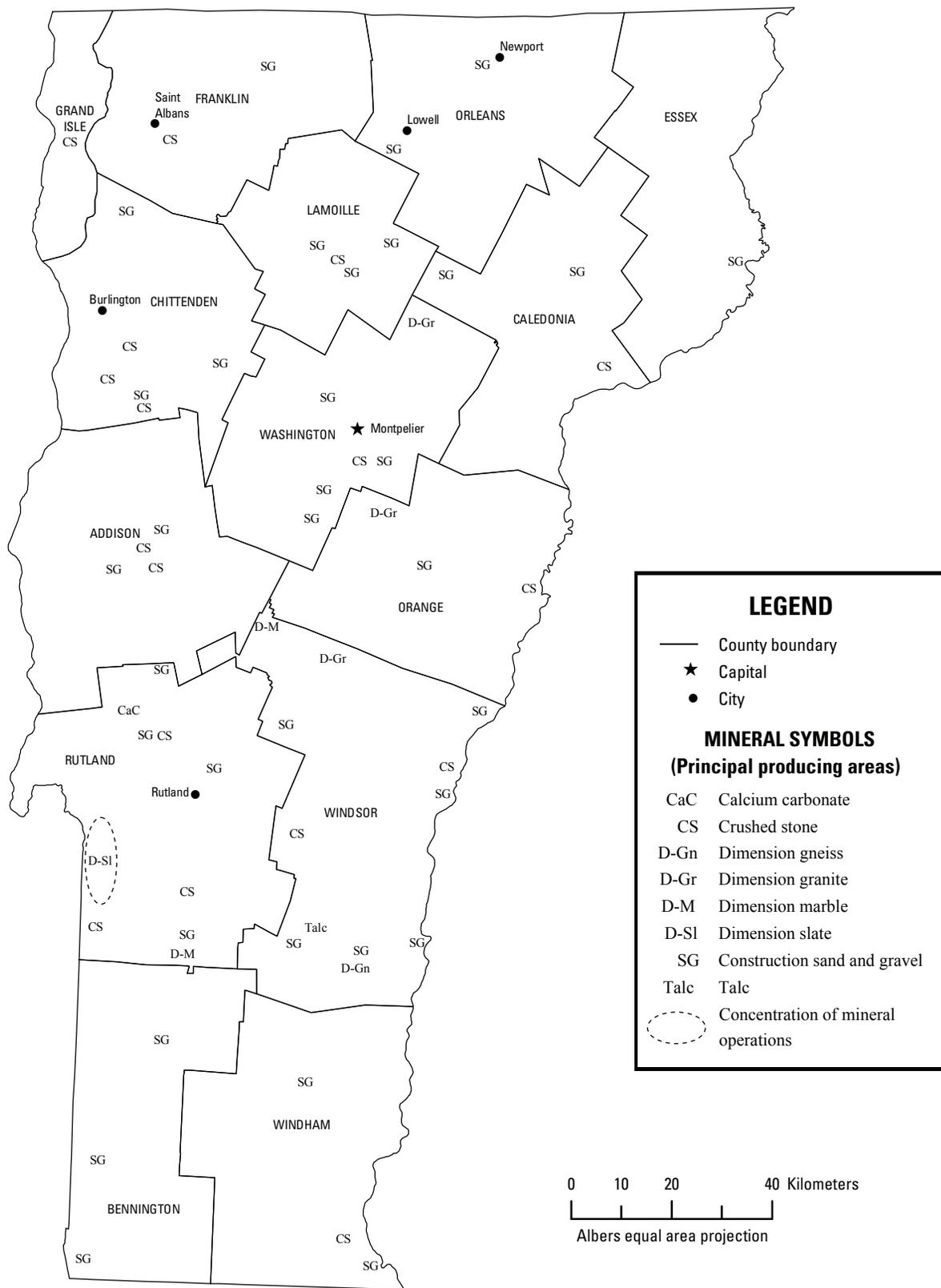




2008 Minerals Yearbook

VERMONT

VERMONT



Source: Vermont Geological Survey/U.S. Geological Survey (2008).

THE MINERAL INDUSTRY OF VERMONT

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Vermont Geological Survey for collecting information on all nonfuel minerals.

In 2008, Vermont's nonfuel raw mineral production¹ was valued at \$111 million, based upon annual U.S. Geological Survey (USGS) data. This represented a \$5.5 million or 5% decrease from the State's total nonfuel mineral value for 2007, which then had decreased by \$7 million or 6%, from that of 2006. Vermont rose to 46th from 47th in rank among the 50 States in total nonfuel mineral production value. The State mineral industry value of nonfuel mineral production rose in rank to 22d in the Nation on a per capita basis; with a population of about 621,000, the value of production was about \$178 per capita.

In 2008, crushed stone, dimension stone, and construction sand and gravel in descending order of value, were Vermont's leading nonfuel mineral commodities. Crushed stone and dimension stone accounted for 71% of the State's nonfuel mineral production. The production and value of dimension stone increased, production by nearly 2%. Most of the State's mineral commodities decreased in production value, partly a reflection of an overall decrease in the activity of the construction industry. A significant decrease took place in the production and value of crude talc. A 20% decrease in crushed stone production led to a \$3.4 million, or 7% decrease in the commodity's production value; a 9% decrease in construction sand and gravel production resulted in a \$2.3 million, or 7%, decrease in its value.

In 2008, Vermont continued to rank third in the quantity of crude talc produced among five producing States. The State decreased in rank to sixth from third in the production of dimension stone and to 43th from 40th in the production of crushed stone.

The Vermont Geological Survey² (VGS), a State agency within Vermont's Agency of Natural Resources, Department of Environmental Conservation, was also known as the Division of Geology and Mineral Resources. The VGS provided the following narrative information.

¹The 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 2008 USGS mineral production data published in this chapter are those available as of July 1, 2010. 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>.

²Marjorie Gale, Environmental Scientist V, a geologist with the Vermont Geological Survey, authored the text of the State mineral industry information provided by that agency. The Vermont Geological Survey is designated in Vermont State government as the Division of Geology and Mineral Resources within the Vermont Department of Environmental Conservation.

Exploration and Development

Mine Permitting

In 2008, the State issued eight sand and gravel extraction permits and amendments through Act 250, known as Vermont's Land Use and Development Law. Four of the permits were issued to reopen or expand operations and four were issued for new sand and gravel extractions projects. Permitted extraction rates for these operations varied up to a maximum of 19,700 cubic meters per year. Additionally, eight permit applications for new sand and gravel extraction projects or expansion of existing projects were submitted under Act 250 for review. Other applications included the removal of 6,800 metric tons per year of rock during a 20 year-period, the downward expansion of a stone quarry, the onsite crushing of an excavated ledge, and the final reclamation plans for a rock quarry. The Act 250 database, with applications from 2002 to present, is available to the public on the Web site at <http://www.anr.state.vt.us/site/cfm/act250/index.cfm>.

Commodity Review

Industrial Mineral

Stone, Dimension.—In January, Rock of Ages Corp., a granite quarrier and manufacturer of finished granite and granite blocks for memorial use, sold its retail operations to PKDM Holdings, Inc. (Rock of Ages Corp., 2008). Rock of Ages focused on quarrying and manufacturing and continued the wholesale distribution of memorials. To increase productivity, Rock of Ages installed new wire saw technology at all their quarries.

Environmental Issues

The Vermont Asbestos Group Mine site is an inactive asbestos mine and mill located on Belvidere Mountain within the towns of Eden and Lowell. In 2008, the U.S. Environmental Protection Agency (EPA) continued interim measures to minimize the amount of asbestos tailings migration offsite. The EPA constructed berms and sedimentation basins onsite to capture the tailings (Vermont Department of Environmental Conservation, 2010). A copy of the EPA Removals Pollution Report and current activities at the mine are available to the public on the Web site at <http://www.anr.state.vt.us/dec/wastediv/SMS/VAG/Reports/0909.EPA.polrep4.pdf> and <http://www.anr.state.vt.us/dec/wastediv/SMS/VAG.htm>, respectively.

Government Programs and Activities

The Vermont Geological Survey.—The VGS conducts surveys and research of the geology, mineral resources, and topography of the State. Emphasis was placed upon completion of the bedrock map of Vermont, surficial and bedrock mapping by town and production of groundwater resources maps for planning purposes, and a natural hazard map program. Mapping projects addressed safety and environmental issues in Vermont: landslide hazards, riverine erosion, and nitrate and naturally occurring radionuclides in bedrock and groundwater. Digital surficial and bedrock data were also used to customize HAZUS, a multihazard risk assessment computer program, to realistically simulate local Vermont conditions. A statewide analysis of existing water well data and a water use study were underway.

The VGS has been an active participant in the STATEMAP program. STATEMAP is a component of the congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: (1) FEDMAP, which funds Federal geologic mapping projects, (2) STATEMAP, which is a matching-funds grant program with State geological surveys, and (3) EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers.

The State Geologist managed interdisciplinary studies with strong geologic components, especially those focused on surface waters, groundwater resources, and geologic hazards. Review of projects as they related to Criteria 9D and 9E of Act 250 was a VGS activity that recognized the importance of lands with high potential for extraction of mineral and earth resources. The VGS also reviewed and made recommendations regarding mine and

quarry reclamation plans in response to current environmental concerns. Reports were prepared, published, and made available to the public, including Federal and State agencies, consultants, and industry, to provide geologic aid and advice to the public as required by State statute.

The VGS continued to provide advice concerning the development and production from rock and mineral deposits suitable for building, road making, and economic purposes. The VGS maintained an archive of old and new information as per State statute. In the event of any significant discovery of hydrocarbons in the State, the VGS was responsible for providing geologic services to Vermont's Natural Gas and Oil Resources Board. Further information about the VGS and the agency's Earth Resources pages were available on the Web site at <http://www.anr.state.vt.us/dec/geo/vgs.htm>.

Earth Science Week 2008.—OYMA Inc. hosted its 8th annual Open House at the white marble quarry in Middlebury. Visitors were able to view and experience firsthand the rocks, the quarry equipment, and products. OMYA and Vermont Marble Exhibit sponsored the Earth Science Week annual poster contest; posters for 2008 were available to the public on the Web site at <http://www.anr.state.vt.us/dec/geo/esweekinx08.htm>. In addition, the North Branch Nature Center sponsored mineral identification workshops and field trips.

References Cited

- Rock of Ages Corp., 2008, Rock of Ages sells retail operations: Concord, NH, Rock of Ages Corp. press release, January 18. (Accessed December 17, 2010, at http://www.rockofages.com/images/stories/pressrelease/roa_sells_retail.pdf.)
- Vermont Department of Environmental Conservation, 2010, Vermont Asbestos Group Mine site: Vermont Agency of Natural Resources. (Accessed December 17, 2010, at <http://www.anr.state.vt.us/dec/wastediv/SMS/VAG.htm>.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN VERMONT^{1,2}

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2006		2007		2008	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel, construction	5,810	37,300	5,140	34,100	4,700	31,900
Stone:						
Crushed	5,880 ^r	50,200 ^r	6,460 ^r	46,200 ^r	5,170	42,900
Dimension	116 ^r	35,800 ^r	110 ^r	35,700 ^r	112	35,900
Talc, crude	metric tons	W	W	W	W	W
Total	XX	123,000 ^r	XX	116,000 ^r	XX	111,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." XX Not applicable.

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

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

TABLE 2
VERMONT: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2007			2008		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	10 ^r	1,880 ^r	\$13,400 ^r	9	1,600	\$13,200
Dolomite	-- ^r	-- ^r	-- ^r	--	--	--
Granite	2	278	2,070	2	239	2,200
Marble	1	2,130	15,100	1	1,810	15,000
Sandstone and quartzite	6 ^r	1,120 ^r	8,490 ^r	6	709	6,090
Traprock	-- ^r	-- ^r	-- ^r	--	--	--
Slate	4	294	1,920	5	255	1,730
Miscellaneous stone	17 ^r	769 ^r	5,300 ^r	18	565	4,660
Total	XX	6,460 ^r	46,200 ^r	XX	5,170	42,900

^rRevised. XX Not applicable. -- Zero.

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

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

TABLE 3
VERMONT: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2008, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	63	672
Filter stone	96	827
Coarse aggregate, graded:		
Concrete aggregate, coarse	90	885
Bituminous aggregate, coarse	W	W
Bituminous surface-treatment aggregate	W	W
Railroad ballast	W	W
Fine aggregate (-¾ inch):		
Stone sand, bituminous mix or seal	151	1,620
Screening, undesignated	58	394
Other fine aggregate	2	17
Coarse and fine aggregates:		
Graded road base or subbase	514	3,790
Unpaved road surfacing	195	1,130
Crusher run or fill or waste	W	W
Other construction materials	2	17
Agricultural, limestone	W	W
Other miscellaneous uses and specified uses not listed	154	1,270
Unspecified: ²		
Reported	111	719
Estimated	3,500	29,000
Total	5,170	42,900

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

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

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

TABLE 4
VERMONT: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	350	\$2,570	\$7.33
Plaster and gunite sands	(2)	2	20.67
Asphaltic concrete aggregates and other bituminous mixtures	139	1,980	14.24
Road base and coverings	475	2,320	4.89
Road stabilization (cement)	72	259	3.60
Road stabilization (lime)	10	80	8.00
Fill	111	533	4.80
Snow and ice control	241	1,290	5.33
Other miscellaneous uses ³	22	212	9.64
Unspecified: ⁴			
Reported	379	2,860	7.56
Estimated	2,900	19,800	6.82
Total or average	4,700	31,900	6.79

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

²Less than ½ unit.

³Includes filtration and railroad ballast.

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