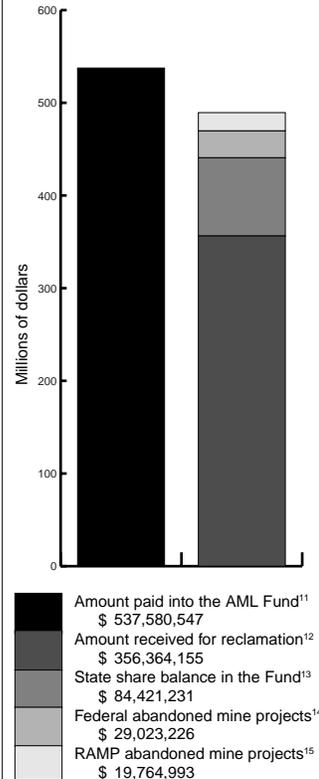
	1978		1997		1978-1997 Rank
	Amount	Percent U.S. Total	Amount	Percent U.S. Total	
Tons Produced					
Surface	11,836,997	4.8%	58,950,705	10.1%	3
Underground	40,761,929	27.0%	119,470,022	28.4%	1
Lignite	0	0%	0	0%	9
Total	52,598,927	12.6%	178,420,022	16.4%	3
Number of Producing Mines					
Surface (bituminous coal)	378	11.3%	356	14.8%	3
Underground	793	31.3%	534	31.3%	2
Lignite (surface)	0	0%	0	0%	11
Total	1,171	19.9%	890	21.5%	2
Mine Production					
Average	44,917	63.2%	200,471	76.1%	
>1,000,000 tons	1	2.0%	43	2.0%	
300,000-1,000,000 tons	24	11.7%	97	28.8%	
<300,000 tons	1,146	20.3%	750	20.9%	



Production tonnage 1978-1997
 U.S. Total
 West Virginia Coal Production



Number of new permits 1978-1997
 Interim Program
 Permanent Program



Amount paid into the AML Fund¹¹
 \$ 537,580,547
 Amount received for reclamation¹²
 \$ 356,364,155
 State share balance in the Fund¹³
 \$ 84,421,231
 Federal abandoned mine projects¹⁴
 \$ 29,023,226
 RAMP abandoned mine projects¹⁵
 \$ 19,764,993

Active mining and reclamation¹⁶

	1978	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	Total
Number of New Permits																					
Surface Mining	213	163	146	189	124	102	99	122	119	133	127	122	136	73	48	56	47	41	30	41	2,131
Underground Mining	154	130	213	276	162	230	94	91	97	106	110	117	90	40	47	55	45	43	31	46	2,177
Other	48	64	127	175	94	180	56	57	40	49	40	44	31	14	25	30	19	13	8	19	1,133
Acres Permitted																					
Surface Mining	17,456	15,078	15,557	18,110	16,044	12,910	9,709	15,765	16,254	13,008	19,848	22,211	9,700	10,858	9,496	12,062	8,223	14,066	9,627	18,143	284,125
Underground Mining	1,201	1,140	2,184	2,262	2,013	6,613	2,524	1,223	1,240	1,717	2,454	1,569	2,670	667	1,055	996	2,361	704	446	676	35,715
Other	649	1,003	2,979	6,940	2,494	8,534	3,447	2,477	1,202	1,565	1,279	1,535	1,063	467	1,252	2,240	1,584	1,392	438	1,373	43,913
Acres of Bond Release																					
Interim Prog. (final)	8,590	16,963	11,285	14,718	5,227	13,174	14,249	9,067	2,804	2,138	3,203	2,715	522	1,313	0	0	0	0	0	0	105,968
Phase 1	0	0	0	0	0	0	0	0	0	8,798	8,920	7,408	7,622	7,502	6,685	8,428	8,697	12,069	5,528	11,375	93,032
Phase 2	0	0	0	0	0	0	0	0	0	1,610	3,083	4,809	4,244	2,960	2,844	3,409	6,933	4,068	3,494	8,389	45,843
Phase 3	0	0	0	0	0	0	168	56	4,761	2,081	5,911	3,720	3,377	3,796	6,109	5,740	7,341	6,707	6,415	6,592	62,774
Inspections																					
Complete	NA	NA	NA	18,000	18,708	19,058	23,195	20,127	18,581	19,620	21,881	18,432	17,244	18,109	1,932	9,926	11,473	11,151	10,249	9,417	267,103
Partial	NA	NA	NA	NA	NA	10,297	6,221	7,273	9,419	12,336	12,785	10,758	14,090	14,656	1,585	16,735	18,108	16,807	12,571	13,156	176,797
Oversight	0	0	0	1,990	350	288	546	521	NA	680	672	811	1,031	623	1,005	693	618	654	348	432	11,262
Citations Issued																					
NOV's	NA	NA	NA	1,214	1,805	6,599	2,767	NA	1,459	2,285	1,679	1,470	2,584	2,574	2,944	2,851	3,124	2,601	1,462	1,241	38,659
CO's	NA	NA	NA	NA	162	132	NA	NA	317	286	196	135	355	347	400	424	383	454	205	131	3,927

Abandoned coal mine reclamation 1977-1997¹⁷

	Reclaimed Problems			Remaining Problems	
	OSM Emergency	State Emergency	Non-Emergency	Number	Estimated Cost
Priority 1 & 2 (Protection of Public Health, Safety, and General Welfare) and Emergency Projects					
Clogged Streams (miles)	15.4	0.9	36.1	21.5	\$ 3,352,736
Clogged Stream Lands (acres)	0	5.0	143.8	163.6	1,008,625
Highwalls (feet)	20.0	25.0	167,358.0	1,371,315.0	204,072,125
Impoundments (count)	4.0	101.0	110.0	599.0	10,215,787
Piles & Embankments (acres)	0	4.0	3,697.3	1,975.4	66,931,312
Slides (acres)	98.0	189.8	186.1	336.6	9,399,620
Gases (count)	0	2.0	1.0	0	0
Equipment & Facilities (count)	0	1.0	343.0	0772.0	10,558,640
Water Bodies (count)	0	0	5.0	24.0	278,744
Industrial Waste (acres)	0	0	29.5	6.1	268,201
Portals (count)	11.0	106.0	1,620.0	1,689.0	7,888,654
Polluted Water: Agriculture & Industrial (count)	0	1.0	21.0	107.0	80,856,205
Polluted Water: Human Consumption (count)	0	2.0	426.0	1,994.0	97,249,989
Subsidence (acres)	48.4	75.9	182.1	719.4	46,633,478
Surface Burning (acres)	0	58.2	309.3	116.2	5,311,191
Underground Mine Fires (acres)	0	12.0	6.0	75.5	8,305,315
Vertical Openings (count)	4.0	47.0	50.0	142.0	1,463,566
Total					\$ 553,794,188
Priority 3 (Environmental Restoration)					
Bench (acres)	0	0	0	221.8	\$ 989,987
Industrial Waste (acres)	0	0	0	49.5	120,250
Equipment & Facilities (count)	0	0	0	139.0	1,558,669
Gob (acres)	0	0	11.0	1,881.0	9,779,728
Highwall (feet)	0	0	18,940.0	2,214,680.0	283,178,092
Haul Road (acres)	0	0	0	12.1	316,092
Mine Opening (count)	0	0	4.0	29.0	338,500
Pit (acres)	0	0	5.0	36.1	211,266
Spoil Area (acres)	0	0	13.6	667.3	3,327,246
Slurry (acres)	0	0	0	13.0	60,641
Slump (acres)	0	0	0	35.3	1,338,501
Water (gallons/minute)	0	0	602.0	16,345.5	23,612,422
Total					\$ 324,831,394