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2007 Minerals Yearbook

WASHINGTON [ADVANCE RELEASE]

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U.S. Geological Survey

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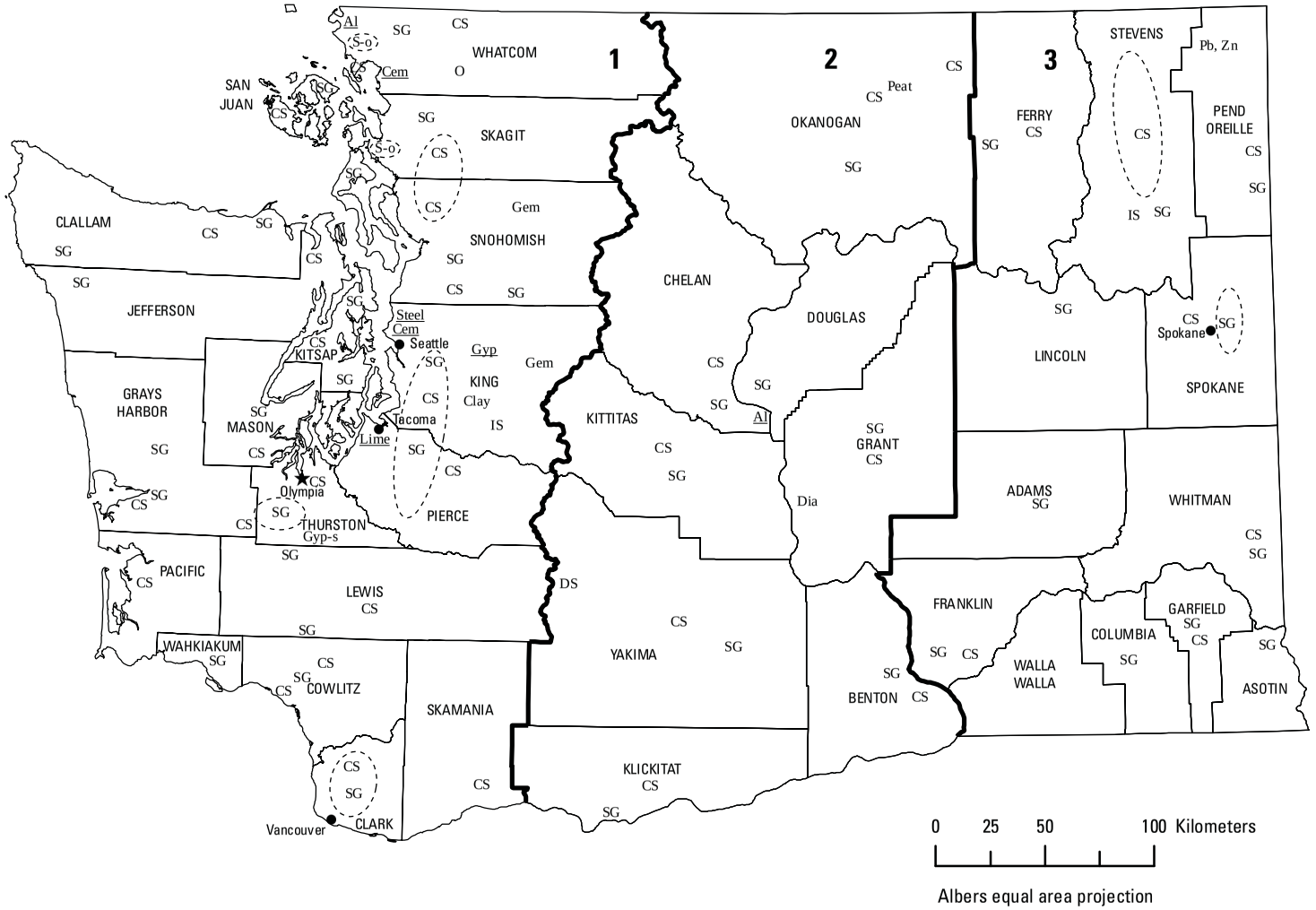
WASHINGTON



LEGEND

- County boundary
- ★ Capital
- ● City
- 1— Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS (Major producing areas)

Al	Aluminum plant
Cem	Cement plant and quarry
Clay	Common clay
CS	Crushed stone
Dia	Diatomite
DS	Dimension stone
Gem	Gemstones
Gyp	Gypsum plant
Gyp-s	Synthetic gypsum
IS	Industrial sand
Lime	Lime plant and quarry
O	Olivine
Pb	Lead
Peat	Peat
SG	Construction sand and gravel
S-o	Sulfur (oil)
Steel	Steel plant
Zn	Zinc

Concentration of mineral operations

Source: Washington State Division of Geology and Earth Resources/U.S. Geological Survey (2007).

THE MINERAL INDUSTRY OF WASHINGTON

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Washington Department of Natural Resources, Division of Geology and Earth Resources, for collecting information on all nonfuel minerals.

In 2007, Washington's nonfuel raw mineral production[1] was valued at $748 million, based upon annual U.S. Geological Survey (USGS) data. This was a 1.5% decrease of $11 million from that of 2006, which was up nearly 19%, or by $121 million, from that of 2005. For the fourth consecutive year, the State was 30th in rank among the 50 States in total nonfuel raw mineral production value and accounted for more than 1% of the U.S. total value.

In 2007, based upon production value, Washington's leading nonfuel mineral commodities were, in descending order of value, construction sand and gravel, crushed stone, portland cement, zinc, and lime; the two aggregate commodities accounted for nearly 66% of the State's total nonfuel mineral value. The largest increase in production value that took place in 2007 was in the value of portland cement, up by more than $25 million. This was followed by construction sand and gravel with a $9 million increase in value, despite a 6% decrease in production. A smaller yet significant increase also took place in the value of lead, which had an even higher percentage of decrease in production. However, these increases were slightly more than offset by decreases, in descending order, in the values of zinc, diatomite, crushed stone, and lime. A small to moderate decrease in the production of zinc resulted in a more than $20 million decrease in the mineral commodity's production value, and the cessation of significant diatomite production led to a decrease in value of more than $10 million in that mineral commodity. Also down in value were crushed stone and lime, by about $7 million each (table 1).

In 2006, Washington continued to be first in the quantities of olivine produced of two producing States, third in the production of zinc, and third in the production of cadmium as a byproduct of zinc production from zinc concentrates. The State decreased to fifth from fourth in lead production and to seventh from sixth in the production of construction sand and gravel, and it was a producer of significant quantities of crushed stone, portland cement, and industrial sand and gravel. Primary aluminum and raw steel also were produced in Washington, but both metals were processed from materials acquired from foreign and other domestic sources. In 2007, with an estimated increase in production of more than 30%, the State rose to fourth from eighth in rank of 11 primary aluminum-producing States.

[1]The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2007 USGS mineral production data published in this chapter are those available as of June 2009. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN WASHINGTON[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2005		2006		2007	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Common	W	W	53	149	84	170
Fire	--	--	25	41	--	--
Gemstones	NA	44	NA	49	NA	49
Peat	W	W	W	W	W	66
Sand and gravel, construction	47,200	282,000	48,400	315,000	45,500	324,000
Stone, crushed	14,300	101,000	16,800 r	174,000 r	17,700	167,000
Combined values of cadmium (byproduct from zinc concentrates), cement (portland), diatomite, gold (2005), lead, lime, olivine, sand and gravel (industrial), silver (2005), stone (dimension miscellaneous), zinc, and values indicated by symbol W	XX	255,000	XX	270,000 r	XX	258,000
Total	XX	638,000	XX	759,000 r	XX	748,000

rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined value" data.
XX Not applicable. -- Zero.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2

WASHINGTON: CRUSHED STONE SOLD OR USED, BY TYPE[1]

Type	2006 Number of quarries	2006 Quantity (thousand metric tons)	2006 Value (thousands)	2007 Number of quarries	2007 Quantity (thousand metric tons)	2007 Value (thousands)
Limestone[2]	17	2,190	$37,000	9	1,840	$21,100
Dolomite	20	152	778	19	159	675
Marble	3	300	3,550	2	318	2,090
Granite	9 r	1,760 r	17,700 r	10	1,840	19,900
Traprock	66 r	8,340 r	74,700 r	61	7,530	68,700
Volcanic cinder and scoria	1	56	581	1	62	581
Miscellaneous stone	37 r	3,970 r	39,900 r	37	5,940	53,700
Total	XX	16,800 r	174,000 r	XX	17,700	167,000

rRevised. XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes limestone-dolomite reported with no distinction between the two.

TABLE 3

WASHINGTON: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	510	7,190
Filter stone	47	651
Other coarse aggregate	123	887
Coarse aggregate, graded:		
Bituminous aggregate, coarse	W	W
Bituminous surface-treatment aggregate	23	95
Railroad ballast	167	1,230
Other graded coarse aggregate	218	1,970
Fine aggregate (-⅜ inch):		
Stone sand, concrete	W	W
Screening, undesignated	65	355
Other fine aggregate	20	99
Coarse and fine aggregate:		
Graded road base or subbase	612	3,870
Unpaved road surfacing	573	3,510
Terrazzo and exposed aggregate	W	W
Crusher run or fill or waste	719	4,390
Roofing granules	W	W
Other coarse and fine aggregates	318	2,520
Other construction materials	191	3,230
Agricultural:		
Limestone	W	W
Poultry grit and mineral food	W	W
Chemical and metallurgical:		
Lime manufacture	W	W
Flux stone	W	W
Special:		
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	54	719
Unspecified:[2]		
Reported	5,080	47,300
Estimated	8,300	82,000
Total	17,700	167,000

W Withheld to avoid disclosing company proprietary data; included in "Total."

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Reported and estimated production without a breakdown by end use.

TABLE 4

WASHINGTON: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch)[2]	670	8,670	--	--	10	56	--	--
Coarse aggregate, graded[3]	392	3,130	W	W	W	W	--	--
Fine aggregate (-⅜ inch)[4]	W	W	W	W	37	311	--	--
Coarse and fine aggregate[5]	1,720	11,500	310	2,060	326	2,120	58	318
Other construction materials	106	1,420	--	--	85	1,810	--	--
Agricultural[6]	--	--	W	W	--	--	--	--
Chemical and metallurgical[7]	W	W	--	--	W	W	--	--
Special[8]	W	W	W	W	--	--	--	--
Other miscellaneous uses	54	719	--	--	--	--	--	--
Unspecified:[9]								
Reported	1,490	15,500	12	120	322	7,630	3,260	24,100
Estimated	7,400	73,000	258	2,400	622	6,100	--	--
Total	12,100	116,000	744	7,150	1,510	19,200	3,320	24,400

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes filter stone, riprap and jetty stone, and other coarse aggregate.

[3]Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

[4]Includes screening (undesignated), stone sand (concrete), and other fine aggregate.

[5]Includes crusher run or fill or waste, graded road base or subbase, roofing granules, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

[6]Includes agricultural limestone and poultry grit and mineral food.

[7]Includes lime manufacture and flux stone.

[8]Includes whiting or whiting substitute and other fillers or extenders.

[9]Reported and estimated production without a breakdown by end use.

TABLE 5

WASHINGTON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	9,810	$74,300	$7.57
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	4	42	10.50
Asphaltic concrete aggregates and other bituminous mixtures	1,440	18,400	12.79
Road base and coverings	5,730	37,000	6.45
Fill	4,150	18,000	4.33
Snow and ice control	211	887	4.20
Railroad ballast	99	690	6.97
Golf course	58	459	7.91
Other miscellaneous uses[3]	353	3,380	9.57
Unspecified:[4]			
Reported	7,090	52,200	7.37
Estimated	16,500	118,000	7.16
Total or average	45,500	324,000	7.12

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

[2]Includes plaster and gunite sands.

[3]Includes filtration.

[4]Reported and estimated production without a breakdown by end use.

TABLE 6

WASHINGTON: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[2]	8,760	66,400	764	5,650	292	2,240
Asphaltic concrete aggregates and other bituminous mixtures	964	15,800	310	1,240	162	1,370
Road base and coverings[3]	3,750	26,100	1,530	8,740	451	2,100
Fill	3,930	17,100	145	517	74	298
Snow and ice control	31	236	W	W	W	W
Golf course	58	459	--	--	--	--
Other miscellaneous uses[4]	412	3,800	31	189	189	732
Unspecified:[5]						
Reported	2,540	19,700	1,910	13,700	2,630	18,900
Estimated	14,700	106,000	957	6,730	872	6,150
Total	35,100	255,000	5,650	36,700	4,670	31,800

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes plaster and gunite sands.

[3]Includes road and other stabilization (cement).

[4]Includes filtration and railroad ballast.

[5]Reported and estimated production without a breakdown by end use.