

Virginia

Location of the country's first commercial coal mining

Coal is Virginia's most abundant energy resource and has been important to the state's development since the colonial period. The first commercial production of coal in the United States was in 1748 just west of Richmond. Since the 1880's, the seven counties comprising the Southwestern Virginia Coalfields have dominated coal production, accounting for over 99 percent of the state's production.

Due to steep topography, Virginia mines are predominantly drift-mouth underground and contour surface operations. Virginia produces higher quality coal with higher BTU's (British Thermal Units) and a lower sulfur content than the national average. This has historically made Virginia coal attractive for metallurgical coke production and for the export market.

Virginia's regulatory program was conditionally approved December 15, 1981, and received final approval May 8, 1984. Its Abandoned Mine Land Program was approved with the regulatory program December 15, 1981, with emergency program authority approved November 13, 1987.

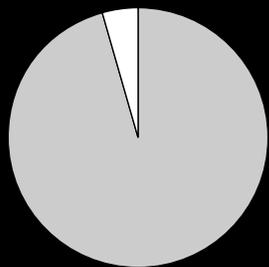
Since the 1950's, Virginia has documented 12 deaths associated with coalfield Abandoned Mine Land hazards. The deaths were associated with drowning, falls, suffocations, and landslides. Injuries have also been reported from a collapsing coal waste pile and from landslides. The Virginia Abandoned Mine Lands Program has spent over \$65 million to reclaim 266 problems, 40 percent of the state's high priority abandoned mine hazards.

Under the Surface Mining Law, 89 emergency projects have been completed. Landslides were the most common and most expensive hazards to reclaim.

Remaining abandoned mine hazards in Virginia include over 2,000 mine openings, 28 acres of burning refuse, 50 acres of underground mine fires, and environmental impacts associated with many hundreds of polluted water supplies or drainage problems. Current annual expenditures on abandoned mine land reclamation in Virginia are approximately \$1.5 million for emergencies and \$6-7 million for non-emergencies.

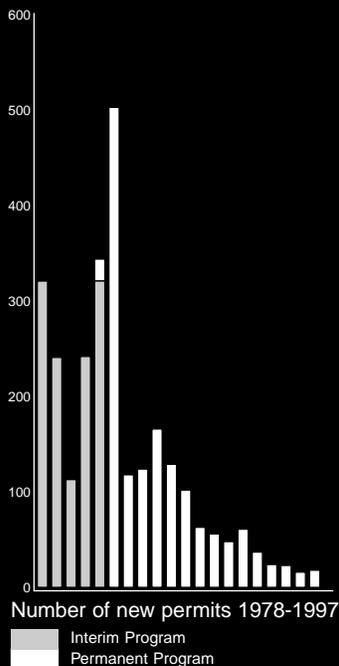
coal production¹⁰

	1978		1997		1978-1997 Rank
	Amount	Percent U.S. Total	Amount	Percent U.S. Total	
Tons Produced					
Surface	7,730,406	3.1%	9,990,033	1.7%	13
Underground	14,111,641	9.3%	26,550,970	6.3%	5
Lignite	0	0%	0	0%	0
Total	21,842,047	5.2%	36,541,004	3.3%	7
Number of Producing Mines					
Surface (bituminous coal)	288	8.6%	123	5.1%	5
Underground	480	18.9%	264	15.4%	3
Lignite (surface)	0	0%	0	0%	0
Total	768	13.0%	387	9.3%	4
Mine Production					
Average	28,440	40.0	94,421	35.8%	
>1,000,000 tons	0	0%	2	0.9%	
300,000-1,000,000 tons	4	1.9%	32	9.5%	
<300,000 tons	764	13.5%	353	9.8%	



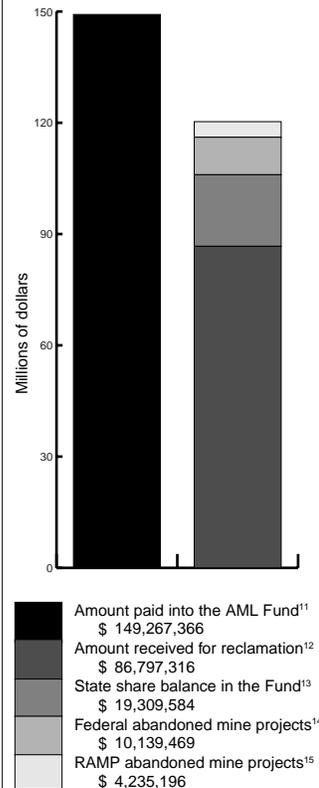
Production tonnage 1978-1997

■ U.S. Total
□ Virginia coal production



Number of new permits 1978-1997

■ Interim Program
□ Permanent Program



■ Amount paid into the AML Fund¹¹
\$ 149,267,366
■ Amount received for reclamation¹²
\$ 86,797,316
■ State share balance in the Fund¹³
\$ 19,309,584
■ Federal abandoned mine projects¹⁴
\$ 10,139,469
■ RAMP abandoned mine projects¹⁵
\$ 4,235,196

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	22	61	40	65	69	93	41	35	56	39	34	29	19	16	21	14	8	10	7	7	686
Underground Mining	273	162	56	135	197	285	56	84	70	60	48	24	27	28	29	14	11	13	7	6	1,585
Other	26	18	17	42	78	125	21	5	40	30	20	10	10	4	11	9	5	0	2	5	478
Acres Permitted																					
Surface Mining	1,500	3,592	2,123	3,552	3,822	13,056	4,417	4,101	5,769	3,649	3,847	4,269	5,157	2,748	4,700	3,230	2,621	1,832	2,880	1,437	78,302
Underground Mining	1,620	810	199	981	735	3,377	377	933	416	642	400	311	579	518	306	147	110	101	65	83	12,710
Other	211	943	419	1,285	1,374	10,400	1,246	753	943	1,523	1,174	678	1,501	26	358	157	176	0	70	181	23,418
Acres of Bond Release																					
Interim Prog. (final)	0	0	14,304	6,590	6,985	6,717	12,170	6,449	2,375	2,048	1,288	741	363	123	0	0	0	0	0	0	60,189
Phase 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	10	205	215
Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	NA	750	1,084	1,834
Phase 3	0	0	0	0	0	0	0	0	0	0	4	353	209	1,028	1,130	1,984	2,936	1,598	988	3,959	14,189
Inspections																					
Complete	NA	7,941	8,971	5,541	8,576	3,615	3,655	4,085	4,568	5,322	5,272	4,816	5,814	4,841	4,053	3,994	3,744	3,689	2,909	3,894	95,300
Partial	NA	NA	NA	NA	NA	5,914	5,621	6,082	6,862	6,134	5,224	5,041	4,943	4,475	4,458	4,205	4,117	3,720	2,943	3,975	73,714
Oversight	0	0	0	0	515	601	332	486	557	460	395	363	330	317	363	469	380	351	244	335	6,498
Citations Issued																					
NOV's	NA	2,017	2,513	2,145	2,975	1,486	1,057	1,040	1,257	1,064	625	724	749	514	460	335	659	308	196	301	20,425
CO's	NA	193	285	192	195	150	105	96	201	135	88	84	40	26	38	53	32	10	8	13	1,944

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)	0	0.2	67.6	150.0	\$ 12,536,739
Clogged Stream Lands (acres)	0	0.1	819.7	1,756.9	20,091,758
Highwalls (feet)	160.0	1,221.0	21,279.0	92,039.0	11,621,656
Impoundments (count)	0	0	14.0	22.0	274,001
Piles & Embankments (acres)	0	0	303.2	154.1	8,011,810
Slides (acres)	29.1	19.2	187.0	122.2	10,339,364
Gases (count)	0	0	0	0	0
Equipment & Facilities (count)	0	1.0	222.0	490.0	5,978,994
Water Bodies (count)	0	0	1.0	16.0	1,005,502
Industrial Waste (acres)	0	0	2.0	1.0	10,000
Portals (count)	8.0	4.0	870.0	1,316.0	3,970,860
Polluted Water: Agriculture & Industrial (count)	0	0	0	201.0	5,000,000
Polluted Water: Human Consumption (count)	0	0	300.0	750.0	7,536,400
Subsidence (acres)	0.1	1.2	5.6	11.5	1,600,000
Surface Burning (acres)	7.9	0	27.3	28.4	4,535,556
Underground Mine Fires (acres)	0	0	0	50.0	4,037,500
Vertical Openings (count)	1.0	8.0	89.0	718.0	21,617,601
Total					\$ 118,167,741
Priority 3 (Environmental Restoration)					
Bench (acres)	0	0	1.0	1,052.0	\$ 4,459,500
Industrial Waste (acres)	0	0	2.0	85.0	259,502
Equipment & Facilities (count)	0	0	26.0	707.0	407,050
Gob (acres)	0	0	21.3	363.0	2,860,500
Highwall (feet)	0	0	0	2,004,799.0	300,130,674
Haul Road (acres)	0	0	1.3	199.5	647,210
Mine Opening (count)	0	0	68.0	160.0	343,701
Pit (acres)	0	0	0	15.0	47,000
Spoil Area (acres)	0	0	5.0	914.5	4,507,500
Slurry (acres)	0	0	0	0	0
Slump (acres)	0	0	0	19.0	109,000
Water (gallons/minute)	0	0	270.0	2,518.0	2,422,075
Total					\$ 316,193,712